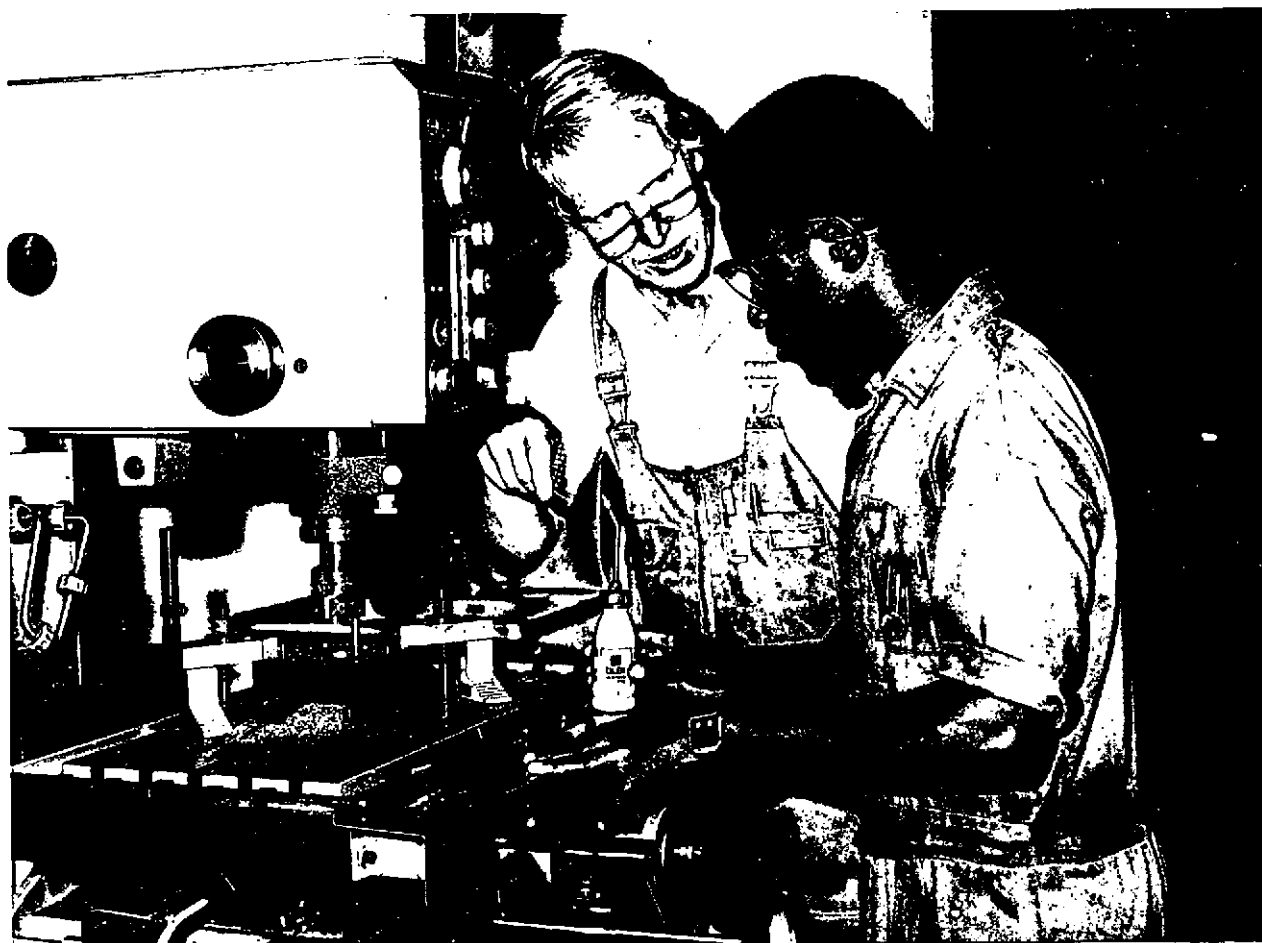


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An Evaluation Commissioned by The Swedish International Development Authority and The National Vocational Training Division of The Ministry of Labour, Culture and Social Welfare. Tanzania, July 1990.



Jon Lauglo



VOCATIONAL TRAINING IN TANZANIA

AND THE ROLE OF SWEDISH SUPPORT

An Evaluation Commissioned by
The Swedish International Development Authority and
The National Vocational Training Division of
The Ministry of Labour, Culture and Social Welfare, Tanzania

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July, 1990

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INTRODUCTION: THE AIMS AND SCOPE OF THE EVALUATION

The goals of this Evaluation are to evaluate the mode of vocational training in Tanzania, to summarize experience in this area from cooperation between Sweden and Tanzania since 1978, and to make recommendations on the future development of the training system and on the role of Swedish assistance. A broad approach is chosen. Much attention is given to the context within which the training provisions operate. This is deliberate, since the efficiency of training is context bound. One of the virtues of a comparative perspective is to relate local issues to those which are internationally important. Therefore there is a first Chapter on international policy issues. Then follows a broad account of how training has evolved in independent Tanzania and what the main assumptions and aims behind policy have been. The validity of some of these assumptions are then examined in a chapter on the economy and the labour market. Yet another 'background chapter' examines the aims and activities of aid agencies, setting the stage for a Chapter on what Sweden has supported.

Then comes the conventional core in evaluation studies. Management and efficiency issues are dealt with in three closely related chapters. But here too, an attempt is to use a broad brush, using varied indicators and types of data.¹

In this broad approach there is no single main thesis. But since this is not a dissertation but an evaluation, there is a case for putting the full texture of concerns and findings on the table, so that decision makers can better make their own judgements about the basis for the conclusions and recommendations which are presented in the end.

Since one major goal has been to assess the performance and process of past Swedish support, which has concentrated on the development of Moshi National Vocational Training Centre, the evaluation has paid very special attention to that Centre. However, the aim is also to inform decisions about future development cooperation. The scope is therefore wider and includes the national system of Vocational Training Centres and directly related institutions. The degree of coverage of the entire system is uneven and has been constrained by practicalities. With few exceptions, fieldwork has been confined to institutions run by the National Vocational Training Division (NVTD) of The Ministry of Labour, Culture and Social Welfare (until 1989 Labour and Manpower Development). The terms of reference of the evaluation is given in Appendix 1.

0.1 Methodology

No profound reflection on methods has steered this study, apart from the pragmatist creed that methods should follow goals and that one should make the most out of available

¹In a draft version (dated 10.3.1990) which has had considerable circulation, it was stated that the proportion of NVTD's recurrent expenditures spent on tradetesting has been as high as 35%. The percentage is less, about 4.5% (Or TSHS 4,437,4300) of the 1989/90 recurrent budget, according to the NVTD. Some unit cost estimates in the draft version have been considerably altered since they were affected by this percentage (See especially Chapter 7.5). Reliable data on actual expenditures are however not available.

expertise, time, money and sources of information. Beyond the terms of reference, many issues discussed in Chapter 1 have remained with the study throughout; and we have sought diverse ways of shedding light on these issues. Much use has been made of documentation, not least as a means by which the investigators have sought to immerse themselves into the situation, in order to prepare for interviews and better to understand them afterwards. Extensive use has been made of fairly informal semi-structured exchanges, designed to cover a flexible agenda, rather than following a fixed sequence that would preclude improvisation. Groups contacted in this way have been Tanzanian and SIDA officials and vocational trainers, officials of other donor agencies, and Tanzanian employers. The much greater number of trainees, and former trainees, have been approached with more tightly structured questionnaires, but supplemented by interviews.

0.2 Intended Audiences

The primary audiences are fairly senior officials of SIDA and of the Government of Tanzania. But within development cooperation and vocational training in Tanzania there are other groups we also would like to reach: those whose daily work is in the training centres, and the staff of other donor agencies. Since some issues discussed relate to current international debate on training policy, it is our ambition to also contribute to that debate.

0.3 Contributions from Members of the Evaluation Team

The Evaluation has been the work of a team. The role of the author of this report has included much assimilation of contributions from the other team members. A number of background reports have been prepared (See **Appendix 2**). Any achievement is therefore very much a shared one, though the author naturally bears responsibility for the conclusions and for deficiencies in the present report.

The distinct contribution of team members have been as follows:

Ahmed Athumani, the Deputy Director of the National Training Division, has summarized the recent history of vocational training in Tanzania. With his colleague, **Mr Gerald S. Kombe**, he has also undertaken a tracer study of trainees from Tanga NVTC.

Trevor Coombe, of the University of London Institute of Education analyzed staffing patterns, staff development issues and cost with special reference to Moshi NVTC.

Egil Frøyland of the Norwegian College of Vocational Teacher Education has conducted a study on technical assistance to Moshi NVTC, drawing on the experience from a larger study in a number of countries of technical assistance sponsored by the Nordic donor agencies.

Mats Hultin, now retired but formerly of the World Bank and the Swedish National Board of Education, conducted a study of the internal efficiency of Moshi NVTC, with special attention also to Tanga NVTCs, and with some observations on other VTCs visited more briefly.

Anders Närman with several groups of his research students from the Department of Human and Economic Geography, University of Gothenburg, have since early 1987 conducted a comprehensive tracer study of trainees from Moshi NVTC, following up a number of classes as far as the lapsed time allows (**Espling, Sjöberg and Waller, 1988**), with further tracing to be done until 1991. They have also examined labour market conditions and employers' views of the trainees and of the NVTCs. A social rate of return analysis was even attempted as a one-person enterprise (**Lovén, 1989**) in one of these student fieldstudies.

We were also able to draw on a concurrent evaluation of Dar es Salaam NVTC at Chang'ombe, for Swiss Development Cooperation, which was conducted by **Herbert Burk**, of the Zentralstelle für Gewerbliche Berufsförderung og the GTZ, Germany, with a specialist contribution from **Richard Mushi**, University of Dar es Salaam, on the Administration and Management of the Chang'ombe Centre.

CHAPTER 1

VOCATIONAL TRAINING POLICIES - INTERNATIONAL ISSUES

1.1 Introduction

Current international training policy issues are important for this Evaluation. They set the stage for analysis of Tanzanian conditions. Events in Tanzania also have a wider significance, not least because the Tanzanian model of training is a combination of two training modes which are now much vaunted internationally, also when they exist singly: 'dedicated' post primary training centres which give clearly 'vocational' courses of fairly short duration - and apprenticeship in industry. Much of the present interest in these modes comes from disenchantment with vocational training given within secondary schools. The World Bank Sector Study of Vocational Training, which at the time of writing (June, 1990) has not been finalized, is likely to stress this disenchantment with schools and look to 'centres' and 'industry' for training. In Tanzania they have pioneered such a dual approach. How does it work?

Tanzanian politics have been strongly socialist, and like many developing countries, the view of vocational training has been influenced by the wish to replace expatriate skilled labour and to meet the manpower needs of planned industrial development. Important assumptions about the link between training and the labour market are connected with such national concerns.

Efficiency concerns are important for training policies. Throughout the world, the complexity of routine vocational training poses special management demands. In addition, 'user control' and involvement by industry are acclaimed as a means to improve external efficiency. 'Institutional development' which seeks to motivate 'insiders' is more concerned with internal efficiency. An important international question is the compatibility of these different strains of 'decentralization', and how they agree with a general need in developing countries for structurally simple training models.

1.2 Views of Relationships between Training and the Labour Market

Views about training find justification in perspectives on the relationship between training and the labour market. Such perspectives will be informed by experience - and hopefully by research, but they are also associated with political ideologies: with values and beliefs. It is important to recognize that policies on training have such a foundation.

Contrasting perspectives on training are associated with two well-known alternative approaches to 'human resources development': on the one hand planning of manpower-requirements and optimism about macro-economic planning, on the other: cost-benefit

analysis and general optimism about market mechanisms. A third perspective is that the role of training depends on labour market segments and supply & demand conditions.

1.2.1 Manpower Planning

Manpower planning usually means, first, to forecast or assume a certain overall or sectoral economic growth rate as a reachable target. The output of training institutions is then planned to meet the requirements which are derived from these targets, taking account of existing stocks of manpower and rates of 'wastage'. Forecasts are made of future requirements as to speciality and level of skill. The approach crucially assumes that the distribution of labour requirements by occupation and skill level can be predicted.

A combination of macro-economic planning - with manpower planning as a derivative of it - and highly specialized vocational training (ideally based upon a foundation of pre-vocational polytechnical education) has characterized the socialist industrialized countries. But Western countries with a strong centralist tradition (e.g. France) have also devoted much attention to manpower planning. It was a major concept in the activities of the OECD in the 1960s. Manpower planning has also been a common foundation for education policies in developing countries. Donor agencies have encouraged or even required the practice of manpower requirement forecasts as part of development plans.¹

The approach has some well known problems. The development of economies cannot be forecasted let alone planned with sufficient precision; and there is more substitutability between different productive inputs and types of labour than the approach assumes. Detailed forecasts of manpower requirements are therefore notoriously unreliable. Further, one needs to examine the economic value of training in relation to its cost.

In spite of these deficiencies, elements of manpower planning continue in general use. Decisions need to be made in advance of the labour market entry of those who have been trained, about the scale of intake and required facilities in the training specialties. To make such decisions, some estimate of future manpower demand is surely needed. But estimates will be more realistic when the time horizon is short. It is therefore crucial that estimates be continually adjusted by labour-market monitoring. Forecasting will be more realistic when it uses effective demand rather than using normatively derived development targets as the starting points. But development strategies have a built-in impetus to be unrealistic, because they are political responses to urgent needs.

A common justification for increased vocational training is to build up a supply of skilled manpower in readiness for 'planned' industrialization or economic upturn. Such policies have been pursued by socialist governments in connection with industrialization drives (as in Tanzania), and also by free-marketeers in anticipation of economic upturns (e.g. the Thatcher government in the UK). If demand does increase, this approach will be vindicated. The longer the wait, the stronger will be the disillusionment. Dougherty (1988:53) in a recent survey of research, cautions against such training policies:

¹Interestingly, just like the US made plans a condition for Marshall Aid in Europe after World War II, so donors have encouraged governments of developing countries to formulate national education plans, and manpower plans, regardless of the home practice of donor governments. 'Requiring planning' goes with the greater need for accountability which inheres in grants or soft loans.

It is frequently argued that industrialization can be encouraged by the prior establishment of a trained labour force...it is reasonable to suppose that the case is stronger for school-based general technical education than for job-readiness training, school-based or otherwise. Many studies have shown that skills tend to be lost if not used immediately, and the deterioration is most rapid, the more specific the training...Further, there is little evidence that there is any need for speculative training - in-advance...job-readiness training can normally be executed in real time, that is, during the construction of the physical facilities. The existence of a service unit on the lines of the start-up units that have been organized in several US States which can help to organize, and perhaps subsidize, real-time training is likely to be more attractive to an incoming enterprise than the prior existence of a stock of workers with imperfectly appropriate and decaying skills.

However, to train the needed skilled workers while their factory is being constructed may well be workable when there is already a well-educated highly trainable labour force locally available - and when mobile highly skilled staff can be recruited from elsewhere in a large and varied economy (as in the United States). But it is not a convincing recipe for developing countries with a poorly educated labour force. There is an inevitable need to train in readiness for demand. The question is how far is it possible to forecast demand. Transferability of skills across specialties becomes important in training for uncertain labour market conditions. 'Supply' policies for training will tend to be less realistic if the planning period is 'long' and if they assume that drastic change can occur in a country's technology and economic structure during that period.

Apart from serving as a basis for decisions about the scale of training, the manpower planning approach reinforces two important structural features in training:

- a) an emphasis on separately institutionalized training rather than employment-based provisions because separate institutionalization is more amenable to government planning.*
- b) fairly narrow training specialties, based on the assumption that not only can the demand for skills be forecasted, but that even highly specialized job openings will also be met by those who have been formally trained.*

These two structural features have in recent years been increasingly criticized. Both neo-classical economics and labour-market segmentation theory have fueled such criticism.

1.2.2 Faith in the Market

Neo-classical economic theory asserts that the market mechanism is superior to economic planning by government. In keeping with a limited role for government, this perspective supports private training. This has two aspects: private training institutions (e.g., proprietary schools) and training organized by employers. World Bank policies follow neo-classical economics in this respect, stressing both 'privatization' and the role of employers in providing training. In this perspective, to stimulate economic development the role of government should be 'facilitating' and indirect - not directive long-term macro-economic planning. Economic growth results from the competitive adjustments and innovations which producers make in response to market forces. The future

occupation-specific skill requirements are then not highly foreseeable - the optimal mix of different kinds of labour will vary depending on price and technology.

A condition of high uncertainty is postulated. This view gives priority to knowledge, skills, and attitudes which are useful for learning new tasks and which can be applied across a variety of economic roles - "portable skills" in Bowman's (1988) words. Hence an emphasis on general education, and a tendency to see a good general education as the best vocational training that schools can offer, whilst vocational training in the 'occupation-specific' sense must be provided in close association with the workplace. Thus, 'good general education' is seen as a precondition for trainability on the job. But there is however much vagueness about what the relevant general education or portable skills are. Is it simply grounding in literacy and numeracy? Science? Pre-vocational subjects that relate to broad occupational 'families'? A 'practical approach' to the teaching of any subject? Stress on moral education - perhaps even religious or political education to instil integrity, discipline, willingness to work hard? It has even been argued that good vocational training geared towards a specific target occupation produces important transferable values, attitudes and skills so that, ironically, *specialized training is a kind of general education* (See Section 1.4.3). These types may vary as to expense and ease of implementation. Pre-vocational general education is certainly not a cheap and easy solution (Lauglo and Lillis (1988)).

There is very little research as to which aspect of 'general education' actually makes people more trainable. But there is research on employers' opinions. The kind of general education employers prefer is: good practical communication and computation skills, reliability, punctuality, willingness to 'work hard' etc. Such answers are typically obtained by research in both industrialized countries and developing countries when employers are asked what they 'want from school' (Oxenham, 1988; Noah and Eckstein, 1988). Employers also complain that school-leavers all too often lack these traits. But regardless of what they might want from *school*, employers surely will have additional specifics in mind when they hire workers for particular skilled occupations. Dougherty (1988) claims that planners tend "to overestimate the need for extended pre-employment training for entry-level jobs", but it is also true that many occupations have quite specialized skill prerequisites. To leave such specifics to employers and training-on-the job can be a romantic view of the training potential of workplaces (Cf. Section 1.4 below, and Ch. 8).

Cost benefit analysis as a planning tool is closely associated with faith in the market mechanism, and with neo-classical economics. A crucial assumption in cost-benefit analysis is that pay measures marginal productivity. By this way of thinking, the value of vocational training is best indicated neither by how well trainees are prepared for a 'target occupation' nor by the rate of entry to that occupation. Rather it is measured by the additional income stream accruing to former trainees as compared to the direct and indirect cost of their training. Internal rate-of-return calculations exemplify this approach. A well-known recent application to pre-vocational streams within mainstream secondary schools is Psacharopoulos and Loxley's (1985) research in Colombia and Tanzania. They conclude that the rate of return to 'diversified streams' is poor: the cost of these streams was greater but they yielded no income advantage. But perhaps of greater interest to those who may doubt the assumptions behind rate-of-return analysis, is their finding that vocational streams did not lead to better chance of finding employment either. In the present Evaluation, Chapter 8.6 discusses an application of such methods to Moshi NVTC (National Vocational Training Centre).

The main argument against rate-of-return analysis is that salaries and wages are poor measures of benefit to society, that the data series on life income streams which are used in these calculations are often a mix of a many cohorts and not genuine income streams of any one cohort, and further that past income streams in any case can be a poor predictor of future income streams. Whilst manpower forecasting rightly stands accused of inaccurate projections of skill requirements, rate-of-return analysis can be accused of projecting into the future dubious measures of past streams of contributions to the national economy.

1.2.3 Segments and Changing Market Conditions

Segmentation theory asserts that the labour market is segmented by *i.a.*, recruitment procedures, the importance of education/training for selection, and by styles of training associated with each segment. To understand the role played by training and the form that it takes, it is therefore necessary to look at segments separately.

In developing countries, the most widely used notion of labour market segments is the contrast between the 'modern sector' on the one hand, and the 'informal' and 'traditional' sectors. But the notion of segments is often applied within the 'modern sector' - in particular to social class distinctions among occupations. It is argued that the importance which training/education credentials have for economic life chances varies among such segments. One example is a study by Caillods and Briones (1981) on Colombian data. In general, they found but a loose connection between technical/vocational training and labour market destination. But the importance of credentials from schools and training institutions differed among the occupational levels in the companies. Education was the main criterion for recruiting managerial staff, but educational credentials were less important in recruiting technicians - priority was not always given to graduates from technical schools. And formal credentials were clearly not the main criterion for employing skilled workers. Skilled workers were trained mainly on the job, and were presumably hired through internal promotions or connections.

A segmentation perspective can be (but need not be) derived from the thesis that education/training serves the vested interests of oligarchic groups which dominate politically and economically (Carnoy, 1980). A main claim is then that schools socialize those destined for subordinate economic roles, to values of docility and obedience. Conversely, schools and institutions attended by the future managers and professionals are said to place more emphasis on independent thought and action. These differences would then be reflected in contrasting pedagogic style between vocational training and academic education. Future managers and professionals are taught in a style which encourages independence of judgement and 'problem solving', whilst future workers are taught precision in 'working to blueprints'.

It used to be claimed that educational credentials play an especially important part in selection to modern sector jobs in developing countries. If this were generally true, it would strengthen the case for school-based training, because access to jobs would then depend on certificates. But, as noted above, this 'credentialist' thesis is now questioned - and especially for skilled manual work. The importance of credentials for access to jobs will also depend on how sharp the competition is. Competition can change over time as, e.g., the market can become glutted with 'qualified' applicants. Oxenham (1984) observes, based on impressions and reviews of research in a number of countries, that *"the greater the competition for employment, the greater is the importance of social connections in*

addition social background and education" for access to jobs. It has been shown that doing well in school (or just passing the exam) conferred no particular advantage in the quest for jobs among leavers from lower secondary schools in Kenya (Lauglo and Närman, 1987). There are similar findings for Kenyan technical secondary schools (Lauglo, 1989). But interestingly, research by Kinyanjui (1974) shows that doing well in secondary school *did* give an advantage in the Kenyan labour market of the early 1970s - before the market became glutted with secondary school leavers.

In an extremely depressed labour market - this is now the rule for school leavers in developing countries - it is likely that other factors than credentials from education and training come into play in the competition for paid employment. In particular, pre-employment school-based training is likely to be very loosely connected with subsequent 'relevant' work under such conditions. In the study of Kenyan technical secondary school leavers (Närman, 1988) one year after the final exam, only 15% had found work or further training of a broadly technical type - and then only rarely in their trade of specialization. The technical secondary schools were initially conceived as preparation for 'formal' apprenticeships. But not a single trainee (out of a sample of 480) had obtained an apprenticeship within one year. However, in Botswana, with a much less difficult labour market for young job seekers, the trainees from the Botswana brigades (also pre-employment training without any placement in industry or apprenticeship) are fairly easily absorbed into their trade of specialization (Närman *et al*, 1988).

Loose articulation can also occur under buoyant labour market conditions and then because workers are able to move out of the occupations for which they have been trained in pursuit of better pay and working conditions. Vassnes (1980) showed in a 9-year tracer study of former vocational school students in Norway that only 1/4 were in the trade they had trained for; one-third of them said they hardly made any use of their training at all. Research reported by the National Board of Education (1975) showed very similar results for Sweden. One can speculate that, in general, the relationship between training and subsequent career is most loose in extremely depressed *and* in extremely buoyant labour markets but for different reasons: in the former, trainees lack access to jobs in their trade, in the latter case they have the access but find better opportunities elsewhere, perhaps after some initial experience in their trade.

In any country there is a positive correlation between pay and level of education for the labour force as a whole. But this is not an impressively tight association; and it does not mean that credentials always give an advantage in the labour market. Employers can even discriminate against 'overeducated' or 'overqualified' applicants. Oxenham (1984) refers to the Finniston Report of 1980 which showed for Britain that many employers, particularly smaller ones, are prejudiced against the more educated applicants. Lehmann & Verhine (1982) reported that for blue-collar skilled work, Brazilian employers do not seem to take scholastic education into account and may view better educated applicants as 'overqualified', preferring instead to keep close to the minimum qualifications.

To be sure, employers will look for good skills for the kind of work which needs to be done and within the pay range they think appropriate; but they will also suspect qualifications which could make a worker restive in the job, impatient for quick promotion or otherwise less motivated than those with humbler credentials. Such considerations may be especially important for jobs which are on a very constricted career ladder; and many manual jobs are of this kind. It is a common impression in Kenya that employers in the private sector are sceptical of school-based vocational training. Instead, for skilled manual

labour, they are said to prefer more cheaply employed persons who have been trained on the job and who have already proven their reliability. It could be that when they do recruit from institutionalized training, they prefer the Kenya National Youth Service whose training has been clearly focused on trade skills, with army-like emphasis on drill and discipline. Kukler (1987) showed high absorption of such trainees into their respective trades - in contrast to the bleak prospects of technical secondary school leavers (Närman, 1988).

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A major lesson from research on connections between training and the labour market is that training must be planned and monitored with close regard to the recruitment and promotion processes in the particular labour market segment for which it is intended. It is not sufficient to identify skills and forecast the demand for labour. One cannot simply assume that training will monopolize the supply to the occupations for which it is officially intended. In many occupations, there is much on-the-job learning which can lead to promotion into other and more skilled jobs without formalized training. Marketable specialist skills are not only acquired in the education system. For example, Dougherty (1987:9) notes that according to 1963 surveys in the United States, *the military had trained 44% of health technicians, 25% of electrical engineering and related technicians, 64% of the bakers, 28% of the telephone and power line men and related workers, 61% of the airplane mechanics, 22% of the automechanics, and 25% of the radio and television repairmen.*

In short, the connection between training and jobs is problematic. One simply cannot assume that training will lead to related jobs. Nor can one simply assume that jobs requiring specialist skills will be filled by training programmes officially intended to furnish these skills. It could also be that a given type of training turns out to be recognized as good preparation for jobs it has not been intended for. These relationships need to be monitored. One needs to find out what happens to trainees after training and the implications of skill utilization. Equally, one needs to examine out how the 'target jobs' are filled, the process of recruitment to the occupations concerned and what employers are looking for. In some conditions, employers may not be primarily 'looking for skills'. The question may rather be whether those candidates to whom the employer has some kind of obligation, can measure up to minimum requirements. When jobs are scarce, they can become a life-line to kith and kin, rewards to employees who appear as sponsors of the newcomers, or a tribute to persons of influence on whose goodwill an employer depends.

1.3 Efficiency of Training and Management Issues

1.3.1 External Efficiency

Vocational training is intended to prepare for specific occupations or clusters of related occupations. *External effectiveness* must therefore be a prime concern. The key general questions are: How well does training prepare for the occupations concerned; and does it in fact lead to these occupations? How much does it improve the productivity of persons who have been trained - in these occupations or in others? A range of more concrete

indicators are suggested, e.g, the general rate of labour force absorption after training; the rate of absorption into the intended occupations; added pay as measures of the market value of skill increases; direct measures of added productivity; ratings of the match between work demands and contents of training, ratings of actual utilization of skills acquired during training. Further, with the need to make the best use of scarce resources - vocational training has usually high unit costs - one is also naturally concerned with cost and with *external efficiency*, insofar as this is measurable.

The conventional wisdom is that external effectiveness is better in those modes of training which at least in part are based in the world of work itself. But labour market conditions affect the external efficiency of *any* training mode. Probably the most 'advanced' apprenticeship system in the world (Germany) reportedly has quite low percentages of trainees who as adult workers remain in the trade in which they were initially apprenticed. External effectiveness will in any case also depend on the internal effectiveness of training. Access to jobs depends on the reputation of training. Performance on the job will depend on the skills acquired.

1.3.1.1 Tracing Trainees

It could be argued that one would need to trace trainees through an entire working life to see the benefits of training. But in economic terms, the present value of future benefits declines with time; and skills which are not put to early utilization will decay and lose market value. Further, early occupational experience will itself frame opportunity for later work and is a source of on-the-job learning which steers later career. The 'first real job' after training is therefore a fairly good rough indicator of the rough relevance that training will have for subsequent work. The match between training and work is unlikely to improve much with time after the 'first real job', though it may not decrease much either - as shown in research on Norwegian trainees (Vassnes, 1980). But it is important to note that in very depressed labour markets young people often go through a protracted period of job search, often over several years. N rman (1988b) showed that secondary-school graduates in Kenya have much the same high level of unemployment (about 40%) after three years as they had one-year out of school. In such extremely depressed labour market conditions, tracer studies need to follow trainees up long enough to distinguish more enduring sources of livelihood from the early stop gaps -though this distinction may not be so easy to draw.

1.3.1.2 Monitoring

In-depth research, using tracer studies, can only provide occasional glimpses of external effectiveness - under labour market conditions which can change fast in individual trades. It is therefore important to develop regularized follow-up as part of a management information system for training. Such information can be collected from local officials responsible for placement of trainees, from former trainees themselves, and from their mates who still remain in a training institution. If an inplant training or apprenticeship system is operated, local supervisors will be another source. Donor financed projects could experiment with simple incentives to encourage report back, e.g. promise trainees an address sheet or a class picture in return for information about their whereabouts and activity one year after training. Working out from the training institution, using informal networks fully, would make regular follow-up of trainees more manageable.

1.3.2 Internal efficiency

Internal effectiveness is simply the success, during training, in transmitting the intended skills, knowledge and attitudes, regardless of their later application. But again there will be concern about optimum use of scarce resources in bringing such success about, or with the wider notion of internal efficiency. Certain constraints on internal efficiency are very common throughout the world: staffing inadequacies, high costs and complex equipment/materials requirements, poor curriculum and course design, and high management complexity.

1.3.2.1 Cost of Training

Another major constraint is high development costs per trainee place and high unit recurrent costs (Cumming, 1988). The more sophisticated the technology taught, the more expensive the needed teaching equipment and materials usually will be. The high cost of replacing equipment makes it difficult to keep up with changing technology. Often groups of less than 16 are taught in a training workshop. Instructor-trainee ratios of 1:7 are not unusual. This drives up unit teaching costs greatly in comparison with 'chalk-and-talk' subjects. Non-teaching recurrent costs for consumables and spare parts tend to be much higher than expenses for materials in academic subjects. When recurrent budgets are squeezed severely - this is everywhere the case in developing countries - teachers' pay takes precedence over other recurrent expenses, leaving workshops without adequate basic supplies. Donor financed training facilities often fail to plan adequately for the crucial long-term need for spares, materials, consumables. The high cost is an argument for concentration of training - rather than spreading resources thinly. It is also an argument for shifting training responsibility on to employers, to save expenses from public coffers. But, employers may be unable or unwilling to assume more training responsibility.

1.3.2.2 Selecting Trainees

As noted by the Asian Development Bank (1989: 34), admission requirements to vocational training will inevitably be seen in the light of problems of school leaver unemployment, illiteracy, and population growth - i.e., the 'social demand' (or 'need') for training. This means that there is a politically built in tendency to develop large scale training, and to assume that a supply will create its own demand. Herein lie risks of spreading resources too thinly, e.g., pre-vocational education justified as a remedy for school leaver unemployment - even if totally inadequate 'entry-level' skills are acquired for jobs or self-employment, or post-primary skill centres without tools, materials, or minimally competent instructors. The pressure to view training as a value to be distributed equitably or as favours bestowed upon the well-connected, can conflict with the desirability of recruiting those with some prior connection with and real aspiration for the trade concerned. But equally, measures which seem plausible to outside experts from industrialized countries can often fail to work in developing countries. Sponsorship from industry may fail to bring forth sufficient numbers or when it does, sponsorship may serve as another channel of favouritism in access to valued opportunity. Giving preference to mature youth, rather than inexperienced school leavers, may make 'tools walk away' more easily if the older entrants have picked up delinquent survival skills during protracted unemployment since leaving

school. Yet, it is important to experiment with new admissions criteria to vocational training, for all too often those who are admitted are insufficiently experienced or motivated for their trade.

1.3.2.3 Curriculum and Teachers

Competent teachers with relevant experience from industry or craft are difficult to recruit, train, and keep. Throughout developing countries, relevant industrial experience is a declared preferred background of those who enter vocational teacher training. Also throughout the same countries, it is rare that vocational teachers have such a background. The Asian Development Bank (1989: 42) survey of Developing Member Countries note that in practically all countries surveyed most teachers lack such a background. It concludes that: *"Definitely, this situation requires some surrogate measures in lieu of actual industry experience."* Because of the small scale of trade teaching, unit cost of teacher training will be very high, often with problems in filling teacher training courses. Pay and other incentives are crucial for attracting and keeping the teachers. Unlike their usually more highly paid academic colleagues, competent vocational teachers tend to have better paid alternative employment possibilities in the trade which they teach. Ironically, conditions which improve the external efficiency of training can adversely affect the internal efficiency. The easier trainees find work, the harder it is also to keep the vocational teachers from leaving to take up better paid alternative employment. As noted in analysis of case studies by the Commonwealth Secretariat (1988:25,44):

The shortage of vocational teachers is nearly universal. Vocational teachers need better in-servicing as well as more feedback from industry. Management of teaching staff is critical because it is the most expensive element.

These problems highlight the importance of morale building staff development and 'institutional development' in vocational training. Incentives will matter greatly in such efforts.

There are special problems of curriculum and course design in vocational training. Compared to general education, the trade specialties usually lack status. Further, they lack visibility because of small scale. Their support systems will therefore be more poorly developed e.g, advisers/inspectors, examination and testing expertise, materials and curriculum development. Curriculum development work is often of distinctly low quality. Characteristically, it is quite common throughout the world that many vocational trades are taught without textbooks or teaching guides. Only rarely do university researchers take any interest in vocational training (a type of education of which they have no personal experience). Very few countries (India, Indonesia, Philippines and the Republic of Korea are among them) have institutionalized research as an intended function in their central bodies for vocational training. Yet, the need for research and development, for renewal of courses and syllabuses - for skills in curriculum design is probably greater in vocational subjects than in academic schools, in order to keep up with changing labour market conditions and work requirements.

1.3.2.4 'Education with Production'

On-the-job training is training which is grafted onto production - in organizations whose main purpose is production. The reverse, grafting marketable production onto a training programme, is training with production - or Education with Production, which is the established term. With this concept goes the hope of substantial cost recovery and of bridging the pedagogy gap between 'theory and practice'. It also opens for the possibility of regularising in an orderly way incentives for trainees and teachers to earn extra income by taking part in production based in the training institution. It is a strategy which thus has appeal as a means to improve the internal efficiency of training - or simply to make training affordable. The history of Education with Production is replete with failures but also some individual successes. A key issue is whether the concept can be introduced on a large scale, in a system of institutions. Or is it only realistic when persons of exceptional energy and talents take charge?

The 'Botswana brigades' which were set up by private and local NGO initiative but backed up with much foreign aid, have been pioneers in Education with Production. Interestingly, over the years there has been a gradual separation of training from production, with separate training brigades and production brigades emerging. The experience has been that managers of training rarely have the required skills to also manage production and marketing, and that the requirements of production and training can conflict - e.g. routine production versus the need to train for a variety of tasks. When production succeeds, it tends to squeeze training out. Clear organizational separation of the two functions, even when the two are combined within the same institution, is a main lesson. In general, it is easier to graft training onto production (e.g. apprenticeship), than it is to graft production onto training. Education with Production requires business skills which principals of training institutions or vocational instructors rarely possess - tasks for which only a few have special talents. It is also bureaucratically untidy. The personal integrity of poorly paid principals and instructors is badly tempted when materials are purchased, orders are agreed, and cash is handled. Thus, even when it does succeed, Education with Production tends to be a short-term success in the history of a training institution, highly dependent on the capability and integrity of key persons. It is prone to collapse when they leave.

One would expect that the 'product' which a training institution is best equipped to market is training itself. This is an approach which is pursued in some industrialized countries which are trying to gear training institutions more to the market and recoup expenses from 'sales'. Thus, Further Education Colleges in the UK are encouraged to sell self-financing courses to local industry. In Sweden, 'labour market courses' have been set up on a similar self-financing basis. In Norway, further education colleges are experimenting with self-financing extension activities. A comparative study of these efforts is yet to be made. How can public training organisations which in the past have run with a guaranteed supply of trainees and stable budgets, retool as entrepreneurial outfits - but still with training as their product? One would expect that success will depend on demand, product quality, and management skills.

1.3.2.5 Management Complexity

Compared to general education, vocational training is a more complex pedagogic system in terms of the inputs to be procured and deployed: staffing, cost, equipment and consumables, curriculum and materials. The operation of the system is sometimes

adversely affected by a sense of low status and morale. Vocational systems are desperately short of the management skills which to cope with all these problems. The preconditions for 'success' are therefore complex. Drawing on World Bank experience, Middleton and Demsky (1988) say that the characteristics of the more successful programmes² in developing countries have been:

- Long time perspective and multiple investments
- Expanding industrial employment
- Small beginning in formal institutions and incremental expansion
- Planning that responded to labour market demand
- Early and sustained involvement of enterprises
- Evolution of policy and management capacity to match system complexity
- Increasing attention to alternatives to direct government finance
- Investment in training quality
- Flexibility of curriculum and institutional design

It is because of the management complexity, which is implied in this list of prerequisites for 'success', that vocational training systems are so difficult to organize in developing countries. It is not just a question of finance. A country's managerial capacity for developing a vocational training system will be related to its general industrial and technological development.

1.3.2.6 Lack of Coordination

System-wide planning of training is complicated by the diffusion of operating responsibility among several ministries. When institutional training is to be supplemented by apprenticeship/in-plant training in industry, private firms or public parastatals will also be involved. Commonly, a Ministry of Agriculture will run courses and extension work related to farming, fisheries, and forestry; the Ministry of Labour runs training for craftsmen and skilled industrial workers, and the Ministry of Education runs pre-vocational courses, technician training (often also commerce training), and post-secondary courses. Large parastatal services (railroads, postal service, electricity supply) will also run their own training. A multiplicity of parallel efforts are often made without mutual recognition of the resulting credentials among the training agencies concerned.

One might hypothesize that a low general level of economic development is one out of several conditions which encourage such diffusion of responsibility for training. But diffusion of responsibility for training need not simply be the accumulated result of bureaucratic empire-building and lack of coordination. It is also a function of scale as well as uniqueness of need. Large technical services can run internal training programmes to greater scale and completeness. Justification for separate training is also related to the effectiveness of existing mainline provisions. If the 'main' system fails to deliver quality

²Tellingly they use the term programme, rather than project, for development of vocational training requires sustained long-term effort, also from involved donors, rather than activity which can be wrapped up within a 'project period'.

training, large technical services have a stronger need to build up their own system³.

A minimalist response to such problems is to create liaison committees or advisory 'National Training Councils'. A stronger response is to establish bodies with jurisdiction over training activity, with varying degrees of autonomy. Examples from East Asia are The Vocational Training Council in Hong Kong and the Vocational and Industrial Training Board in Singapore (both with extensive jurisdiction), the Vocational Training Administration in Taiwan, and in Korea the Ministry of Labour, assisted by the Korean Vocational Training and Management Council - but Korean ministerial departments also deal directly with training. Diffused responsibility is more clearly exemplified in, e.g., Indonesia where the majority of technical ministries independently carry out training activities - in addition to the the Ministries of Education and Manpower which are supposed to share overall responsibility for training.

1.3.2.7 Decentralization

Problems of coordination and duplication in training are an impetus for centralization - but there is always also a strong countervailing argument: the need for training to maintain strong links with its occupational sector (or industry), in order to be relevant and adapted to changing sectoral conditions. Therefore, in training policy it can happen that centralizing shifts in the name of 'coordination' are followed by 'decentralization' in the name of 'flexibility' and sectoral responsiveness. The trend line will be not just a response to the problems of the day, e.g. are the Ministry of Labour trade schools able to train good enough mechanics for the railroad? It will also reflect ideologies and the general approach to distribution of authority in a country.⁴

It is often said that decentralization is a prerequisite for improved 'flexibility' in response to changing demands on training. But decentralization is a vague concept because it merely means a shift in the distribution of authority away from a central agency or 'top level' in an organization. As the scale of training grows from a few institutions into a 'national system', the sheer volume of decisions makes it necessary to off-load authority from the central agency onto institutional management or local boards. But more freedom from central authority is no guarantee of institutional dynamism, it can simply entrench inertia - and in some countries better shelter local corruption. One alternative to central control is stronger local *outside* control. Shortening the lines of accountability by making training institutions more directly responsible to their outside 'users' is an example. But much will then depend on how far 'users' will have the competence, interest and energy

³The same considerations are at work when donor-financed development projects become enclaves with staff and services separated from the line ministries in which they are lodged - there is then low confidence in the effectiveness of line services to cope with the special needs of projects.

⁴A 'centralist' approach will usually go with faith in manpower requirements planning, whilst 'decentralization' usually goes with faith in short-term adjustments and the market mechanism. Hence, it is not surprising that a market-economy oriented body like the World Bank will favour decentralized control. But there is no easy 'socialist - capitalist' dichotomy as to centralism. Under British free-market policy, centralist authority (The Training Authority - ex Manpower Services Commission) has been powerfully reinforced and then used to bring about more local accountability to industry in training. 'Decentralization' always begs the question of which 'local' groups will get more authority?

to involve themselves effectively in institutional boards of management. Involvement will also depend on the 'civic culture' that prevails in a country.

1.3.2.8 Institutional Development

Another variety of decentralized 'improvement' is *institutional development*. This concept points to the importance of looking at an institution as a whole, of involving all staff in genuine discussion about the goals of the organization and how these goals can be reached, and of taking the personal needs of staff seriously. The aim is nurture an 'institutional culture' which promotes task-engagement in harmony with satisfying the personal needs of those who work in the organization. It is obvious that this requires sustained and concerted efforts, and that dilemmas and conflicts cannot always be avoided. Institutional development is not a recipe but rather a perspective on what matters when organizations do improve. The problems of low morale and low internal efficiency makes institutional development an important idea for vocational training. The concept points to the importance of incentive structures and of good management in order to get such internal improvement processes started (See also Chapter 5).

Making training more accountable to users becomes important when external efficiency is poor. However, when 'user control' is introduced in tandem with 'institutional development', the pressure of outside demands may conflict with insiders' professional commitments as well as their personal needs. Great skills are needed to 'manage' - let alone master, such problems, on top of the normal complexities of merely 'administering' a training system.

1.4 Modes of Training

There is much dissatisfaction with vocational training. Dissatisfaction with one's own system breeds a tendency to look around, especially to countries with more dynamic economies, for better models. There is therefore interest in the pros and cons of different modes or systems of training, abstracted from their national context. But comparisons are not straight forward, for systems have multiple characteristics. Some key dimensions may be these:

The locus of training. Training in comprehensive secondary schools, in a vocational secondary school, in a training centre or trade school, in a training centre in industry, or on-the-job without any organized separation from work?

Initial training before or during work, or re-training for new jobs after work experience?

Does it give entry-level skills for specified occupations, or is it merely preparatory (pre-vocational) for such training?

Is vocational training the only goal or does it also prepare for entry to further general education or to technician education related to the practical trades?

Does training lead to recognized labour market credentials, e.g. trades test, journeyman certificate?

It would seem that a variety of combinations are possible on these dimensions. A simple typology (based on a cluster of traits) will then be a distortion. The typology below uses locus of training as the main dimension around which other traits are then grouped. It covers a spectrum between two poles: training that is fully integrated with secondary school; and on the other hand training that is fully encapsulated within regular employment. Thus, it is roughly categorization along a formalization dimension.

1.4.1 Training Within Secondary Schools

Depending on the balance between general education and vocational subjects in the curriculum, this can be of 'pre-vocational character' (e.g. Industrial Arts) or be 'training' aiming at entry-level skills (e.g., vocational tracks in Swedish upper secondary schools). But pre-vocational or practical 'life skills' subjects (as in Sri Lanka) on the one hand, and vocational training on the other, gain support from the same political need to address youth unemployment and make school-education seem more economically 'useful'. Therefore, it is widely hoped and expected that pre-vocational education will give 'employable practical skills'. The frequent failure of pre-vocational education to serve such goals should not be taken as an indictment of the general education value of practical subjects. But as general education, they have to be firmly justified and developed with a view to either intrinsic value or usefulness across a wide range of life situations - not only in particular occupations. There are certainly important theoretical perspectives on general education (Pragmatism, Poly-technical Education) which support such practical subjects. Their cost and complexity should be assessed with such aims in mind (Lauglo and Lillis, 1988, Ch 1.) - not in relation to unrealistic objectives. One should also ask whether goals of practicality could not be more fruitfully stressed in the conventional book subjects, rather than developing separate subjects.

School-based vocational training will occur prior to employment and will typically include a substantial general education component so as to keep open the possibility of access to further academic study or higher education. Any in-plant elements will be supplementary to school-based provisions. It usually does not lead to externally organized 'trades tests' - rather the examination system tends to be internal to the school system. One might identify two variants: training provided as special courses or streams in mainstream 'comprehensive' mainstream schools, on line with other subjects, and specialized technical or vocational secondary schools.

In economies undergoing structural and technological change, it is important that training should be broad enough to prepare for changing technology and change of occupation. This was the mainstream 'OECD-recommendation' for vocational training in the late 1960's and it remains influential. A broad foundation also has appeal on egalitarian grounds because it reduces the distance between vocational training and general education. This view holds up vocational *education* as the ideal, rather than the more narrowly defined 'training'. As such, it favours the context of diversified secondary schools. It is a view of training that certainly is distinctive of Nordic social democratic policies.

In response to mounting criticism of diversified secondary schools in developing countries, Hultin (1988) has recently restated the case for this mode. But he argues that it is especially suitable for industrially advanced economies, and he derives this conclusion from a unilinear evolutionist perspective. There are stages of economic development that roughly match training objectives, and the latter evolve from well defined specialized skills, to pre-vocational training and attitude change, to meeting the requirements of a society with changing information and technology. He claims that diversified secondary schools supplemented by specialized pre-service and in-service training centres are the best provision for this third evolutionary stage. However, industrially advanced countries in fact show a wide diversity of modes (e.g. Japan: company based, Sweden: school based, Germany: apprenticeship), though some convergence may occur.

The World Bank is a strong influence on training policy in many developing countries, both because of its conditionalities for finance and its publicized analysis of project experience. In the early 1970's, inclusion of vocational or pre-vocational subjects was a frequent conditionality of World Bank support to secondary education (Wright, 1988). The reverse conditionality may now be applied - 'diversified' secondary education and 'school-based training' are frowned upon. The Bank (1988:64) Policy Study on Education in Sub-Saharan Africa notes that though it be unwise to generalize across countries:

Training provided in schools is generally less useful (that is, the market demand for it is less strong) than training provided on the job or in specialized training centres.

One would anticipate similar conclusions in Bank's Sector Paper on Vocational Training which has not yet (as of June, 1990) been released. Analysis of World Bank spending patterns shows decreasing spending on vocational training in secondary schools since the mid-1970s (Middleton, 1988). The problems with this mode seem to be especially severe in low-income countries; it has done better in middle-income countries (Middleton and Demsky, 1988). But the same is true for other modes of training.

One of the problems with secondary-school based training is that the syllabuses tend to become semi-permanent and hence obsolescence prone - especially where a course has the dual function of preparing some students for higher education and others for the labour market (Dougherty, 1988: 32). Responding to labour market change through curriculum revision is typically a slow and cumbersome process in secondary schools run by a Ministry of Education. Another problem is lack of attraction to students who have no particular motivation or aptitude for the trade concerned, but who enter the 'vocational courses' in order to keep open the route to further academic training, or simply because they are unable to enter secondary school. They then settle for vocational training as the one opportunity offered by the education system (e.g., junior high schools for home economics and junior technical schools in Indonesia, which are now being phased out). Interest in the trade subjects will then suffer. If further opportunities in the trade are available after school, the students may not be interested.

Training in diversified secondary schools sometimes overcomes the status problem, e.g. Industrial Education subjects in Kenyan academic secondary schools (Lauglo, 1985). But there are usually other problems of high unit costs, poor linkage with employers, low external effectiveness, and inadequate support systems for materials and maintenance. These problems also exist in other modes of training. But they are harder to solve in comprehensive schools because resources will then usually be spread more thinly (in more

schools) than in specialized training institutions. Moreover, because training in secondary schools is under an administrative structure (the Ministry of Education) that is primarily focused on general education, training may not receive the special attention and resources which these problems require. Training in a school that is mainly devoted to general education is also likely to have lower visibility to employers, than training in specialized institutions.

Specialized technical/vocational secondary schools usually aim at greater depth of skill. Like training in comprehensive schools, specialized schools aim to give a relatively broad training without sharp distinction from general education (and with access to at least 'relevant' subjects of further theoretical study). But institutional separateness gives the advantage of concentrating training resources in a smaller number of schools, and better visibility among employers. These more specialized secondary schools often have a different history, having evolved through 'academic drift' from trade schools, e.g. technical bias secondary schools in Tanzania, the technical secondary schools (up to 1986) of Kenya, and the technical high schools of Guyana (Jennings, 1987).

A common criticism of training in secondary school is that it connects poorly with related work. The rate of movement into relevant trades or further training was very low in Kenyan technical secondary school system (Närman, 1988a; Lauglo, 1989). Noah and Middleton (1988: 49) reports that despite the close links which Chinese vocational secondary schools have with local industry, their graduates often work outside the specialty for which they have been trained. In China, this problem appears to be greater in vocational secondary schools than in other modes of training.

Nonetheless, the impression is that the specialized technical secondary schools, compared to training in comprehensive schools, usually perform better in the labour market. Hultin (1987:53), drawing on World Bank experience, claims that employment rates are higher in vocational secondary schools than in diversified (comprehensive) schools. A recent Israeli study by Ziderman (1989) shows vocational schools to be 'more cost-effective than general academic education'. The Israeli data show lower recurrent unit cost for vocational secondary schools than for academic schools - which is very contrary to findings from other countries (See, e.g., Cumming, 1988). But Ziderman's findings on cost-effectiveness would not be easily reversed even if unit cost are adjusted upwards. Norwegian research by Lindbekk (1989) similarly shows superior labour-market value of school-based vocational training over purely academic secondary education (the cost issue was not addressed).

There are diverse impressions, accross different economies and labour markets. Secondary-school based training probably performs better in economically more advanced countries - but so do no doubt others forms of training. Low rates of absorption after training into 'related work' is a problem for school based training, but it can also be a problem in apprenticeship. Main arguments against secondary-school based training are high cost, dissipation of resources that will be spread thinly, and inadequate managerial focus on the special needs of training because it tends to disappear as a minor part of a system that is mainly concerned with education, both nationally and locally. These weaknesses are likely to be more pronounced in diversified or comprehensive schools than in specialized schools.

1.4.2 Trade Schools and Training Centres

This mode does not prepare for further academic education or further higher studies in related technology. The minimum entrance requirement is usually no higher than 'basic education'. As a type, it is heterogeneous in terms of skill levels, integration with a national system and links with employers. The duration of courses varies. The courses are usually pre-employment but trainees are sometimes sponsored by an employer. If a course is sufficiently substantial it may prepare for an externally validated trades test or proficiency certificate.

Employers sometimes prefer the short, more skill-specific training of training centres to usually longer and broader 'secondary school' courses which extend over several years. There is an international stereotype of hardnosed employers who, if they recruit from school at all, prefer to take on a more malleable trainee from a short basic course than someone 'who has been too long in school' and acquired unrealistic ambitions or 'grown too soft'. Especially small-scale entrepreneurs will harbour a populist scepticism about school as preparation for the 'real life of work'. In the Republic of Korea, employers prefer employees to come in with one-year courses from vocational training centres rather than from 3-year technical schools (Charmes & Salome, 1987:29). A prestige hotel in Oslo only accepts as apprentice cooks those applicants who have no more than a one-year basic vocational course. Longer school-based training can be a liability.

The better resourced, modern-sector orientated courses in training centres may include in-plant training. Such mixed systems involve various combinations of institutional and on-the-job training. Mixed systems are complex and difficult to develop - seeking to combine advantages of training in institutions and on the job. When in-plant training becomes more than a short 'attachment', and the trainee is given real work responsibility, it shades into Apprenticeship.

'Skills centre' is a term often used about centres which are more local in orientation in that they were established by local or NGO initiative (and are not part of any larger 'system'). They typically teach crafts (rather than industry skills), with less sophisticated technology and frequently with the aim of preparing for small scale entrepreneurship in the informal local economy. Because of these traits, they are often referred to as 'non-formal' though they are formally organised for the specific purpose of training.

A distinctive contribution of such skill centres is that they can mobilize local resources for training and disperse training opportunity geographically. The aim of training for the local non-wage economy is usually unrealistic. King (1980) notes that locally adapted training will be used as an alternative channel through which to enter the modern wage-economy in the urban sector. Tracer research on the Botswana brigades strongly confirms this impression (Närman, Franzén & Emanuelsson, 1988). King observes that trainees and parents press for modern-sector orientation of course content and for take-over by the national system.

The success of such 'non-formal' courses is very uneven. When successful, they are difficult to replicate because by their very nature they are not part of any nationally organised system and depend - like 'Education with Production' - on the quality of fairly autonomous local leadership. The very autonomy which can give such skills centres valuable 'flexibility' also makes it more difficult to assist them, as a system. The conventional wisdom is that they are more effectively aided through their associated

voluntary organisations, when these exist, than through Ministerial channels. Not surprisingly, Hultin (1987:52) sums up his impressions that there are "*more execution problems with non-formal institutions*". One can draw the same conclusion about apprenticeship training which is 'non-formal' in a dual sense of a) not being differentiated from work organisations, and b) not being a direct extension of national training authority but depending on a multitude of employers.

1.4.3 Apprenticeship training

In an apprenticeship agreement, an employer undertakes to train the apprentice in return for his untrained labour. Sometimes, 'traditional' and 'modern' apprenticeships exist side by side, relating to traditional crafts and modern occupations respectively. Under modern apprenticeship, the employer usually pays the apprentice an allowance. Under traditional apprenticeship it can be that the apprentice must pay. A further distinction is that modern apprenticeship is regulated by law as to scope, duration, and remuneration. It is this modern variant which now will be discussed, since it is on modern apprenticeship that training policy has a bearing. If policies address 'traditional' apprenticeship, the latter are modernized by the very process of public regulation. Modern apprenticeship is usually supplemented by courses in 'trade theory' or general subjects, before and/or during apprenticeship.

Compared to school-based training, apprenticeship is more specialized. It is therefore often accused of excessive narrowness. But 'narrowness' in the eyes of critics becomes valued 'depth' to its advocates. It could be that such 'depth' has transfer value outside the intended specialties, not only among kindred occupations whose skill requirements overlap. Much of such claimed transferability has to do with values, attitudes, and work habits. De Moura Castro (1988) argues that socialization to the culture of workmanship - the 'lore of craft' and to the occupational community - matters greatly. This, he says, requires separation from general education rather than integration with it, and close relation to the context in which skills eventually are to be applied. Apprenticeship fits this requirement, and trade schools would come closer to it than training based in secondary schools. He writes:

Most 'poly'-technical schools tend to be a failure as vocational preparation, the good technical schools are those that have a relatively narrow range, and there are many successful 'mono'-technical schools...they usually cater to a well-defined market slice and keep very intimate relationships with the firms to whom they produce skilled labour and technicians. In the long run, close contacts with the labour market are the safest way to nurture the proper values (p204).

In this perspective, values and attitudes are of key importance for effective training: the value of completing a job, self discipline, admiration for painstaking perfection and contempt for sloppy work. Keeping a workshop tidy and clean is then more than a practical necessity to get work done. It is like other rituals, acting out for public display central norms in e.g., the occupational community of machinists: "*The liturgy of cleaning is a means to transmit the values of the occupation*". An important part De Moura Castro's argument is that these important values are only taught through skill acquisition in close association with the 'real world' of the occupation.

This training ideology is characteristic of Germany and countries influenced by the German training model (e.g., Switzerland, Austria, Denmark). The German tradition dates to the medieval guilds but it was given a modern adaptation in the influential work of Kerschensteiner. It is not hard to trace this ideology in recent statements about German policy (See, e.g., Jochimsen, 1978).

The 'apprenticeship ideology' raises many questions which only now are beginning to attract research interest: How important are attitudes and values as compared to skills? (or 'tacit knowledge' as compared to that which is made explicit in syllabuses?) Are the important values, attitudes, and work habits in fact best transmitted in separately institutionalized and specialized training? A recent OECD report (1989, Ch. 4) recognizes the importance of institutional separateness in order to preserve a 'plurality of values' lest vocational training be overwhelmed by the norms of that part of education which lies along 'the path to university'.

An argument in favour of apprenticeship is that it is inexpensive. It is clearly cost-saving to government, because employers, even if induced by tax credits or other subsidies, are the main training providers. Total costs to the national economy may also be reduced because the same resources (instructors, equipment, materials, and time) are combined for training and production. Economists have for some time been pointing out this cost advantage (Zymelman, 1976; Metcalf, 1985); and recent empirical studies have confirmed this conclusion. Ziderman's (1988) research in Israel, in accordance with earlier findings in that country, shows apprenticeship to be much cheaper than vocational school but equally effective in terms of the trainee's later income. Corvalan (1981) compared cost-benefits of technical school training with apprenticeship in Chile, and found the latter to be more efficient.

But later, Corvalan (1987) noted a very common constraint: an expansion of the apprenticeship programme was impossible in Chile due to "*lack of interest among the employers*". Apprenticeship is not employment, but it is informally a probational job placement which enables an employer to keep a pool of future applicants at hand and to look potential employees over. Employers therefore lose interest in apprentices when they shed staff. So the scale of apprenticeship training suffers during recessions. The scale of training will take on an extreme 'demand driven' character.

Another limitation is lack of open competition for the places available. Especially small-scale employers tend to give priority to apprentices who are recommended to them through personal networks, and are loath to sign contracts with persons unknown to them. Mabawonku (1979) writes about Nigeria that recruitment of apprentices in small-scale industries is often undertaken through informal discussions between the proprietor and their neighbours, customers or relatives. There are similar constraints in industrially advanced countries. Apprenticeship can become a 'closed shop' for those with inside connections in the trades concerned. A French report (Assemblée Permanente des Chambres de Metiers, 1981) notes that few employers take on apprentices, despite pressures from various groups; and further that the sons of artisans tend to have privileged access to the scarce places. The French study interestingly reveals certain common complaints which master craftsmen make about their apprentices: that they are *not* hardworking, motivated or obedient. Clearly, one must beware of romanticizing the effectiveness of socialization to 'higher values' in 'real work' situations.

A range of other complaints are common. Noah and Middleton (1988) point to these weaknesses: too early and often too narrow specialization, exploitation of cheap labour, that it is social-class based and class perpetuating, impoverished curricula in terms of theory underlying practice, and insufficient number of training places during periods of economic downturn. A UNESCO (1983) report states: *"Apprenticeship programmes, often cited as a strength area, still suffer in many countries from lack of appropriate work-places and qualified supervision."* One might think that industrially advanced countries have overcome such problems. But these countries have also problems of uncompleted apprenticeships - though reporting seems to be lacking on the exact completion rates. An OECD report (1979:38-48) gives some indications from the mid-1970s: In the United States it was then estimated that half the entrants failed to complete their apprenticeship. Both in the US and Canada irregularity of employment in the construction industry drives down the overall completion rate - there are frequent lay-off periods when work is slack in these industries. In Britain a high 'wastage rate' was also reported for engineering apprenticeships in the 1970's. But there are differences among countries, in Switzerland the completion rate is quite high.

The match between trade and later work can be loose (See Chapter 8, below). The overwhelming majority of German skilled workers have completed an apprenticeship, but *"not necessarily in the occupation in which they were employed"*. In general, in the heavily apprenticeship-based German training system, there have been great imbalances between the occupational distribution of apprenticeships, and that of the labour force, with many more apprenticeships than job opportunities in the craft and artisan trades. It is probably in these trades that apprentices most naturally fit into the flow of work as 'a helping hand with a chance to learn'. Compared to skilled work in industry, a master in the crafts and artisan trades will probably perform more varied tasks and make more complete products.

Apprenticeship is sometimes held up as a training model for developing countries (e.g., Brooke, Oxenham & Little, 1978 on Mexico) because the performance of school-based training has been disappointing. But the organizational complexity of apprenticeship is easily overlooked. It is true that apprenticeship may be described as 'non-formal' because training occurs without much distinction from the context of work (e.g. Zidermann, 1988), but it requires a great deal of *deliberate organization*. Companies - which are physically dispersed and not for their main activity in any way subordinated to a national training authority - need to be induced to take on apprentices and provide training of some defined content which will require some separate organization within the firm. Supplementary courses need to be mounted (evening classes, day release, or 'sandwich') in order to cater for dispersed apprentices coming in with varied work-based experience; systems are needed to monitor training in companies, follow up apprentices, and to organize final assessment of trainees. Apprenticeship systems of high reputation, such as the German one, in fact rely *"on very careful, nationwide regulation of the terms of apprenticeship, the content of vocational training and the standards for assessment of trainees' performance"* (Noah and Middleton, 1988). Thus, to build a national system of apprenticeship training is a greater organizational achievement than school-based training. This is what the National Vocational Training Division in Tanzania now is up against.

1.4.4 Training employees

This will be designed to serve the a firm's own needs for staff development. In large firms it can be highly organized with a special training centre; and it can structurally resemble 'outside' centres. Outside systems may also serve as a framework into which the training of employees will fit. Company training may be more specific than a trade - e.g., to operate certain machines. If the company has low confidence in outside training, much attention can be given to basic vocational skills. But usually, company training will simply carry skills further, to meet its own special needs or build competence for promotion. Job rotation may be used to give management trainees varied experience of different operations within the company. In addition to skills, the aim can also be to build morale and identification with the company. This aim is strongly pursued in the larger Japanese companies (Inoue, 1985) and is there combined with systematic use of job rotation, not only for management trainees. Asian newly industrialized countries have considerable industry-based training activity too - with more government involvement in Singapore and Korea than in Taiwan and Hong Kong.

A clear advantage of industry-based training is relevance to work, and cost savings to government. Employers have a direct interest to ensure that training meets their needs. They also need efficient training since they bear the cost. But research on company-based training is sparse, and one should beware of exaggerating its importance, just because 'external' training systems are weak. After all, training is only incidental to the main business of companies.

Korea has used legislation in order to cause employers to provide a proportion of their workers with in-service training. The result has been expanded scale of training, but *"its quality and usefulness are less than optimal"* (Charmes & Salome, 1987:9). The 1974 Law led to significant growth in training, well above what had been achieved earlier by incentives (subsidies to training). But after 1979, the numbers greatly declined, until they during 1983-85 seem to have stabilized at a level not greatly above what had been achieved under the subsidy scheme (Charmes & Salome, 1987). Since then, the scale of enterprise-based training is said to have remained at a disappointingly low level. Especially the smallest firms seem to have been disenchanted with the scheme. Thus even in a country which has rapidly industrialized, with many highly productive industries, the risk is that compliance will be superficial and uneven if industry is required by legislation to take responsibility for training.

One would expect that interest in training will depend on certain characteristics of industry, and on the business cycle. Expansion plans and adoption of new technology generate interest in training. Conversely, stable and 'simple' production technology, cheap labour and high staffing ratios, and low utilization of production capacity provide little incentive for training.

Some countries have imposed a training levy as a payroll tax, without any exemptions or payments to firms which train (as in Tanzania). It is then no incentive for training. To work as an incentive, a training levy must give exemptions or direct contributions to firms that train. But introducing a new tax with exemption/contributions from it as a lure, may be a dubious incentive. Fiscal incentives for training never seem to offer any reduction of existing taxes. Fiscal incentives for training work poorly during recessions. Thus, in Kenya, large unspent 'training funds' have accumulated in the 1980s. During 1972-74 Taiwan also experimented with a training levy on companies employing more than 40

workers (1.5% of the payroll) which was used to reimburse up to 80% of training activities by firms. There too, the system was rendered ineffective by economic recession at the time. In 1984, under more favourable economic conditions, a similar measure was reintroduced. As of 1987 the enforcement decree of the law was awaiting promulgation (Charmes and Salome, 1987). However, even in dynamic economies unspent training funds tend to accumulate. This occurred in Singapore during 1979-84. Dynamism too can set ceilings. Charmes and Salome observe:

..when it goes beyond a certain percentage of workers and work time, training disrupts production. Therefore dynamic firms understandably do not want to commit themselves to further training schemes, even if their costs are fully covered (p.46).

Further, fiscal and legislative measures have rigidities which can make them irrelevant to a company's own needs:

The most effective training and the training best suited to the firm requirements are the most spontaneous ones. They are introduced without resorting to the institutional system, and sometimes without its knowledge. Also, the training which firms are obliged to implement by law can be artificial and increase production costs to such a point that, in certain industries, firms prefer to take care of their in-service training obligation by financing basic training training programmes or even recurrent training programmes which have no direct bearing on their activities (p61).

Industry in low income countries often underutilizes production capacity, and the technology used may have remained stable for decades. In parastatal companies the pressure for efficiency is often low, and in-house training provisions show low efficiency concerns. There are also trade-offs between training and scale of staffing. Cheap labour favours high staffing levels rather than training. Employers may complain about low productivity levels, but can still respond to poor performance by other means than training (and higher pay): simplification of tasks, overstaffing (Kelly, 1986; quoted by Dougherty, 1987) and tight supervision.

Charmes & Salome (1987) in their survey of industry-based training in five East Asian countries conclude that there are three interrelated traits which strongly influence the provision of 'in-service' training by firms: ownership, size, and technology:

Government and foreign-owned firms are more likely to provide organized in-service training programmes, mainly because they are generally larger and more capital-intensive. Other things being equal, technologically-intensive firms are more likely to require workers to undergo in-service training programmes, both in and off the workplace, than labour-intensive firms (p 10).

Training organized by companies can be a rider to contracts which governments in developing countries sign with international corporations. Often, foreign-owned companies will tend to have relations with a government which make it natural to negotiate at high level about training provisions for local staff. Training is then part of what the company has to offer, in return for a contract. But it can be in the company's own self-interest to

train in excess of short term needs. Training local staff is a means by which the company develops long term marketing strength.

Employers can be wary of paying for training that will give staff the wings with which to flee their company - or to set up in competition with themselves (in the case of small scale operators). In general, in-company training thrives best when owners/managers believe that a better trained workforce will make productive use of training for the company's benefit. On the other hand, sharp cultural divides (e.g. ethnic divides) can give owners/managers low confidence in their workers and thus discourage industry-based training. In some countries, government has promoted institutional training (schools, centres) partly on the grounds that owners of industry restrict opportunities for advancement and on-the-job training to their own ethnic group, leaving only menial jobs to others.

Leaving training to companies can have social and political consequences which some groups oppose. The more that training is embedded in companies themselves (this also applies to apprenticeship), the more it can become a tool for taming and controlling the workforce rather than for simply making them more productive - though from an employer's point of view 'taming' can be an important prerequisite for productivity. This is one reason why labour unions and associated political parties have sometimes seen school-based training as an 'escape' from training conditions which have been too much on the employers' own terms and insufficiently attuned to the needs that workers have. A shortcoming of employment-based training is that opportunity is restricted to those who already are employed. Therefore, one cannot rely on such training in order to promote better equality of opportunity among groups in the wider society. Training will also be unequally distributed *within* industry.

Singapore runs a Skills Development Fund levy on employers and makes available grants from this fund to approved employers and training organisations. Large numbers of workers and firms have taken part in this training activity, but the scheme has tended to operate in favour of highly-educated workers and large firms - rather than the target groups which were set for the Fund originally (Charmes & Salome, 1987). Thus, experience fits the general observation that training capacity and willingness among firms is unevenly distributed, favouring larger firms; and further, that the employees who tend to make most use of further education/training opportunities are those who already have a high level of education/training. Rather than compensating for inequality in the formal education system, 'non-formal' industry-based training provisions may exacerbate inequality, adding further training to those with the best skills in the most advanced industries.

In developing countries, industry-based training is usually quite rudimentary. It is therefore dubious logic to argue that weaknesses in school-based training means it is better to leave it to industry. It is precisely because industrial development is lacking and weak to begin with, that industry's capacity and willingness to train also will be restricted. Some training programmes in countries with a poor industrial base have been set up to be based both in a training centre and in industry. Tanzania is an example. As will be argued in this Evaluation, it is the training-centre part which, in spite of numerous weaknesses, is best implemented. 'In-plant training' remains largely a scheme on paper, causing the training institutions to take on a more complete responsibility for training than what was planned: extending the length of courses, taking on their own apprentices and 'auxiliaries'.

It is often claimed that employers have more interested in on-the-job training which teaches skills that are specific to their firm, than skills which are portable and which increase the

prospects of employees getting jobs elsewhere. School-based training stands a better chance of leading to 'related work' when it is fairly broad and not limited to a small specialty, let alone a single employer. As will be argued in Chapter 8, Tanzanian experience fits this hypothesis: when taught in a school to trainees without extensive job experience, small 'high skill' specialty trades run high risks of connecting poorly with later work. Close industrial involvement⁵ is therefore an important prerequisite for external effectiveness in the highly specialized engineering trades.

It is often observed that institutionalized training fails to strike a balance between supply and demand of manpower. Industry-based training is looked to as a cheaper mode that adapts faster to changing requirements. But the potential of industry-based training varies within as well as among countries. It is therefore important to approach the choice of training mode with careful regard to its particular context.

1.5 Trends and Conclusions

The drive to 'diversify' curricula in developing countries, and also the recent injection of 'technology' into mainstream secondary schools in industrialized countries (e.g., Britain) are based on the assumption that economic dynamism requires an education system that stresses technology and vocational subjects in its broader enrolment streams. It takes but a quick comparative look to question that assumption. For example, pre-vocational 'diversification' has played a very minor part in Japanese schools (McCormick, 1988). Similarly, in the Republic of Korea - a very successful newly industrialized country, one is told that (Charmes & Salome, 1987: 29):

Schooling ..is geared towards university degrees and training which do not reflect the economy's manpower needs. The curriculum up through the secondary level stresses the liberal arts and social sciences and aims at preparing students for the national university entrance examination...the examination which emphasizes knowledge of the humanities, students are encouraged to memorize. Those that do not pass join the labour force..

Apparently, institutionalized vocational training in Korea has not been so much a precondition for growth as a consequence of it. It grew dramatically during 1970-85 in order to meet the growing demand for skilled labour (after industrial take-off) and to "solve problems connected with how the education system operates". Institutionalized vocational training still remained but a supplement to the main education system from which industrial workers have been recruited. Of course, vocational skills and motivation for hard work are indispensably important for economic growth. But it is doubtful that 'vocationalizing' the content of mainstream schools is an efficient means to achieve that important educational goal (See various articles in Lauglo & Lillis, 1988). Pre-vocational subjects are no solution for youth unemployment.

To search for an internationally 'one best mode' of training is similarly likely to be futile. This conclusion echoes recent reviews (Dougherty, 1987; McMahon 1988). The training

⁵'Involvement' can be that the firm becomes the actual base for teaching such skills, or, that the mounting of school-based courses in such trades occurs in close liaison with companies which agree to sponsor employees and/or take on apprentices.

modes are quite different in countries thought to be especially industrially advanced, e.g. Japan, Germany, the United States and Sweden. At present, however, there are interesting points of convergence. Attempts are made to involve employers more in institutional training⁶. One example is to make training more directly accountable to local employers (e.g. the United Kingdom), and encouraging training institutions to sign training contracts with local industry. In the most clearly 'school-based' systems (e.g., Sweden) the trend since the late 1970s has been to strengthen placement in industry, and to recognize more clearly that institutional training is not entirely complete; it needs to be supplemented by on-the-job experience and training before a craftsman or skilled worker is 'fully trained'. On the other hand, countries with strong apprenticeship traditions (Germany, Switzerland, Denmark) have sought to broaden the specialties by reducing the number of trades and developing an initial 'school-like' foundation period. Countries which have mainly depended on industry-based training in-employment (Japan, Korea) have sought to strengthen such training by legislation, incentives, or supplementary institutional training.

An experimental trend, especially in some school-based systems, is skill modules in the form of tightly structured materials 'packages'. In some systems (e.g. the Swedish one), this is seen as the means by which courses can become flexible and 'customer centred'. It is hoped that trainees and employers can 'buy into' those parts which they need, and that the highly structured nature of the prepared materials would make it easy to mount courses on demand. One example of this approach is ILO's large MES (Modules of Employable Skills) project, whereby very small 'training packages' in leaflet form are developed with the intention of serving as self-instructional materials for craftsmen in developing countries. Their actual usage cannot be reviewed here; but it must be very difficult to reach the target group in such a way that such materials find their intended usage. There is however such a severe shortage of teaching materials in trade skills in many countries, that materials intended as self-contained modules or even for self-instructional use, may find use in regular training programmes - if they are disseminated.

Thus, there is some converging adaptation: school-based training is reaching out to form better links with industry; apprenticeship training is becoming less narrowly based with a greater role for institutional training; public authorities are intervening more in systems which have relied on industry's own internal training. In policy rhetoric at least, there is increasing recognition that any initial training, regardless of mode, needs to be supplemented by training on-the-job or between jobs. In a similar vein, there is more 'customer-orientation' and concern with flexible response to changing demands. There is less stable, and less tightly defined separation in contents and clientele among different school and training institutions (OECD, 1989). These trends in industrially advanced countries require sophistication in planning and management at all levels, especially by institutional managers who now are supposed to seek out 'user feedback' and liaise much more closely with other institutions. To meet such demands the managers may well need more freedom from centralist directives, but equally they need more competence in order to move beyond the static concept of 'administration' to the more dynamic 'planning and management'. To the extent that training institutions themselves are to become more like enterprises, they will need to develop strong management and pay more attention to 'institutional development' strategies.

⁶'Institutional' training refers to various modes (school based, centre based) which organize ('institutionalize') training in separation from the workplace.

There is much variation in policy among developing countries. China has been de-emphasizing apprenticeship and has promoted school-based training, having sought to make 50% of secondary enrolments vocational or technical by 1990 - though it has also sought to retain strong connections between these schools and industry. In African countries there is much disillusionment both with the cost and efficiency of technical secondary schools. Kenya is turning technical secondary schools into more specialized technical training schools again, reversing the academic drift which made these schools 'secondary' to begin with. Tanzanian technical-bias secondary schools are changing in the same direction. Many developing countries are keen to shift more responsibility for training on to employers and communities - also because of the high unit cost of training. But there are problems with 'employer involvement'. Employers and communities have limited training capacity, sometimes also limited interest.

Even without the additional demand that they be run 'like a business', vocational training systems are complex and place great demands on management at all levels. There are complex logistics requirements: facilities, equipment, consumables, materials and maintenance; and there are special problems of high unit cost, low status, staff scarcity and unsuitable trainees. Specialized training institutions - which are detached both from general education and from the work place - can probably be developed and managed more easily than either systems which are integrated with general education or grafted onto production. It is likely that that integration with general education is the most expensive of these variants, and that integration with production is the cheapest.

It is probably an administrative advantage that vocational training be separate from school education, so that attention can be focused on the special and changing needs of training, and so that strong links can be built with the related occupational sectors. But 'separateness' is no guarantee of managerial initiative (any more than decentralization is) - nor will separateness in itself bring forth extra resources. Basing training in other Ministries than Education (e.g., Labour) is one way of achieving needed separateness. But it could presumably also be achieved by a strong training division within a Ministry of Education. *What matters is that training, from top to bottom in a Ministry, be recognized to require special staffing and separate resources - probably also a separate institutional 'culture' to keep it from always being in the shadow of academic education.*

The development of vocational training is constrained by high recurrent cost and capital cost. Donor financed projects all too often leave developing countries with recurrent costs which they can ill afford; and so institutions run down until support from another donor is enlisted in order to rehabilitate and 'improve quality'. But the other management complexities make *any mode* of training harder to implement in developing countries than in the industrialized countries. The employment-based modes (apprenticeship, training in-employment) are more affordable to government but often meet with little interest and training capacity from industry, and they are very difficult to develop. Training based in specialized schools or centres, though easier to develop as 'projects', tend to be prohibitively expensive and to become run-down after donors disengage.

Donors add to management problems by uncritical promotion of home country models, leaving a patchwork behind of different training organizations. In many developing countries which went through the transition to Independence from colonial rule, vocational training has been among the last areas in which a Ministry remained strongly dependent on external professional advice. Training experts from industrialized countries all too rarely have had the needed skill and imagination in adapting curricula and equipment levels

to local conditions, and counterpart training has often lacked real system and effort. Donors should cooperate more.

Governments in rich countries may afford to take the generous view that there are transferable benefits, even if high proportions of trainees end up in work unrelated to their training. This is much harder to tolerate for governments and donor agencies alike in developing countries. Under such conditions, careful scrutiny of the internal and external efficiency of existing training provisions is needed, before new models are tried. Any system requires routines that regularize feed-back not only about staffing, enrolment and exam results, but also about cost, the experience of trainees in the labour market, and about employers' preferences and reactions. The external effectiveness of any mode of training depends not only on quality but also on labour market conditions. Work opportunities depend on effective demand, and hiring practices do not always favour those who have formal qualifications from vocational training. There is therefore good reason to monitor effective demand very closely, rather than simply to plan in order to meet targets derived from 'needs' or forecasted 'requirements'.

CHAPTER 2

TANZANIAN POLICIES AND THE TRAINING SYSTEM

2.1 History of the System¹

2.1.1 Trade Schools and Their Decline

At Independence in 1961 the Government inherited one trade school at Ifunda (from 1951) and one in Moshi (1957). The Ministry of Education was at the time responsible for these schools. They ran a three year training programme, usually with entry from Standard 8 of the primary school, and had a joint capacity of 1200 trainees by 1958. The first intakes were mainly people of some experience after primary school: "*ex-soldiers and ex-standard 8 youths*". The curriculum was broad in the first year (e.g., building trades would include carpentry, masonry, painting, plumbing and electrical work) with subsequent specialization. A period of 2 years in indentured apprenticeship scheme was designed to follow the school-based training (or to run parallel with school-based training?). There were reportedly high completion rates (80%) of apprenticeships, unlike present conditions (See Chapter 8).

Before they closed as trade schools in 1967, Ifunda and Moshi had a joint cumulative 'output' of 2,634, with the highest annual output during 1962-65, of 320-360 per annum. The largest specialties were then, as now, the basic construction trades: carpentry/joinery, masonry/bricklaying, plumbing/bricklaying, and electrical installation; and a somewhat smaller group of basic engineering trades: fitter/turning, welding, and motor vehicle repair. A trades testing system (with different grades) had been established in the Public Works Department. There were also mission trade schools. The government provisions are now different, but some community based schools with mission origins have continued this old system of 3 years of initial training (e.g., at Leguruki).

Towards Independence, student aspirations were raised by the prospect of more opportunity generally; and a collapse of morale followed at the government trade schools. Students apparently went on strike because they "*objected to cleaning their tools and tidying the training areas*" as Athuman (1989) observes. An related problem was that "*trade school leavers tended to identify themselves with the educated elite and expected to get supervisory posts*", whilst nearly all skilled labour was entirely produced on the job without any organized training, e.g., the construction industry relying heavily on "*self-taught, illiterate craftsmen*". Then as now, there were worries about external efficiency. Athuman notes that "*youth who studied painting and decorating for three years found employment in car spraying*". In the present system too, it is difficult to place trainees in this trade, in apprenticeship (See Chapter 8). This, is of course, a perennial concern about training, and not unique to the trade school type, but the apparent mismatch seemed more glaringly undesirable after a three-year course.

¹This section is based on Ahmed Athumani's report Recent History of Vocational Training in Tanzania, which is written for this Evaluation. It also has been informed by Sifuna (1976). However, the interpretations are not necessarily derived from these sources.

A survey was undertaken in 1962 (the Tobias report) in order to identify manpower resources with respect to skilled labour and foremen, and to forecast requirements. The report recommended that a standing committee on Vocational Training Development be established, to review curriculum standards and in-plant training programmes, that requirements and resources for craft training be assessed, and that trade tests be offered to those workers who joined employment for the first time or to those already employed. But whilst the committee recommended these measures to strengthen craft and trade training - measures which on the whole were accepted, the two government trade schools were not to be part of this effort. Instead they were both converted into technical secondary schools with courses leading to the General Certificate of Education. The Ministry of Education retained responsibility for the new schools, and favoured integration of vocational training and general education - with the inevitable reduction in depth of training in each trade. In this academic drift, training became 'education', and 'trade' became 'technology'. This was a familiar trend in some other African countries too, after Independence (for neighbouring Kenya, See Sifuna, 1976; Lauglo, 1985b).

In bringing about the demise of the trade schools, the perception that students had of the labour market must have been important. But the market has changed and so have probably also the perceptions. As the prospect of a white collar job has become more uncertain, and as the chances of continuing to secondary school have dramatically declined for Tanzanian primary school leavers - the primary-to-secondary promotion rate dropped from 36% in 1961 to 3.1% in 1984 (Cooksey & Ishumi, 1987 p.12), skilled manual work in the modern sector must have become much more attractive for primary school leavers. The dramatic erosion of public sector wages during the 1980s must have tarnished the lustre of white collar employment. Furthermore, rising school leaver unemployment has made it desperately urgent to find any kind of job. What Sifuna wrote in 1976 (p.164) about Kenya and Tanzania, must be more evident today: *"Many primary school leavers who only a few years ago constituted the major employment problem now move rapidly into work which a few years ago they would have shunned."* This helps to explain why the academic drift in both Kenya and Tanzania has now been reversed in vocational training policy. The development of the National Vocational Training System is part of this reversal.

2.1.2 Early Approaches to Manpower Forecasting

As the trade schools became secondary schools and the Ministry of Education moved out of vocational training, the Ministry of Labour was again made responsible for organizing vocational training on a new footing, including apprenticeship programmes. A second manpower survey was carried out in 1964, under the direction of Robert Thomas. It was a typical example of manpower forecasting approaches of that time, using the development plan as the starting point for estimates of manpower requirements 1964/65 to 68/69. In addition to giving numbers for larger categories such as bricklayers & tilers, and carpenters & joiners - most of whom had then, as now, undoubtedly been trained informally, one was told e.g., that the new requirements by 1968/69 would include 70 cabinet makers, 5 precision instrument makers, 14 fitter assemblers, 34 molders and core-makers. Like similar plans in other countries, it must have left the mistaken impression that precision is possible in such forecasts, and that the forecasted job-openings would mainly be filled by those formally trained for the jobs.

It took time before the new training intentions of the Ministry of Labour could be implemented. Various pilot activities were started, but during the late sixties training of

skilled craftsmen was mainly left to individual firms and to the efforts of mission trade schools. The National Vocational Training Division started in 1968 with assistance from UNDP/ILO which included the construction of a vocational training centre in Dar es Salaam (Chang'ombe), the establishment of an in-plant training programme for apprentices, the setting up of a training programme for up-grading of instructors and a Trade Testing Unit. During the Second Development Plan (1969/70-1973/74) the main objectives of the National Vocational Training Programme were to draft apprenticeship and training legislation, and to assist training by employers, especially with trade testing. With assistance from CIDA, an Instructor Training Unit (ITU) was established in the Dar es Salaam VTC at Chang'ombe in 1973. Until 1979 it ran 12 month courses, subsequently 18-month courses, along with various short courses.

2.1.3 The National Vocational Training Act of 1974 and the Plans for a National Training System

In 1974 the Vocational Training Act was passed. In 1975 The National Vocational Training Division was established within the Ministry of Labour and Manpower Development. The Act establishes a National Vocational Training Council with representatives of employers, employees and Government. The ambitions for the Council are high: it was supposed to ensure an adequate supply of properly trained manpower at all levels in industry and to secure the quality and efficiency of vocational training. The Council sets up training committees in different industries/trades. The Act also lays down regulations under which the present programmes and their national organization are established: national training centres, apprenticeship contracts, and trades testing, which all are placed under the the Director of Vocational Training in the National Vocational Training Division of the Ministry.

Some 15 years later, important parts of the Act have not been implemented. This is especially true of provisions for inplant-training/apprenticeship. The Director, in consultation with the Council, is empowered by the Act to make training schemes which prescribe conditions for regulating the training of apprentices. So far, employers have at best some awareness of an apprenticeship contract, but there is no specificity about what apprentices should learn (See Chapter 8). Employers are however by the Act supposed to appoint amongst their employees, a person generally responsible for supervising the training of apprentices and a master who is responsible for their day-to-day guidance. Inspectors are empowered to enter any work premises and examine the degree to which the conditions of the Act are being adhered to. But it has not yet been possible to develop any systematic inspection of this kind, nor any systematic support to training within firms.

The basic building block in the training system developed by the NVTD is *Basic Training* at a *National Vocational Training Centre* (NVTC), aiming to teach basic employable skills in one-year or sometimes two-year course. Present policy is to expand the range of two-year courses. In Basic Training, about 60% of the time is spent on practical work, the remainder on related trade theory and general education. At the end of Basic Training, trainees take tests which together with more continuous assessment by instructors are the basis for awarding a Certificate of Basic Training. Only those who successfully pass and thus obtain this certificate, can be placed by the NVTD in industry for an apprenticeship which is supposed to be of 2 to 3 years' duration. Regulations also make it possible to follow a route to apprenticeship that does not include a Basic Training Year. In either

case, the intention is that practical training in industry would be conducted according to a job-training guide (yet to be developed and disseminated) prepared by the relevant training committees.

Apprentices are intended to attend evening classes in trade theory. These classes are run by, and usually based in, a National Vocational Training Centre. The intention is that trade tests be taken at the end of each year of apprenticeship, with grade III as the lowest grade, and grade I as the highest skill requirement. The trade tests are not restricted to those formally apprenticed or to those who have come through a Vocational Training Centre. In fact, the great majority of those who present themselves for a trades test have no experience of basic training. But from 1988, those who present themselves for a trades test are required to show a Certificate of Attendance from evening classes run by the Vocational Training Centres.

A Certificate of Apprenticeship completion is to be awarded when all requirements (at least trade test grade II) have been met, to show that the trainee then has been fully trained in the trade.

The diagramme in Appendix 4 summarizes the intended structure of the training programme. The structure shows interplay between employment and institutionalized training, and trades tests - which also should be open to those who have been trained on the job supplemented only by evening classes, leading to a Certificate of Apprenticeship as the culmination of at least 4 years of training. There is a complex structure of trades tests - 3 grades and about 60 (sic) trades - which has become so interconnected with payscales that a 'modernizing' simplification of the grades would be hard to achieve. This complexity is greater in Tanzania than in industrially advanced countries in which the usual pattern is a single main qualification in each trade, with an additional 'master' qualification that may be achieved by some after years of experience.

Otherwise, the Tanzanian plan bears resemblance to systems which in recent decades have emerged in those industrially advanced countries which depend heavily on apprenticeship: a basic year followed by apprenticeship and evening classes. Such combined systems require close relations between training institutions and industry and are managerially complex (See Chapter 1.4.3).

The structure of training in Tanzania is thus a 'combined mode'. *This means that the external efficiency of the intended training is not really shown by the 'match' between Basic Training and subsequent apprenticeship* - these are both 'internal' to the intended programme. External efficiency should really refer to the connection between the complete training, apprenticeship included, and subsequent work as a fully trained skilled worker. However, it is only the basic training period which is now 'in place'. What goes for apprenticeship is usually placement (or self placement) in a semiskilled job without any especially organized training internal to the firm. Apart from evening classes in trade theory, deliberately organized training ceases at the end of the basic training for the vast majority of trainees. Thus, 'apprenticeship' is still in fact external to training, rather than internal to it (See Chapter 8).

2.2 Present Structure

There is a coordinating body, the National Technical Training Advisory and Coordination Council (NATTACC) which was formed in 1979 with members from 17 Ministries and various other institutions. Under this advisory body, training is carried out by different Ministries and by a range of NGOs and other institutions. However, this section deals mainly with provisions under the Ministry of Labour.

2.2.1 Basic Training

As of 1987/88, the basic training capacity of the system was 2200 trainees spread over 34 different courses and 11 National Vocational Training Centres (Table 2.1). Further, work has started on a new Centre at Mbeya. Activity to develop a centre in old facilities has also started at Kigoma, Morogoro and Tabora. For comparison, in 1958 the two trade schools which then existed had a capacity of some 1200. Since then, quantitative expansion has been very slow. The closing of trade schools during the post-Independence rush to meet aspirations for general education must have been a set-back for vocational training.

**Table 2.1 Enrolment at National Vocational Training Centres.
Intake and output 1987/88 from one-year basic training courses**

Centre	Total	Intake		Total	Output	
		Male	Female		Male	Female
Dar es Salaam	551	423	128	524	408	116
Tanga	273	210	63	263	200	63
Mwanza	292	248	44	254	214	40
Moshi	236	194	42	220	193	27
Dodoma	191	145	46	185	147	38
Songea	40	33	7	36	29	7
Iringa	38	32	6	38	32	6
Lindi	45	35	10	39	31	8
Musoma(Mara)	64	46	18	57	53	4
Kagera	100	79	21	88	68	20
Arusha	46	46	-	34	34	-
Total	1876	1491	385	1738	1409	329

Source: NVTD, 1987/88 Annual Report

Table 2.1 shows some further basic statistics. Overall, the drop-out during basic training is not high, when output and input figures are compared: in total 138 trainees or 7.4 percent in 1987/88. There is a dichotomy in the system between the more developed, larger centres with enrolments from 190 and up, and the smaller centres. The former have had considerable support from donor agencies. One would therefore expect less dropout there, than in centres which have had to rely on very limited local resources. We find a drop-out from the smaller centres of 12.3% as compared with only 6.3% from the larger

centres. Moshi, which is of special interest to SIDA, and which is the centre with the highest level of equipment and the technically most advanced trades, had 6.7% drop-out.²

The enrolment is overwhelmingly male (about 80%). Females are less likely actively to seek admission (though some are nominated by the Regional Education Office); less likely to complete the training if they enrol, and - one would expect - more likely to meet with discrimination when looking for apprenticeships and jobs. For boys the total drop-out during Basic training is 6.5%. For girls it is 10.6%.

Are there any indications that girls are more likely to drop out in the most distinctly 'male' courses than in the less 'male' trades? We cannot measure female dropout in those trades which have no girls. But if we group trades in which some girls did enrol, into two categories: courses with at least 1/3 girls of the initial enrolment, and those with a smaller proportion, *there is a tendency for girls to drop out more often from courses where they are more distinctly a minority* (Table 2.2). *To pursue equity goals in the most distinctly 'male trades' thus has an 'efficiency' cost in terms of higher drop outs.*

Table 2.2 Drop-out percentage of girls in courses with 1/3 girls or more as compared with courses with less than 1/3 girls.

Trade group	N	Percentage girls	Girls: % Drop out
Trades with 1/3 girls or more*	248	70	6
Trades with less than 1/3 girls	1,070	17	16

*Courses with more than 1/3 girls include, e.g., Laboratory assistant, Tailoring, Shoemaking, Civil Draughting (at Dar es Salaam VTC), Office Machine Mechanics, Painting/Signwriting, Refrigeration & Airconditioning, Instrument Mechanics, Mechanical Draughting

Source: tabulated from figures on first-year courses supplied in NVTD 1987/88 Annual Report. Only courses with at least one girl enrolled are included.

The percentage of girls in the intake is roughly the same in the smaller centres (19%) as in the larger, more developed ones (21%). But in the smaller centres the dropout is 8.8% for boys and fully 27% among the small group of 62 girls who started there. These drop-out percentages underestimate the proportions who do not complete their training since basic training is only the first stage. We shall need to look at how female trainees fare in the placement into apprenticeship, as compared to the boys (Cf Chapter 8).

²It is unclear whether this includes those who fail the Certificate of Basic Training. If not, the 'wastage' during basic training would be higher than these figures. Also, there is some initial 'wastage' during the admissions procedure (See 7.1.1).

The problems establishing adequate in-plant training is one reason for the decision to prolong basic training, moving to two-year courses especially in mechanical and electrical trades. *Even if existing facilities are utilized more efficiently, this policy will constrain the scale of output from basic training and drive up unit costs.*

2.2.2 The Trades Taught

Table 2.3 shows the trades taught at the different centres during 1987/88, with total enrolment (intake) figures which also include some second-year courses which exist at Moshi and Dar-es-Salaam NVTCs, and even a few trainees who nominally are listed as third year trainees but who in fact function as teaching auxiliaries (at Moshi). Looking at the horizontal percentage marginals, one sees that the bigger NVTCs with past and/or present major donor support greatly dominate enrolments (84%). There is also in some areas proliferation of closely related and overlapping trade courses - 34 are listed here. There are only a few of these courses which (although they are listed as basic) effectively require previous vocational training in a 'foundation' trade. These are all developed with Swedish support at Moshi NVTC. Some of the Moshi courses are of two years' duration, as are those in the Swiss supported course-enclaves at Dar es Salaam NVTC.

The bewildering range of closely related variants in some areas of skill (in the areas of: blacksmithing, fitter-turning, motor mechanics) could reflect the 'old' planner's view of specialties aimed at small labour market niches (See Chapter 1.2). It may also simply show the footprints of expatriate influence from different home-country traditions (Swiss, Swedes, Danes, and in the past also Canadians).

This structure should now be reviewed to see whether there is a case for simplification and standardization, around a more limited range of broad basic training courses. It is important that especially the highly specialist skills (e.g. machine tool repair, tool and die making) be taught in very close connection with industry, in terms of both recruitment of trainees with relevant prior experience, and placement after training. In such revision of structure, data on the labour market destinations of those who have already been trained are crucial (See Chapter 8).

Looking at the vertical marginal percentages, one sees that the construction trades of carpentry/joinery, plumbing/pipe fitting, masonry/bricklaying, electrical installation, and (arguably in the same group) painting/signmaking together account for 39 percent of the enrolment. Especially masonry/bricklaying and carpentry/joinery are clearly the staple trades of the new training centres which have been developed with local resources - one of which is the contributions which trainees have made with their own labour.

The basic engineering trades of fitting, turning, machinery installation account for some 17 percent, vehicle/motor repair/mechanics make up another 10 percent, and the basic non-engineering metal trades (blacksmithing, welding) account for a further 9 percent. The remaining 1/4 of the enrolment is scattered on many small groups, ranging from the 'advanced' engineering trades taught at Moshi to the more humble tailoring.

TABLE 2.3. TRADES TAUGHT AT THE DIFFERENT NVTCs DURING 1987/88 WITH ENROLMENT FIGURES.

TRADE	D'SAAM	TANGA	MWANZA	MOSHI	DODOMA	SONGEA	IRINGA	LINDI	MARA	KAGERA	ARUSHA	TOTAL	%	GRL
CARP/JOINERY 31		23	31		23		12	15	16	26	23	200	9.6	3
PAINTING/SIGN 35		19	20		17				16			106	5.8	53
PLUMB/PIPE FIT29		22	23		19	6			16			115	5.5	21
PIPE/BOIL MECH.				24C								24	1.1	-
MASON/BRCKLAY 34		29	44		29	17	10		16	25	23	227	10.9	2
ROAD MAINTEN. 18												18	.9	-
BLACKSMITH 21		16	21	27A								85	4.1	-
WELD/BLACKSM.					26							26	1.2	15
WELD/FABRIC		26	24							28		78	3.7	1
FITTER/TURNER		25	32									57	2.7	2
FITTER MECH. 148A			32		25							205	9.8	12
MACHINERY FIT.				42C								42	2.0	19
FT. MACHINIST 47B												47	2.2	2
ELEC. INSTAL. 38		30	30		30		16					144	6.9	22
MOTOR REWIND. 33												33	1.5	45
INDUS ELECTR*				23								23	1.1	13
ELECTRONICS*				31A								31	1.4	16
TOOL&DIE MAK.*				22C								22	1.1	-
FOUNDRY*				24A								24	1.2	4
PATTERN MAK.*				25C								25	1.2	12
MACH.TOOL REP.*				22A								22	1.1	-
INSTRUM. MECH				28C								28	1.3	39
MOTOR V. MECH.		44	35			17						96	4.6	3
TRUCK MECHAN. 66C												66	3.2	3
DIESEL MECH.*				24C								24	1.1	13
PANEL BEATING 32												32	1.5	-
LAB. ASSIST. 18												18	.9	88
REFRIG\AIR CON				20C								20	1.0	35
OFFICE MECH. 31												31	1.5	48
SHOE MAKING 17												17	.8	58
TAILORING 19		15								21		55	2.6	99
MECH DRAUGHT. 23				13D								36	1.7	30
CIVIL DRAUGH. 30					22							52	2.4	38
PRINT/BOOKBIND.		24										24	1.2	83
TOTAL:	670	273	292	325	191	40	38	45	64	100	46	2084	100.	20
HORIZONTAL %	32.1	13.1	14.0	15.6	9.2	1.9	1.8	2.2	3.1	4.8	2.2	100.-		

A) YEAR 1, 2, AND 3

B) YEAR 2 AND 3

C) YEAR 1 AND 2

D) YEAR 2

*: REQUIRES RELATED OTHER BASIC TRAINING BEFORE ENTRY

UNDERLINED=REQUIRES FORM 4 BEFORE ENTRY

SOURCE: ADAPTED FROM NVTC ANNUAL REPORT 1987/88

Table 2.3 also shows the girls' share of enrolment in the different trades (the column to the extreme right in the table). In some trades girls are clearly not marginalized during basic training (but apprenticeship and employment opportunity can be another matter; see Chapter 8): tailoring (all female), laboratory assistant, printing and bookbinding, shoe making, painting and signmaking, civil draughting, motor rewinding, office machine mechanics, refrigeration and air-conditioning and instrument mechanics. On the other hand, girls are hardly present at all in some large, 'heavy' construction and metal trades: masonry, carpentry, blacksmithing and related, vehicle mechanics. With few exceptions, whether by self-selection or selection, girls gravitate towards those trades which have some connection with wider spheres of female activity: the domestic crafts and home related technology, fashion/aesthetics, clerical/service jobs.

Finally, the table shows that more than half of the courses are taught only in a single centre. Unless these courses are actively marketed, some of these courses will suffer from lack of employer awareness of the exact skills involved. Some 'small' and highly specialized courses (e.g., instrument mechanics, foundry) will have special problems replacing staff. Others (like tailoring or motor rewinding) may have special problems because they offer 'formal training' for small workshops in the informal economy.

2.2.3 In-plant Training

The intention is that every trainee who successfully passes the basic training course (and obtains a certificate of basic training) should be placed in relevant work and should sign a contract of apprenticeship with an employer for a period of two or three years. But the content of training is referred to only in the most general terms. The contract formular includes this general statement:

The apprentice agrees to serve the employer ... with a view of acquiring knowledge, including theory and practice, in the trade in which the employer is reciprocally bound to instruct the apprentice ...

The employer undertakes to "give instruction to the apprentice in the trade, in theory and practice, by the best means available to the employer" and "to provide at his own expense proper tools and productive jobs for the purpose of instruction of the apprentice". There is also a passage to the effect that the employer must report to the Director of Vocational Training on the progress and conduct of the apprentice (reports every six months are officially required, but implementation is quite rare).

The contract makes no specific reference to any logbooks or schemes of work that in each trade would specify the content to be covered during apprenticeship, though the contract makes such measures (which are yet to be implemented) possible. The employer undertakes to:

... comply with all lawful instructions and directives of the Director of Vocational Training which may be issues from time to time for the purpose of promoting the training needs of the apprentice and generally for the furtherance of the objects and purpose of this contract.

There are further directives which require employers to keep records for every apprentice in their employment, and to appoint a supervisor supervise the trainee. Officers from the National Vocational Training Division are to inspect in-plant training and advise employers on the training methods. The trainees are to be issued with log-books for recording the skills. But these measures merely describe intentions; they are not yet implemented to any significant extent.

The apprentice undertakes to attend any courses which the employer or the Director of Vocational Training (NVTB) requires of apprentices; and the employer undertakes to release the apprentice for such evening classes. By regulations, the training centres are supposed to inform the employers about the apprentice's progress in such courses, but this is not common practice.

The employer is required to release the apprentice so that the latter can attend trades tests and to make the needed tools available for such purposes. Finally, the employer is required to pay the apprentice a wage which is the general minimum wage for persons with similar education, and to grant the apprentice benefits/leaves on line with regular employees. As of spring 1989 the wage actually paid seemed to be in the range of TSH 1700 - 2000 a month.

The official policy has been that employers should *not* have a chance to select their apprentices themselves, and that they should *not* be allowed to look nominees over during a probationary period before signing a contract. Rather, NVTB policy has been that it should be able to place trainees directly in those companies which make places available, and that apprentices and their employers should right away be bound by the contract which should be signed either for two or three years. An employer could then only get rid of an unwanted apprentice if breach of contract were demonstrated, after due process, to the satisfaction of the Director of Vocational Training.

However, the reality of 'placement' and 'inplant training' differs from these intentions. According to the 1986 NVTB annual report (p.11), about 74% of the trainees obtained a 'placement' in industry. This is a very rough figure. Some placements don't work out, and some 'unplaced' trainees place themselves. The match between trade of basic training and 'placement work' is bound to be loose. For Moshi which then had a placement rate exactly that of the national average and Tanga (which had a placement rate of only 49%), trainees will be traced and analysis in greater depth will be reported (Chapter 8). Employers sometimes involve themselves in screening candidates, or they sign a contract only after having had a chance to try a trainee out. But only a minority of trainees obtain a signed contract at all. *Thus, for the class of 1986, signed contracts were received by the NVTB for only 13% of the total number of trainees, and for only 20% of those who were recorded as 'placed' in industry. In 1987/88 only 172 contracts of apprenticeship were signed as compared with a total of 1527 trainees who in that year qualified for apprenticeship among those who did not continue to a second year of training.* In general, the policy and directives do not describe reality in in-plant training. Of those who left basic training in 1986, only a miniscule minority had in 1989 been awarded the Certificate of Apprenticeship in their trade.

This is a major challenge facing the NVTB today, because the basic training year is in no way designed to be a complete training that brings a trainee up to 'entry level' as skilled workers in the trades.

2.2.4 Evening Classes

Evening classes last for one academic year for each grade and the attendance is between 4 and 7 p.m., spread over a maximum of three evenings per week. During 1987/88 evening classes were offered in 15 centres with a total registration of 7165 trainees (1987/88 NVTD Annual Report). There is no direct way of estimating the flow of trainees from basic training to evening classes, since these classes are open to (from 1988 even required of) anyone taking a trades test, and since only a small minority of candidates for trades tests have taken basic vocational training. *How* small this minority is we do not know, since no statistics could be obtained on the background of those taking evening classes or trades tests.

Table 2.4 shows some statistics on evening classes.³ Evening class enrolment is concentrated in Dar es Salaam, and is major activity of the DES Vocational Training Centre at Chang'ombe with 4,528 registrations in 1987/88. For comparison, the number of trainees in basic training there during the same year was 670 (See table 2.3). At the other extreme in terms of scale of operation, a number of centres 'under initial development' (Mtwara, Mbeya, Singida, Kigoma) had apparently started evening classes as a first activity in 1987/88. Evening classes are suitable as 'start-up activities' because they are trade theory classes and do therefore not require scarce tools, equipment, or materials.

This exclusive emphasis on theory (with notional opportunity for demonstration lessons) assumes that practical skills training can be left to employers. We have noted earlier (table 2.1) that the annual output from basic training was 1738 in 1987/88. The 1987/88 registration for Grade III evening courses was 4,706 or 2.7 times that of basic training. Clearly, the vast majority of those who go to evening courses have never been to basic training. Therefore, evening courses are in fact more an alternative to basic training than they are a supplement to it. *The design of syllabuses for evening classes should take fuller account of this fact, by including practical skills training. They are neither refresher courses nor an extension of practical skill; for most who come there they are now introductory trade theory courses.*

³Table 2.4 probably does not include all NVTD evening class enrolment since some occurs within industry, outside of the NVTCs - or in technical secondary schools.

Table 2.4 Evening class registration during 1987/88 by centre and grade.

Centre	Registration			Total	Percent
	Grade III	Grade II	Grade I		
Dar es Salaam	2,881	1,125	522	4,528	63.2%
Mwanza	216	116	74	406	5.7
Moshi	163	63	22	248	3.5
Tanga	240	68	47	355	5.0
Morogoro VTTC	198	81	20	299	4.2
Dodoma	91	31	21	143	2.2
Musoma	81	19	-	100	1.4
Kagera	193	13	-	206	2.9
Iringa	54	55	8	117	1.6
Lindi	15	-	-	15	.2
Songea	120	20	8	148	2.1
Mtwara	23	18	-	41	.5
Mbeya	133	8	-	141	2.0
Kigoma	52	-	-	52	.7
Singida	316	46	9	371	5.2
Total	4,776	1,663	731	7,170	100%
Percentage	66.6	23.2	10.2	100%	

Source: Data compiled from the 1987/88 NVTD Annual Report

Another striking feature of the evening class attendance is that 2/3 is in the basic grade III course. In a system that has not had rapid quantitative expansion, this simply means that there is very little progression from the lower to the higher grades. There is inevitably some dropout. At Moshi NVTC it runs to about 20% each year. No national statistics on the extent of dropout are available.

2.2.5 Trades Testing

Trades tests are supposed to denote completion of training, with Grade III being the lowest level - leading to the crowning achievement of a Certificate of Apprenticeship after at least Grade II. Just as evening classes have wider clientele than trainees from basic training, so trades tests are attempted by many who had no experience basic training or evening classes. The 'openness' of the certification is laudable, but it is also clear that it increases the failure rate. Table 2.5, which used data in the 1987/88 NVTD annual report, gives some basic statistics.

The number of those registered for Grade III alone totals 4,258 - more than twice the number registered for evening classes in grade III courses that same year. It is overwhelmingly likely that most of those who registered for the trade test had not attended evening classes. Since that time, a Certificate of Evening Class Attendance has become required for the trades test, though possibly with dispensation for candidates in locations where no evening classes are offered.

In view of the high failure rate, it would have been exceedingly interesting to assess the chance of passing for candidates who attended evening classes as compared with those who did not. It would further be especially interesting to see how those who came up through

Table 2.5 Trades testing 1987/88

Grade	Registered Absent		Attempted the test	R E S U L T S			% Pass
	for the test	from the test		Failed	Nullified	Passes	
III	9,258	1,065	8,193	4,885	425	2,885	35%
II	3,261	345	2,916	1,575	236	1,105	38%
I	1,493	174	1,319	718	128	473	35%
Total	14,012	1,584	12,428	7,178	789	4,461	36%

Source: 1987/88 NVTD Annual Report

basic training at National Vocational Training Centres, compared with those who did not, in terms of both evening class attendance and pass rates. We were unable to collect or obtain such statistics, except for Moshi and Tanga (See Chapter 8.4).

The pass rate is disasterously low.⁴ It could mean that access to the test is too easy so that much time is wasted testing candidates who have no chance of passing. *But it also means that the tests themselves and their validity need closer scrutiny.* Reportedly, the most common stumbling block in the exam is the trade theory paper. How important is the kind of theory which is tested, in the skills which employers are looking for? How valid are the practical tests of the practical skills which no doubt are wanted by employers? It is important that employers be intimately involved in revision of trades tests, for these tests are intended to serve work organizations by certifying the trade competence of workers.

At present, the trades testing system is a vast examination machinery whose complexity has badly strained the administrative capacity at NVTD headquarters. In 1987, for some reason trades tests were not administered at Moshi NVTC (according to Espling *et al.*,

⁴Some other tabulations suggest that the pass rate is some 5% higher than what is shown in Table 2.5. Even so the inference still stands.

1988). In 1988, the administration was chaotic. Candidates were informed late about time and place. Lists of invigilation were late. Cutting lists specifying materials which would be needed for test were late or missing. Some question papers were missing, sometimes the whole exam in a particular trade. Some exam numbers of candidates were mixed up. Not all exam papers had been duplicated and made ready by NVTD headquarters.

Appendix 5 shows the full complexity of the testing. The range of trades tested exceeds those taught in evening classes or in basic training. For grade III, there were tests administered in 45 trades in 1987/88, for grade II there were 40 trades, and for grade I 37 trades. At considerable expense, 22 different practical tests and the same number of theory papers had to be devised. In each trade the average and the median number of passes were respectively quite small: 64 and 13 for grade III, 27 and 8 for grade II, and only 13 and 4 respectively for grade I.

It very much appears as if the system of trades testing only partly includes the system of basic vocational training, rather than the former being clearly based upon the latter.

2.2.6 Instructor Training

There are two kinds of training of vocational instructors: long and short courses. The long instructor training course is of two years duration and is designed for instructors with full-time instructional duties within vocational training institutions. The short term Instructional method course lasts for eight weeks and is intended for part-time instructors and apprentice supervisors within industry. There is also a four-week course for supervisors which has been run in the past, basically for foremen within industry.

Instructor training courses are now offered at the newly built Vocational Teachers Training College in Morogoro. The College was constructed under the sixth IDA Education Project, and SIDA is presently providing technical assistance and workshop renovation. In certain trades, instructor training is also conducted at Dar es Salaam NVTC as part of an upgrading programme supported by the Swiss Ministry of Foreign Affairs, using Swisscontact, an foundation established by Swiss engineering industry, as the contracted operating agent.

Both the long and the short course seem to suffer lack of full utilization of very expensive capacity. It is likely that in order to recruit adequate numbers these courses need to recruit instructor trainees sponsored by institutions outside the NVTD. A reputation for quality and aggressive marketing of instructor courses will be needed to achieve adequate capacity utilization (See Chapter 5.5 for discussion of Swedish support).

2.3 Plans for the Development of Vocational Training

2.3.1 The 20 Years Plan for Vocational Training

A twenty year development plan (1981/82 - 2000) for vocational training was approved by the Government in 1981. The economic assumptions which underlay that plan must have been invalidated by the poor performance of the Tanzanian economy since the time when

the plan was adopted (See Chapter 3). But it remains a policy document which sets goals for the development of vocational training in the country, through the work of the National Vocational Training Division.

The plan seeks to establish a Vocational Training Centre in each region and subsequently in each District by the year 2000. Whilst the regional centres are to concentrate on skills for industry, the district centres are intended to train more directly for rural development: to improve agricultural productivity and skills for the promotion of local crafts through small scale industries.

The 20-year plan includes 15 Regional and 83 District Vocational Training Centres to be constructed at an estimated cost based on 1980 prices of Shs 383 million for the Regional Centres and Shs. 748 million for the District Centres (NVTB, 1980). It is stressed that the Regional Centres should operate "*under close links with industries*" in order to impart relevant skills according to needs. Thus, the intention is that each Regional Centre would in its courses be geared to the manpower needs of industries in the region concerned.

One point of departure for initial course planning was the distribution as of 1975 of types of industry by region as reported in a 1975 report by the Bureau of Statistics. A second point of departure was an estimate of "*Available Training Capacity in Crucial Vocational and Industrial Skills*" stating training capacity, balanced annual need, and annual shortfall for 53 different industrial skills on a national basis. This document (Appendix V in the Plan) arrives at a total baseline annual shortfall of some 4000 skilled industrial workers. For comparison, 15 operational Regional centres of an average output of some 250 would produce about 3,800 trainees ready for apprenticeship annually. No source is given for the estimates of manpower shortfall, nor is there any discussion of the methods used. Yet, implicitly at least, the estimates probably served as an argument for considerable expansion of training capacity. It may also be that the fine categorization of skill shortfalls did serve to reinforce the thought that institutionalized training should be quite specialized. Thus we find among the 53 occupations, such separate listings as:

Annual shortfall

Motor vehicle mechanics	270
Truck mechanics	100
Diesel engine mechanics	100
Construction equip. mech.	60
Plant maintenance mechanics	50
Machine tool mechanics	100
Mining machinery mechanics	60
Agro machinery mechanics	60
Textile machinery mechanics	80
Iron structure mechanics	30

Quite apart from the validity of the numerical estimates of 'shortfall' and the possibility of forecasting future demand, such a listing begs questions of how far the skills are sufficiently distinct to warrant institutionalized training rather than training on the job, and what common initial foundation and experience clusters of such specialized training would require.

The plan makes no direct attempt to plan the scale of output of basic training in different skills over time. Obviously, estimates of manpower shortfalls which are more than a decade old are in any event of no use as guidance for present (1989) planning. There is apparently no more recent attempt to develop any systematic planning techniques of a similar or preferably improved kind in order to estimate short-term effective demand for industrial skills in Tanzania (See Chapter 3).

In addition to the Regional Centres, the Plan includes the development of 83 District Vocational Training Centres, which would have agriculture and 'informal sector' craft/small scale industry as the target. It is stressed that "*all buildings of these centres should be extremely simple*" and that part of the construction work should be done by the trainees themselves. No attempt is made to estimate effective demand for skills in this sector, and priority is given to a 'supply side' approach, in that the first aim is to "*impart employable skills to young people*". But if 83 centres were made operational with an average annual output of 200-300 trainees, the total annual output would be about 20,000. The long term aim is to absorb into Regional and District skills centres some 20-25% annually of young people from the primary schools.

Overall, the plan is based on a 'supply approach' to manpower development. This means either simply assuming that anticipated development will require great expansion of industrial skills training - that there is ample room for expansion, or that 'employable skills' taught to school leavers will generate their own demand. This implies that training is seen as a *lead factor* in economic development, rather than a response to effective labour market demand. This is a risky assumption, given the high cost and complexity of vocational training (See Chapter 1). Apart from development cost, there is no attempt in the Plan to estimate the considerable recurrent cost implications which the Plan would entail. This is an important deficiency since a major problem in the NVTCs which now are operational, is to meet the high recurrent costs (See Chapters 7.5, 6.5, 4.2).⁵ There are a number of other constraints upon the implementation of the 20-year plan, and one can question whether such a long planning perspective is appropriate in the development of provisions which both in terms of finance and demand of output are so strongly dependent upon economic development.

2.3.2 The Current Five Year Plan

During the 1980s, Tanzania's economic development has suffered very great setbacks, both in agriculture and industrial development. This has severely constrained the implementation of the ambitions in the 20 Year Plan. Nonetheless, not quite half the way through the Plan period, 11 National centres, which are earmarked to become Regional, were operational as of 1987/88, with initial activity underway in some the other planned locations. The annual output of trainees from basic training is approaching 2000 as compared with more than 4000 intended by the end of the century.

But there is only isolated activity in the development of 83 District Centres. One striking exception is the well-equipped centre in Mikumi which is supported by the Government of

⁵However, in practice, the NVTDs decisions to establish and expand training programmes are to some extent influenced by rough impressions of labour market feedback - i.e., by how 'easy' it proves to place trainees in apprenticeship.

Ireland (See Chapter 4.4). The development of District Centres is the responsibility of the District Councils, with the NVTD having only an advisory and inspectorial role. Compared to the NVTD, the District Councils are very much at a disadvantage in expertise, access to donors, and financial capacity to meet recurrent expenses.

The current five year plan of the NVTD (1988/89 -1992/93), which lies within the long term plan, has these objectives:

- i. *Improving the quality of vocational training through the rehabilitation of existing facilities and extending the period of full-time basic training from one year to two years. Training of instructional personnel will be developed parallel to the quality improvement programme.*
- ii. *Extending basic vocational training facilities for both the industrial sector as well as for the provision of basic employable skills to young men and women in support of small scale industries, local crafts and agricultural production.*

Facilities will in particular be developed in the remaining regions, so that at the end of the plan a Vocational Training Centre would have been established in each region.

Thus, priority is on developing and strengthening a nucleus of Regional Centres. Some of the new sites were initially developed without donor support (e.g. Arusha, Morogoro, Iringa). This typically means self-help renovation and construction of facilities, using trainees in the construction trades. It also has meant an initial search for existing facilities in which some training can be initiated without waiting for plans and construction of new facilities, even if the location may be less than optimal. Other centres are planned as new sites with donor involvement from the beginning. Thus donor support is requested for three main purposes: planning and building an entirely new centre, rehabilitating rundown facilities and improving quality at long-established centres, and adding to the development of new centres which have started by self-help renovation in facilities originally intended for other purposes.

In order to strengthen the quality of training, Tanzania is committed to extend basic training to 2 years. This will add greatly to the recurrent cost per trainee. But it recognizes that for most trainees, organized vocational training - as distinct from that which is incidental to work experience, stops at the end of basic training. It shows that institutional training is easier to develop for a national training authority than it is to induce and organize employment-based training.

The map in **Appendix 6** shows Tanzania's regions and districts in which the vocational training centres are planned or already located.

2.4 Other Vocational Training Programmes

Under this rubric are provisions which are not run by the Ministry of Labour, Culture and Social Welfare. But the NVTD has responsibility for approving curricula; and it has rights of inspection (rarely exercised) over most of these provisions.

An attempt at a complete survey by trade, location, and by provider was made in 1978 by the Joint Mission for a Survey of Vocational Training and Technical Education in Tanzania, under the chairmanship of Mr. Manyanga, the Director of the NVTD. It was then found that out of 3,305 trainees/students, 1160 were in NVTCs, 1220 were in technical schools run by TAPA (the Tanzania Parents Association); 717 were in missionary vocational training centres, and 208 were in company training schools along with a greater number in short or part-time company based training. More recent (1986) data on training refer to an intake of 1,689 into 112 'private' training centres, of 210 trainees into 10 centres run by parastatal organisations, and some 700 into 30 missionary training centres.

A recent UNESCO unpublished report gives estimates of capacity, annual enrolment and annual output from various institutions providing 'craftsman' training in Tanzania. These are possibly rough estimates in some cases but they suggest a total annual training output of some 11,000 to 12,000 trainees of varying skill levels, including those from technical secondary schools who really have undergone a course that is mainly concerned with general education (Table 2.6).

Table 2.6 Craftsman Training in Tanzania (recent years)

<u>Institution</u>	<u>Capacity</u>	<u>Annual enrolment</u>	<u>Annual output</u>
Post primary tech. centres	50,000	4,200	3,570
Technical Secondary Schools	3,580	790	780
TAPA technical schools	8,000	2,000	1,700
Mission trade schools	700	700	665
Company & parastatal schools	250	210	200
Folk development colleges	3,600	2,600	2,210
Vocational training centres	2,250	2,250	2,140
Total	68,380	12,750	11,265

Thus vocational training centres account only for a small part of the total annual output.⁶ They share, according to these estimates, an important feature with mission trade schools and company & parastatal schools: the annual output, enrolment, and annual capacity are not too divergent, *suggesting reasonably good capacity utilization and through-flow*.

The Ministry of Labour and Manpower Development produced manpower projections for the period 1981-2000 based on a manpower survey conducted in 1980. These projections are considered very tentative and in need of revision, taking into account the disappointing economic performance during 1981-87. But if one assumes 3.5% annual increase in labour force stock, and a 10% annual 'wastage' (retirements, deaths, etc), one would according to these estimates need somewhat less than 8000 new craftsmen annually up to 2000. This is less than the current levels of output of 'craftsmen' in Table 2.6 (about 11,000), but most of that 'output' acquire very low skill and can hardly be considered 'skilled' or 'craftsmen'. The annual 'need' could also be compared with the recent annual output (less

⁶The figures for 'company and parastatal' training could be understatements, given their smallness and how difficult it is to get complete coverage of company-based training, even of the more 'school-like' kind. In general, the figures in Table 2.6 are probably fairly 'loose'.

than 3000) from trade test grade III (Table 2.5). Loose as these figures are, they are consistent with the view that *the system needs consolidation and quality improvement, not expansion of the scale of total provisions* (See also Chapter 3).

Of the 'non-NVTD' courses, it is mission trade schools/training centres and company training schools/centres which have the best reputation, whilst TAPA technical schools and post-primary technical centres (PPTC) have a distinctly poor reputation, badly lacking as they are in instructors and the most basic of training requisites.

2.4.1 Mission Trade Schools

There are about 30 mission training centres with a total annual intake of about 800. They have kept the old trade school pattern whereby courses of three to four years duration are run. Since their courses are longer than the national centres, their total annual capacity in terms of trainee years is considerable. In 1982 (Ministry of Labour and Social Welfare, 1982) the total training capacity was about 2,300 - *higher than the National Vocational Training system today*.

Most trainees are found in carpentry, tailoring, motor vehicle mechanics, masonry and bricklaying, and plumbing. The rest are spread in trades such as electrical installation, shoe making, cabinet making, welding, civil draughting, sculpture, tinsmithing, pottery, agriculture, fitting/turning, refrigeration and air-conditioning, instrument mechanics and sheet-metal work (Athumani, 1989). Trainees are normally admitted locally with a primary school background.

Interviews and selection tests are often used. Most of the training programmes have built in training-cum-production in order to recoup some of the expense of training and to expose trainees to the realities of working life. Several centres run production units. At least some of the Mission schools (e.g. Leguruki Vocational Training Centre which this Evaluation Mission visited) have a high reputation. Several reports (Athumani, 1989, Ministry of Labour and Social Welfare, 1982) conclude that the standard of training is usually 'high'. Through their church affiliation some may receive assistance from mission organizations/churches in Europe or North America. Their curricula are subject to approval by the National Vocational Training Division.

It is a strength for these schools that they have a strong local base through parish and diocese organizations. They exhibit some traits which National Centres are also seeking to develop (production units). To directly aid these schools is more complicated than the national centres, because though they are supposed to be advised and inspected by the NVTD, they are not all part of any single chain of authority through which an aid programme can operate.

2.4.2 Company Training Centres

No fresh national data were collected by this Evaluation on company schools. But several parastatal companies have long run their own training programme, indeed longer than the national vocational training centres. Such training of craftsmen and technicians is usually oriented to the company's own needs, though 'surplus' training can occur. They are not uniformly successful. For example, the evaluation mission visited the Tanzania Fertiliser

Company in Tanga whose training centre was defunct inspite of foreign assistance.

But on the whole, company training still has a reputation of adequate quality, perhaps because it is only the 'good' programmes which become known nationally. Programmes are run by the Tanzania Railway, by Tanesco (the electricity supply), by mining companies, and the Tanganyika Planting Company (TPC). There are about 10 factory training centres conducting two-three year courses in motor vehicle mechanics, fitter mechanics, machinists, tool operators, welding, electrical maintenance and blacksmith (Athumani, 1989). The training ususally takes place within the industry, utilizing the existing facilities. Company training at technicians level (an annual output of some 500) is run by the National Institute of Transport, Water Resources Institute, Ardhi Institute, Saruji training Institute, Tanesco Instiute, and National Sugar Institute.

Because they are not run by organizations whose main business is training, and because they do not constitute a 'system' which trains for 'outside' needs, the work of company schools/centres is not well mapped. It is therefore 'under-noticed'. In surveys of training it is typically mentioned - as it is in this chapter - only by examples in order 'to complete the picture'. Nonetheless, in spite of exemplary examples, it is quite possible that the average extent and quality of company-based training is quite humble, because the only schemes that become externally known are those which have a good reputation and which are the result of sustained effort. It could be that most companies make little effort to develop training in any organized way. The existence of good schemes is therefore no sufficient reason for 'leaving training to employers'.

2.4.3 Post-primary Technical Centres and Folk Development Colleges.

These are more widely dispersed. There are some 50 FDCs. In 1982 there were 292 Post Primary Technical Centres enrolling some 10,000 trainees. Both of these institutions are under the Ministry of Education. The PTTCs are intended to run 2-year courses. They are generally of low quality - Table 2.6 suggested poor utilization of capacity. The folk development colleges have a better reputation and run courses of varying duration for persons nominated from villages. In their official rationale FDCs and PPTCs both stress the need to serve the local informal economic sector rather than modern industry. In practice, training which gives real skill is also likely to be used to enter the modern sector. Some of the Post Primary Technical Centres are intended to be upgraded to become District Vocational Training Centres according to the 20 Year Plan for the development of vocational training.

2.5 Implications for Aid Strategy

Long-term Tanzanian training policy has been geared to excessively ambitious economic development plans; and vocational training has been seen as a supply that will create its own demand. These are risky starting points for vocational training (See Chapter 1). On the other hand, the system of NVTCs has expanded much more slowly than planned, and the present emphasis on 'consolidation' and 'improving quality' shows recognition that long term policies and plans may have been based on shaky assumptions.

In Tanzania too, there is strong social demand for training which means political pressure for expansion and for a truly national network reaching into every region and district.

Thus, there are strong political forces that favour a 'supply' approach to the question of how training best can meet economic needs. But because of the expense, the complexity, and the intended labour market specificity of vocational training, *donors should caution against 'supply policies' and instead support concentration of effort and close links with industry*, in order to promote relevance and quality in training and to ensure that supply will not deviate far from effective demand.

The National Vocational Training Division is in the Ministry of Labour rather than Education. This may be an advantage in developing the concentrated backup which vocational training for the modern industrial sector requires. But concentrating training to a few industrially more developed locations conflicts with the political view that training is not just a resource but an educational opportunity to be equitably shared and therefore widely distributed. NVTD faces political demands for expansion to all regions and is expected to back the development of district centres. It must then be tempting to look for existing facilities in which some training can get started quickly, in the hope that a donor can be enlisted to help 'consolidate' what is underway. To ensure that internal effectiveness is not lost through excessive diffusion of efforts, donors should support the consolidation and improvement of existing National Vocational Training Centres. If new ones are developed with donor support, their location and course offerings should cater for economic demand and for links with local economic activity. At any rate, further development of national centres (to be converted into a network of regional centres) will for some years continue to strain NVTDs capacity. Donor support to the development of district centres - to be operated by District Councils which lack expertise in managing training and the means to cover recurrent expenses - could at present be to spread effort too thinly.

Mission schools and company schools, rooted respectively in church organizations and industry itself, have a shared advantage of being part of well-established 'local' organizations which have a strong vested interest in making training work. This is helpful in overcoming the complex requirements which vocational training has. *It is likely that these two types, along with the NVTCs, are the types of training which can make the best use of donor support.*

The NVTD could become a more effective channel for inspection, curriculum development, and especially instructor training at mission schools and company schools. At present it is not so obvious that the NVTD system always has superior expertise to offer good Mission schools and company schools. NVTD's capacity to look after its own institutions is clearly strained, so that not much attention can be given to centres and schools for which it has no operational responsibility.

But the instructor training provisions now being developed by the NVTD *can* become important for these 'other' training providers. Conversely, it is also necessary for NVTD actively to recruit instructor trainees from outside its own centres, simply in order to utilize expensive facilities and staff at the Vocational Teachers Training College in Morogoro. To attract instructor trainees across Ministry divides and from NGOs or private companies will be an important but difficult task in the years ahead. It can only succeed if the VTTC can acquire a reputation of high quality instructors training leading to well recognized qualifications and to better pay for instructors.

The NVTD is unlikely to be a workable channel for direct assistance with facilities, equipment, and tools to training over which it has no operational responsibility. Direct

support to mission schools should be channelled through the NGOs that run these schools. Support to company schools should go through the companies that own and operate such training. Otherwise the bureaucratic entanglements become prohibitively time-consuming. Yet, some of the support which the NVTD is supposed to give to institutions outside its own orbit (curriculum advice, inspection reports) will be of little avail without the needed equipment, tools and materials. In general, the effective channels for assistance will be those which have operational responsibility for the institutions concerned. Effort is easily wasted if this observation is ignored, especially if the channels of one Ministry are used to assist institutions operated by another.

NVTD and its network of training centres, mission trade schools/centres; and company training schools/centres stand out as the good prospects for donor-assisted development of vocational training in Tanzania. They cannot all be directly assisted through the same channel, but NVTD has a 'feeder' role to play with trainees as inputs to the other types. NVTD also has a strategic role in the larger sum of efforts by now taking on the task of instructor training. *At present, donor priority should be to strengthen existing NVTCs and to caution against plans for expansion. Only when clear links with local industry can be assured, should donors prioritize what effectively is 'new sites' (even if some activity has started).* Construction trades which are not really 'industrial' are probably the most viable ones if centres nonetheless are developed without real links with local industry.

CHAPTER 3

THE TANZANIAN ECONOMY AND LABOUR MARKET

3.1 Economic Policy and Macro-economic Trends¹

During 1961-67 Tanzanian industrial strategy started from a very low industrial base and encouraged private, particularly foreign, investors to develop import substitution industries. *"Even when the low base of 1961 is taken into account, it can be claimed that industrial growth in Tanzania of more than 10% per year in the first decade after Independence was remarkable"* (Havnevik *et al.* 1988); and the share of domestic production in total supply of industrial goods increased from about 30% in 1961 to a 43% in 1971. The share of manufacturing value added in total gross domestic product reached a historical peak of 11.4% in 1972.

With the Arusha declaration in 1967 Tanzania committed itself to expanding the public sector's role in industry and to reducing dependence on foreign investment. A large number of manufacturing plants were nationalized.

In 1974, the government launched the Basic Industries Strategy (BIS) which gave priority to industry over the primary sector. Thus, the 1974 Vocational Training Act had as its context a policy of publicly planned industrial development. The BIS aimed at self-reliance (using domestic resources to meet domestic needs), the development of heavy producer goods industries and a wider range of consumer goods produced locally. Job creation and regional development became important in choosing manufacturing techniques and plant locations. The BIS resulted in large industrial investment. Most of these investments were large-scale, capital-intensive and import-intensive both in capital goods and in recurrent inputs in production.

A very large share of these investments was financed by foreign aid. Thus, the agencies which supported the BIS (SIDA was one), must share some of the responsibility for its catastrophic results, because the productivity of these investments has been disasterously low and they have increased dependence rather than self-reliance. Insufficient attention was given by donors and the government alike, to the future foreign-exchange costs of operating the industrial capacity which was added through BIS.

After 1973 the trend rate of industrial growth declined. During 1976-80, VA (value added) stagnated, followed by a trend rate of *decline* of about 4.5% per year up to 1986. Manufacturing VA in 1986 had become 31% lower than in 1979. The share of manufacturing in total GDP similarly declined. In 1987 it was 4.6% - lower than in any year since 1963. This decline occurred during a period of very high levels of industrial investment. The combined effect of these developments *"was that the average rate of capacity utilization in industry declined from about 53% in 1976 to about 25% in the mid 1980s."* This has been accompanied by dramatic erosion of the real value of industrial wages. Financial returns were maintained through wage erosion rather than through

¹This section draws heavily and directly on a recent sector review of Tanzania by Havnevik *et al.* (1988) which summarizes sources on Tanzanian policies and macro-economic trends up to 1988.

employment reductions. Employment even increased because it was related to capacity creation rather than to the level of actual output. At present, especially within the parastatal sector, wages are so low that workers and their families cannot subsist on them. Many workers therefore try to improve their situation through various auxiliary activities, also during work time, thus further undermining work discipline and productivity. Public-sector white-collar employment shows the same conditions. The declining real value of wages is a major source of corruption and moonlighting.

The decline in industrial output may now have been halted, but industry remains characterized by overstaffing and low utilization of production capacity. The present Economic Recovery Programme (from 1986) which was negotiated with the World Bank, aims to improve capacity utilization, to increase production of certain goods, and to allocate resources only to efficient enterprises in areas to which high priority is attached. Very drastic measures are used. There has been dramatic devaluation of the currency. Thus, in March 1986, the exchange rate with US Dollars was 17 : 1. In August 1988 it was 97 : 1, with further devaluations in 1989-90.² Other measures are tight government budgets, abolition of price controls, reform of tax and monetary policy, liberalization of foreign trade and foreign exchange allocations, higher prices to producers and increased availability of consumer goods.

Havnevik *et al.* (1988) note that *"In order to escape from the present depression it is especially important for manufacturing parastatals to adjust their level of employment to the actual level of production and use wages and salaries as incentives to increase productivity of output"* (p91).

The implication for employment of skilled industrial labour is that little extra demand is in prospect. Clearly, in some industries the ERP spells contracting employment. However, when companies shed staff, it is unskilled and thus easily replaceable labour which is most vulnerable. Skilled labour is fired with greater reluctance. *For industry, ERP would seem to imply that a 'demand driven' (rather than 'supply driven') policy of vocational training would need to stress skill improvement of those who are already employed, and generally very close relations between industry-oriented vocational training and industry itself.* Under such 'slimming down' and restructuring, companies will be reluctant to take on apprentices and trainees. It is not easy to justify taking on an apprentice, even if 'it is only for training' when the company is under pressure to shed unskilled and semi-skilled labour and an apprentice too will be paid the minimum wage. One would infer that getting a 'foot in' will then depend heavily on the personal connections which trainees and NVTD placement officers have with industry.

3.2 Labour Market Trends³

According to the 1988 census the Tanzanian population has reached 23 million of which 22.5 million are on the mainland. Since 1978 the population has increased by 5.5 million

²Appendix 9 shows the changes in exchange rate over time.

³This section has made special use of Närman's (1989) study for the Evaluation, of the labour market in Moshi and Arusha and industry's view of training.

or 2.8% per annum - a growth rate that is lower than the 3.2% annual rate recorded during 1967-78. In 1978 about 13% lived in what then was classified as urban centres.

Of the total mainland population in the 15-55 age range, about 80 percent were in 1978 making a living from agriculture. There is no statistical source which uses sufficiently precise occupational categories so that the trends for skilled industrial workers and craftsmen in modern sector can be traced. Wider groupings are used. But, in 1978, 3.1% (or 217.6 thousand) of the 15-55 population were 'crafts/machine operators'. The occupations for which vocational training centres seek to train are likely to fall within this wider grouping.

Wage earning opportunity is a minority's privilege in Tanzania. In 1978 there were only 536 thousand who earned a wage and were formally employed - less than 7% of the economically active ages. Up to 1987 it is estimated that 164 thousand new jobs were created, so that there would then be a total of 700 thousand wage earners. Still, the percentage employed for wages, of the 15-55 age group, remained at a low 7%.

The Manpower Planning Division of the Ministry of Labour and Manpower Development (1984) made a long term manpower development plan for the 1981-2000 social and economic development. The estimates used a 1980 Manpower Survey as its base-line data. The Planning Division recognizes both inadequacies in the base-line data and the hazards of forecasting.⁴ The estimates for the period up to year 2000 assumed an annual employment trend growth of 7% as compared with 6% during the 1964-1980 plan period. Sectoral estimates sought to take account of employment creation opportunities based on targets and objectives in the long term plan, and on information from employers during the 1980 Manpower Survey. The sectoral forecasts had these figures for 1986: Manufacturing 127,000; Construction 54,000; Services 174,000.

In actual fact, there were then no sufficiently good 'recent trend' data for manpower requirement forecasting purposes, even if the future had been a projection from the recent past. Nor are any good data now available. The best that is available are sectoral employment estimates, without any distinction as to occupation or level of skill.

According to 1989 estimates (Table 3.1) of actual trends obtained by Närman (1989) manufacturing employment in Tanzania grew from 28 thousand in 1965, to 84 thousand in 1977 and to 106 thousand in 1979. Table 3.1 picks up the trend from 1978, showing stability (perhaps some overall decline) in manufacturing's *share* of all wage earners in the country. The number of employees (computable from, not shown in, Närman's table) have increased: from about 106 thousand in 1978, 106 also in 1979, to 115 thousand in 1984 and about 124 thousand in 1987 (as compared with the forecasted 1986 figure of 127 thousand, referred to above). The average rate of increase during the 1978-1987 was 3% annually. *It was argued in Chapter 2.4 that in the years until 2000 even a growth rate as high as 3.5% would mean that no additional training capacity probably would be needed.*

⁴The Director of planning said that in recent years it has been very difficult to obtain reports on manpower and employment and to process and print these reports. The latest report on modern sector/industry appeared in 1988 but is for 1985 and with only 50-60% coverage (Ministry of Labour and Manpower Development, 1985). As of 1989, the 1986 report has been in the pipeline for a year and a half. Labour statistics published by the Bureau of statistics are nearly a decade old. Data for 1981-84 exist in draft form but are nearly a decade old, fraught with high rates of non-response, and do not distinguish by skill level. The best statistics concern production, not people, and show commodity output from firms with more than 50 employees for quarterly surveys, and more than 10 employees for annual surveys (with 80% response).

Table 3.1 also shows that during 1978 to 1987, the share of the labour force employed in construction, during these years of industrial decline, first increased slightly from 7.9% to 8.1% in 1980, and then greatly decreased during the years of industrial decline to 3.9% in 1987. In terms of number of employees (not shown in, but deducible from Närman, 1989) this would mean about 42,000 in 1978 and 27,000 in 1987 - *as compared with the earlier mentioned 1984 forecast of 54,000 for 1986!* It is possible that the numbers are now going up again, but the long term trend has clearly been one of decline during the 1980s.

The striking growth trend is in the Public Services. During these years of economic decline, the number of employees in Services increased from about 140,000 to 260,000 1987 *as compared to (See previous page) 174,000 which was the 1984 forecast for 1986.*

Table 3.1 Wage employment by sector. % various years 1978-87.

Sector	1978	1980	1984	1987
Agriculture	23.0	21.7	17.1	16.7
Mining & quarrying	0.9	1.0	0.8	0.8
Manufacturing	18.7	17.5	18.3	17.7
Water and electricity	4.1	3.2	4.3	4.1
Construction	7.9	8.1	5.4	3.9
Commerce	6.4	6.3	7.4	6.9
Transport and communications	11.0	9.7	9.7	10.1
Finance	1.7	2.3	2.6	2.8
Services	26.3	30.2	34.4	37.0
Total No. (000)	(536)	(603)	(633)	(700)

Source: Table 2.3 in Närman (1989). He used varied sources in compiling this table - for 1978: Bureau of Statistics: Wage Earnings in the Modern Sector 1978-79; 1980: Bureau of Statistics: Economic Survey 1982; for 1984-87: Kimepigwa chapa na mpigachapa wa serikali: Hali ya Uchumi wa Taifa Katika Mwaka 1987 (Bureau of Statistics: Economic Survey 1987).

There has also been a stress on 'white collar/services' within Manufacturing employment, at least into the early 1980s, in that the share non-operational (managerial, administrative) staff in total employment went up from 14 % in 1971 to 20% in 1978, and to 24% in 1983.

The hazards of even very short-term manpower forecasts (from 1984 to 1986) when good data are lacking, are illustrated by figures compared above. Obviously, under such conditions, accurate forecasts of requirements in specific occupations are impossible. As of 1989, neither economic trends, nor estimates of labour market trends, nor present economic policy indicates any short-term quantitative increase in overall demand for industrial labour in Tanzania - when 'skilled' and 'unskilled' are lumped together. What is in demand (as well as 'needed') is quality improvement of those already employed, and better managerial skills (and incentives) to motivate the workforce for improved productivity.

But an economy is never uniformly booming or bleak. As of spring 1989, the then freshly published Industrial Commodities statistics for 1987 (Quarterly Report 1987:2) showed improvement in the index of industrial production during 1987 - two years earlier. It was claimed that construction activity (which has quite elastic demand for labour relative to output) had picked up again. Skilled and semi-skilled labour in the main construction trades seemed to be in demand, so that apprentices in these trades were fairly easily absorbed into the labour force at that time (See Chapter 8.3). A main general principle for vocational training should be the closest possible responsiveness to variety and change in labour market conditions. To identify and respond to changing pockets of demand must be important for modern-sector orientated training in Tanzania today. *When quick reporting of fresh and valid labour market statistics is lacking, it becomes even more important for training providers to follow up 'placement' in industry and keep in touch with former trainees and with industry itself - this is simply the best available early signals of labour market trends. The conditions described above also highlight the need for better labour market statistics. This should be prioritized by those agencies which wish to contribute to the development of vocational training in Tanzania.*

An important question is whether the scale of training should merely respond to effective demand - at best try to respond to short-term forecasts of demand, rather than serving as an important lead factor that can generate its own demand. Inadequate technological capability, managerial capability, and inadequately skilled labour *are* a main problem in Tanzanian industry. Capabilities are improved through training, though the important quality improvement aspect is a slow process. Industry faces other important problems which training cannot solve: scarcity of raw materials and spare parts; inadequate power, water and transport infrastructure; inadequate equipment, wrong plant scale and inappropriate import and capital intensity, and insufficient demand. The combined importance of these other factors constrain the impact that training could have on industrial development and makes a 'supply driven' approach that stakes training out as a lead factor, unrealistic - at least in the short term.⁵

⁵In the long run, human capabilities are of course an important lead factor in development. This is also one reason why a 'supply driven' view of the economic value of vocational training is so tempting. Probably, however, it is those aspects of training which are not occupation-specific but most akin to general education and which pertain to the wider population from which trainees are drawn which have the greatest importance as a broad long-term foundation for economic dynamism: e.g., pride in workmanship, industriousness, and some 'technical literacy' (See the discussion in Chapter 1).

CHAPTER 4

AID AND THE WORK OF OTHER AGENCIES

4.1 The Role of Foreign Aid

In the 1960s, the role of foreign aid in the Tanzanian economy was on the decline. During the 1970s aid grew very rapidly, helping to establish public services and invest in infrastructure. The share of grants in total aid has increased and was about 80% during 1980-85. The Nordic countries have ranked high as donors with Sweden as the largest single contributor. Together the Nordic countries accounted for 28.7% of total foreign aid during 1982-85, followed by the EEC countries and the World Bank/IDA.

During the 1970s, Tanzania encountered much readiness among donors to take seriously the idea that aid should be given on the recipient country's own terms. This was true for Nordic donor agencies. The Tanzanian ideas of a populist kind of socialism, and the high moral tone of Nyerere's self-reliance rhetoric, struck responsive cords in Nordic politicians and aid officials, creating trustful donor policies without contentious conditionalities. Characteristically, the beginnings of Swedish aid to the development of Moshi NVTC occurred within a flexible sector agreement.

It has been argued that the donor agencies must share responsibility for the disappointing economic development of Tanzania, in particular for the failure of the Basic Industries Strategy for industrial development. Collier (1987) notes that donors did not speak with one voice on Tanzanian policy, but that SIDA along with ILO backed policies which failed and that they therefore must share in the responsibility for failure:

At the national level the policies criticized by USAID were endorsed by SIDA... At the international level, the advice given by the World Bank and the IMF Missions were often contradicted by missions from the ILO and the FAO. This diversity of advice flourished in the data vacuum in which much policy advice was formulated...As a result, policy makers could persist in assertions which it is now established were wildly inaccurate...In this climate of ignorance each agency was free to persist with philosophical hobby horses which gradually polarized. SIDA and the ILO were in sympathy with the rhetoric of Tanzanian policy objectives, the Bank and the Fund were not. Advice came to be seen as emanating from these sympathies, and was evaluated accordingly, because it could not be rooted in credible data.

... it seems likely that the trade-aid foreign exchange boom of the late 1970s encouraged policy makers to embark upon a course of action from which it became politically difficult to retreat... the most astonishing feature of the 1980s is that capital imports for the BIS were maintained for so long.

Havnevik *et al.* (1989) similarly observe:

foreign aid was a co-partner in creating the physical and institutional structures and organizational apparatuses which were an integral part of the development of

the crisis. The build-up of industrial production capacity, for instance, could not have materialized without external assistance.

They further write:

In any event, the choice of technologies in aid projects led to increased imports of spare parts and technical assistance personnel in order to keep their operational and for repairs and the training of local personnel. The dramatic shortage of foreign exchange made aid projects completely dependent upon further external assistance. The Tanzanian government could not even cover the recurrent local costs of projects and programmes (p. 4).

When agencies rue wasteful investments, they have reason to take more care in project planning and monitoring; and the case for tighter conditionalities will and should be made.

Aid conditionalities can of course also serve the interest of donors rather than recipients. Skarstein and Wangwe (1986) have described how the source of finance directs the choice of technology towards a specific country or even specific supplier. The latter can occur when suppliers are engaged as consultants. Havnevik *et al.* (1989) write:

Suppliers of machinery seek support from their governments' aid agencies in the search for markets in the developing countries. Tanzania was appropriate for this in the sense that it had ambitious plans for implementing the Basic Industries Strategy... It should be added that to the extent that the Tanzanian authorities expressed any technology preferences at all, they were almost consistently in favour of high technology, without any consideration of how to adapt and assimilate it into the Tanzanian economy (pp 133-134).

Purchase 'at home' through known and trusted suppliers is probably natural also because it is easier. But even when motives are benign, consequences can still be adverse. Especially in programmes involving several donor projects, the result is lack of standardization and added problems of obtaining spares in the future. This also applies to equipment in technical training. It is distrust in the procuring efficiency (and integrity) in a recipient country which makes a donor agency set up its own procuring apparatus. It is thus part of a wider problem, that donors react to bureaucratic inefficiency and to acute shortages in a country by isolating their projects from the country's regular administrative divisions in order to implement them.

*Funds, goods, equipment and services have increasingly become channelled directly from the donor agencies to the development project, by-passing Tanzanian authorities, particularly in the 1980s (Havnevik *et al.* 1989, p 134).*

In Tanzania by the early 1980s, the macro-economic crisis dominated the performance of all sectors and aid projects. "With foreign exchange and many goods only fitfully available, even otherwise viable projects were liable to fail, and management time was diverted into short-term bottleneck problems" (Collier, 1987).

The donor response to these problems have been tighter conditionalities and more 'project isolation'. 'Project isolation' may speed up implementation. Were it not for such isolation, some projects might collapse with the best of effort, for they place demands which severely strain the capacity of public administration. But how long to nurse projects along by a

separate project organization and an expensive and high presence of technical assistance? Project isolation negates the idea that aid should be a government-to-government relation. It also makes Tanzanian takeover of aid more difficult. This difficult dilemma, which is a general one, applies to technical training too. Both within projects and in the government agencies responsible for the programmes concerned, the dilemma highlights the importance of careful selection, systematic training, and better incentive structures in order to strengthen local staff.

4.2 Donor Involvement in Aid to Vocational Training Centres

Rapidly increasing donor support dominates the development expenditures of the National Vocational Training Division. Table 4.1 shows statistics for the 1984/85-1988/89 period. The table shows massive increases, in TSH, in investments during 1986/87-1987/88, and a continued high rate of increase into 1988/89. Except for 1986/87, the bulk has been external funding - but local funding has also increased dramatically and its share of total development expenditure is very considerable, especially in view of Tanzania's acute resource scarcity. However, a factor that needs to be borne in mind is currency devaluations during the period which served to increase dramatically the value in TSH of foreign funds reserved, and to raise the price in local currency of any locally available imported materials (Cf Appendix 9).

The Table shows that heavy recurrent expenditure commitments follow the mainly donor financed development expenditures. Vocational training is known to require much higher staffing ratios than school education. This is in most countries the main reason for high unit costs (Cumming, 1988). But in Tanzania, staffing is not the even the major part of divisional recurrent expenditures. The share that personnel (salary) constitutes of all recurrent expenses incurred by the government is dramatically low at 25-30%. Boarding, materials/consumables, spares etc. must be incredibly expensive if these figures have here been interpreted correctly. Table 7.6 in Chapter 7 gives details of actual recurrent expenditure at one NVTC (Moshi) which similarly shows the relative unimportance of the salary bill within total recurrent expenditures. In absolute value, it is in fact the non-salary component which showed the most dramatic increase during the period examined in the Table. In any further analysis, it would be important to see the foreign exchange requirements of this component, and the impact of currency devaluations on the magnitude of non-salary recurrent cost.

Table 4.1 National Vocational Training Division. Estimates of development expenditure and recurrent expenditure for the whole Division including the Centres. TShs.(000)*

Year	Development expenditures				Recurrent expenditure				
	Local funds	External Funds	Total	% increase	External fund as % of total	Personnel	Total	% Increase	% personnel of total
1984/85	10,529	29,235	39,764		74	11,589	42,357		27
1985/86	10,670	29,703	40,373	+2	74	11,656	36,977	-13	32
1986/87	47,882	37,891	85,773	+112	44	16,187	62,813	+70	25
1987/88	41,000	177,896	218,896	+155	81	25,366	85,617	+36	30
1988/89	89,700	224,250	313,950	+43	71	32,157	105,553	+23	30

*The development expenditure figures for 87/88 and 88/89 are approved estimates. It is not clear whether earlier figures are estimates or actual expenditures. The recurrent expenditure for 1984/85 are actual expenditures. The others are approved estimates. Source: H. Burk, Draft evaluation report on the Chang'ombe National Vocational Training Centre, for Swiss Development Cooperation and Humanitarian Aid. 1989. However, the 1986/87 figures are so far off the pattern before and after in terms of the share which is externally funded, that they are probably incorrect. The 1986 annual report of the NVTD had budgetted a total of 208,600 for that year, 77% of which was to be externally financed. Currency devaluations may be a major reason for this discrepancy. They greatly increased the value in T Shs. of the external funding budgetted during the years when these devaluations occurred.

No breakdowns have so far been made available as to the amount actually received from the present main donors (Sweden, Denmark and Switzerland). Sweden has been the main donor to date. Other donors have been UNDP, Canda, IDA/World Bank, African Development Fund, and Ireland. Some very rough indication of disbursements by the main donors is given by the amounts **budgeted** in 1984/85 and in 1985/86, as shown in Table 4.2. With severe problems of project implementation, these are not necessarily close to the amounts disbursed. An indication of this may be the fact that the total development budgets exceed the estimates of expenses in Table 4.1 very considerably: by some 67% in 1984/85 and 72% in 1985/86.

**Table 4.2 1984/85 and 1985/86 Development Budgets
by Source ('000s)**

Source	1984/85		1985/86	
	Amount	%	Amount	%
Local funds	13,479	20	19,650	28
Denmark	9,240	13	8,802	13
Sweden	19,995	30	28,222	40
Denmark and Sweden jointly			7,796	11
Switzerland			3,000	4
Afric.Dev.B.	5,800	9		
IDA/World B.	18,000	27		
Joint package			2,070	3
Total	66,514		69,540	

Source: 1986 Annual Joint Review of Swedish Support to Education
and Vocational Training. Part II. p.45

The agencies vary greatly in the extent to which technical assistance is part of the negotiated package. SIDA has definitely been the agency which has been most deeply involved with technical assistance, largely because of the nature of the trades developed at Moshi and the problems of replacing Swedish experts in these highly specialist trades with Tanzanians.

According to the 1987/88 annual report, there were 31 foreign experts working in the Division during that year. Of these SIDA accounted for 19. There were 13 at Moshi NVTC, 5 at the Morogoro Instructors Training Centre, and 1 at Arusha NVTC. In addition,

there were 3 Danida experts, 6 Swisscontact experts, and 3 UNDP/ILO experts who by late 1988 were expected to start at Divisional headquarters.

4.3 Swiss Aid

The Swiss Development Cooperation and Humanitarian Aid has been involved for some 10 years at the Chang'ombe National Vocational Training Centre. It is Swisscontact, a foundation established by the Swiss machinist industry, which acts as a trustee and contractor for the Swiss government in this project. The first Agreement was signed in 1978, with three subsequent renewals. It has included support specifically to three sections at that centre: fitter mechanics, truck mechanics, and welding & fabrication. The support has been in the form of equipment & tools, instructors, some training materials and accessories, scholarships for local instructor training, provision of local training of instructors, and provision of training to apprentices within the Swiss supported sections. For its part, the NVTD agreed to supply workshops, training, materials, instructors, and housing for Swiss experts. It has proven difficult for the NVTD to meet these obligations. Problems of delays and shortages are common. The Swiss have therefore provided additional contributions (workshop rehabilitation, training materials, transport).

After handover in 1986 of the fitter mechanics workshop, Swiss aid continues to provide spare parts and tools. The truck mechanics and welding & fabrication sections are still at the developmental stage and under the direct management of the Swiss experts.

The Swiss have equipped workshops in fitter mechanics for very large-scale training. At the same time, their approach has favoured 'long' courses. In fitter mechanics, capacity for 200 trainees was developed (which is equivalent to more than the entire enrolment at Dodoma NVTC and nearly 2/3 of the Moshi enrolment). The intention was to take 100 + 100 in two years. But of the 100 in the first year, some 80+ remained in the second year, so *"we introduced a third year to fill up the gap"*. In the first year, the intake is divided up into groups of 4 groups of 25, each group to have 2 instructors. The trainees do mainly benchwork and make occasional use of special equipment (lathemachines and shaping machines). In the second year, they are divided into two streams: fitter machinists and fitter mechanics. The mode of teaching then comes closer to a station system, because they use a variety of machines and because the trainees have the grounding which enable them to work more on their own. But this is not a system with any high degree of formal 'station organization'. Trainees do not get detailed written instructions; but they work to a drawing and have their own 'operational plan'. Small groups of 4 trainees do these 'station exercises' together.

A very different mode is used in truck mechanics which is based very clearly on work stations. Each each of the 24 station is designed to have its own instructor. To be implemented as originally intended this would require 24 instructors! The origin of this concept lies with a member of a 1979 evaluation mission who had experience of a similar system in Nigeria. The intended capacity of the section is 140 trainees which with 24 instructors would imply an instructor-trainee ratio of less than 1 to 6. Today the real trainee target is 116. After 2 years of progress, 18 instructors are in place teaching a total of 44 trainees. The plan (as of spring 1989) was that 1988/89 should be the year to test out the functioning of the scheme, with the hope of later 'going to scale' within the

workshop. Even if it could be made to operate at full capacity, this seems to be a system with very high recurrent unit costs and with problems in fully utilizing instructor time.

In welding and fabrication, which during 1989 was in its first year, the intended capacity is about 50 trainees.

All these programmes are being developed as 2 year (or even 3 year) courses. The Swiss intended to train their own successors, by taking on instructor trainees to be taught alongside or prior to regular trainees. The initial pattern (from 1985) was to take instructor trainees after 2 years of basic training and then to give them 2 years of instructor training. *In spite of the strong wish to recruit instructor trainees with industrial experience, it has only been possible to recruit a few of these each year.* This echoes experience in many other countries (See Chapter 1), and suggests that it may be unrealistic to demand, with present public pay scales, that instructor trainees at the newly established Morogoro VTTC must have industrial experience. There is a risk of receiving the 'rejects of industry' rather than the competent craftsmen one wishes to recruit as instructors (See also the discussion in Chapters 5.5, 6.3, 9.3.3).

Thus, the Swiss approach has been to develop one section at the time, with desire to train in depth by running courses over 2 years - even informally extending it beyond that to take up slack capacity. The philosophy of Swiss aid is also to train instructors as part of the their own training of trainees. In the words of a Tanzanian official: *"They won't do anything until they have trained the instructors, then they supervise the instructors."* In this way Swiss technical experts are directly involved in initial selection and training of their own successors so that instructor training has become as a form of apprenticeship to a Swiss expert. It could be seen as an alternative to the 'counterpart' model of skill transfer in that the person to be trained is taken on in a clear student role rather than as a junior colleague whose role would overlap with that of the technical assistance expert. It no doubt means that a fuller 'shaping' of the person to be trained is intended, deliberately starting the 'successor' from a status that is unambiguously 'untrained'. A weakness in this scheme was that it is difficult to get instructor trainees of 'the right material'. One 'Swiss view' was that it would be better if one chose trainees rather than instructor trainees first. The trainees would then be taught by a Swiss TAP who would choose 'instructor material' from them, then use the best as assistants for a while, who then would be trained as instructors. This would require long-term presence of TAP staff, but it would very clearly define their role as transferring teaching skills - an area of weakness in Swedish technical assistance at Moshi NVTC (See Chapter 7.6).

Even with the development of the Vocational Teacher Training College at Morogoro, the Swiss experts at Chang'ombe feel that they, and the sections which they have developed, have an important role to play as a future complement to Morogoro, giving instructors more practical skills in the trades whilst Morogoro will provide the pedagogy theory courses. SIDA staff at the VTTC in Morogoro have a different understanding of the scope of the training which *they* are to develop, for they too, see it as an important part of their role to upgrade the workshop skills of instructor trainees. Further, a mainstream view about 'education courses' and 'theory courses' in vocational instructor training is that such courses need to be closely related to workshop application. *There seems to be little professional contact between the TAPs involved in instructor training in the two locations. The respective roles of the VTTC and Chang'ombe should be clarified, and the NVTD should encourage informal contact among all TAPs involved in instructor training.*

At Chang'ombe, a annual intake of up to 50 instructor trainees in one-year courses is envisaged (perhaps coming to Chang'ombe after a year at Morogoro VTTC). At present 20 instructor trainees are enrolled. Clearly, instructor training is an important long-term priority in Swiss assistance to the NVTDC. It is important that this be closely coordinated with the now Swedish supported development at the Vocational Teacher Training College in Morogoro. At present, the links and mutual information among the two projects seem weak.

As of spring 1989, the future intentions of Swiss aid officials was to move on to electrical installation as the next trade to be developed at Chang'ombe.

The Swiss use the conventional 'project' organization. One of the Swiss project staff serves as a Project Manager on top of professional functions in one of the teaching sections. All funds go through the Swiss project manager. Swisscontact does its own procurement and clearing through customs and informs the NVTDC & the Tanzanian treasury about these direct disbursements. Project cars are entirely controlled by the project manager. The project manager has also hired and dealt directly with contractors to finish a job which builders contracted and paid for by the NVTDC were supposed to have completed. The Project Manager has mainly dealt directly with the Director of the NVTDC rather than through the Principal of the NVTC (See also the discussion in Chapter 6.7).

4.4 Irish Aid

Ireland is supporting the development of new District Vocational Training Centre at Mikumi in Kilosa district. In the 20-year plan, the district centres were expected to be more humble institutions than the national ones. But the Kilosa district VTC is going up as a modern and well equipped institution, with a capacity of 200 trainees. It is thus comparable to a fully donor-built national centre (like Dodoma). The project was initiated by an Irish priest who worked in the district and is now part of an Irish-supported integrated rural development programme. Teaching was scheduled to start in September 1989 in motor mechanics, fitter mechanics, and construction trades. The aim is to develop 2-year courses (Most NVTDC courses remain 1-year) and to move towards an instructor-trainee ratio of 1 : 15. The centre is under the Kilosa District Council and has its own board.

The Irish aid-project occurs at some distance from the NVTDC, in that it is a district VTC for which the NVTDC has no operational responsibility, but only a guiding and approving function. The district VTC curricula are not intended to replicate those in the national centres. Kilosa VTC could therefore perform a pioneering curriculum developing role for district centres. Like expatriate experts in similar situation when a new curriculum is to be developed, the Irish expect to draw quite a bit on their home country syllabuses in developing new ones, for submission to NVTDC approval. Even with Tanzanian authorities approving curricula, the result of strong donor-agency influence through the application of 'home country expertise' on different syllabuses (the Swiss at Chang'ombe, the Swedes at Moshi, the Irish at Kilosa, and the Danes at Dodoma) can impede coordination and lead to excessive proliferation of closely related trade variants (See Chapter 2.2.2) and sow confusion among employers about the distinctions between qualifications with similar labels.

One wonders if the District Council has the capacity to operate and professionally support this centre, and to cover the high recurrent expenditures, when the Irish complete their contribution.

4.5 Danish Aid

Danida was approached in 1977 for possible funding of a vocational training centre which would focus on civil construction trades and which would be located in Dodoma, the designated capital in the geographical centre of Tanzania. The location and curriculum concept of the centre were geared to the needs of the development of the new capital. In early 1980 construction started. The ensuing deterioration of the Tanzanian economy meant that progress in building the new capital nearly ceased. As a result, the Dodoma NVTC came to be located in a town with little local work activity to which the teaching could be related. This was especially unfortunate for the approach to training which the Danes had proposed. In keeping with the Danish tradition of apprenticeship, the early concept was to make training as much employment-based as possible, using evening classes as a 'non-formal' supplement and with apprenticeship contracts signed with an employer for the entire duration of the training period. But since the envisaged construction did not materialize, and since construction workers in Dodoma were not so easily recruited into evening classes, the programme was changed to stress centre-based basic training without any initial contract with employers. Evening classes became a secondary activity. The events agree with the general observation that 'non-formal' (or less institutionalized) training is more difficult to develop than 'school-like' institutionalized training with all its shortcomings (Cf. Chapter 1).

In 1985 it was agreed that Danida will continue to finance the Dodoma NVTC for another five year period up to 1991, as a 'consolidation programme'. The trades taught at Dodoma are shown in Table 2.3 (Chapter 2).

The present style of project organization at Dodoma is shown in a plan of operation for the 'consolidation programme 1988-1992, which crisply spells out the project organization and the mutual obligations between the two parties. This includes detailed staffing commitments with job descriptions of senior staff. It also specifies reporting and communication, and details about procurement procedures, control of vehicles, employment and management of Danida advisory personnel, and a very detailed plan of project activities. There is a Project Manager who is clearly responsible for all those tasks which are to be carried out with Danish assistance. He must *"ensure that accepted standards are established and kept for financial control, inventory control, stores control, equipment control, and administrative procedures"*. He controls all Project vehicles. The project manager is the manager of the DANIDA technical assistance staff and responsible for *"all project paid staff."* In addition, he is adviser to the Principal of the Centre in a number of specified ways. He must approve all purchases done with project funds. Purchasing and tendering to contract are handled by DANIDA. Thus there is a very clear 'project' organization with detailed specification of tasks and responsibility. The impression is that Danida has seen a clear need for this formalization. The Director of NVTD also expressed his appreciation of this clarity.

Along with DANIDAs formalism in this agreed plan of operations goes a strong emphasis on promoting morale and good informal relations within the NVTC itself. Particular importance is given to staff development, to a self reliance (production) unit and to the relationship among these two components. The staff development intentions stress openness of information, support for social activities, internal small-scale projects, and staff incentives - in addition to the conventional concern with training and 'sending counterparts on courses'. These ideas reflect internationally influential 'organizational development' concepts. They have an 'organic' notion of efficiency: individual contributions need to be rooted in a supportive 'institutional culture'; and the personal needs of staff are important. Possibly, there is also a 'Danish' line in this: a deliberate reduction of hierarchy and of formality within an institution, and optimism about human relations - in keeping with the 'participatory democracy' ideas which have been strong in Danish school organization since the early 1970s, and with the 'personal development' traditions from Grundtvigian folk high schools.

The Danida staff included in the plan of operations are a project manager, a building maintenance specialist, a metal trades training specialist, and a production training specialist, a road maintenance and a drainlaying training specialist; and volunteers to fill posts of instructor - electrical installation, and instructor - catering services. Characteristically, the inclusion of catering expertise is seen in part as a morale building measure!

The Self Reliance Unit (SRU) is set up as a separate entity, aiming both to promote the welfare of all employees of the NVTC and the Unit, and to help in the training and employment of trainees. The SRU provides an opportunity for NVTC employees to earn extra money on jobs there, alongside employees of the SRU. The surplus of SRU activity is shared so that 25% subsidizes the running cost of the NVTC and about 35% goes to pay bonus, staff schemes, and other incentives.

At present (1989, when the the pay of Danish adviser which comes directly from Danida is not debited the SRU accounts, the SRU is an economic success that greatly boosts the income of instructors at Dodoma. During January 1989-90 the budget was 15-20 Million TSHS, with orders for more than a years work. The aim is to reach TSHS 50 million in 5 years time. The average pay for work contributions to the SRU would be around 25,000 per instructor. For comparison, as of 1.3.1989 the annual pay of an instructor above the average grade (Vocational Industrial Training Officer, Grade II) was about 60-65,000 shillings (See Table 6.1). On top of that would come 35% of the profits to be shared out equally among the staff, in keeping with Danish concepts of cooperative enterprises.

A proposal for further Danida support to vocational training over the next 10 years has been prepared in 1989. It would mean a dramatic increase in the scale of operations. The aim is remedial action and quality improvement in five existing NVTCs (Iringa, Mbeya, Tabora, Kigoma, and Songea) using NVTC Dodoma as a model. It is also proposed to develop a second NVTC in Dar es Salaam. In the Divisional headquarters, the proposal aims at management development of senior staff, establishing effective data and information systems, so as to provide administrative control and improve qualitative inspection and guidance to the Centres. The Project would start with support to NVTD and rehabilitation of Iringa and Mbeya. A Project Steering Unit would be placed at the NVTD. Danida has been requested for services at this unit: planning and design, general management of the project and of construction work carried out under it, establishing a maintenance programme and a staff development programme.

DANIDA Technical Assistance Personnel would be few and concentrated in the NVTD, under the Steering Unit: a project manager, an administration/procurement adviser, a construction design adviser, a maintenance adviser, a staff development adviser, and 2 resident engineers. Volunteers may also be involved.

Dodoma NVTC provides both a model and a resource for the programme. The model emphasizes broad 'craft trades' rather than industrial specialties, with relatively low levels of equipment. Key features are:

- *A maximum of 10 trades*
- *Capacity for 210 full-time trainees, 50% boarding*
- *Afternoon classes for part-timers, esp. secretarial, tailoring*
- *Evening class capacity for 100 trainees*
- *Self Reliance Unit - using the Dodoma SRU as a resource*
- *A preventive maintenance programme financed from SRU income*
- *Staff housing. Good catering matters for morale.*
- *Staff development is more than sending staff on courses.*
- *What happens in the NVTC is crucial for morale*

Initially, the proposal is costed at 159 million DKR over a period of 10 years.

4.6 ILO/UNDP Aid

The ILO has, with UNDP finance, been involved earlier in Technical Assistance to NVTD. At present another project is underway that is based in the NVTD headquarters. The aim of the project is to develop effective apprenticeship training in industry, both for Vocational Training Centre graduates and indentured learners, and to strengthen the NVTDs own capacity for developing, monitoring and evaluating apprenticeship programmes.

Three experts have been recruited for an initial period of 18 months each, with contracts started in late 1988 early 89: one expert in mechanical trades, one in civil engineering trades, and one in electrical incl. airconditioning & refrigeration.

The goals include:

- *Completed, detailed and adaptable on-the-job training programmes for all regular NVTC courses related to the experts' areas of expertise.*
- *Details of the off-the-job training necessary to complement the apprenticeship training (presumably 'evening classes').*
- *An up-dated record system in respect of apprenticeship/indentured learner training.*

In addition the project provides familiarization visits/training activities for top management of NVTD and longer courses for selected headquarters staff and for VTC in-plant training officers.

These goals are clearly of great importance. But, equally, the planned inputs proposed are bound to be inadequate. Longer-term efforts, closely coordinated with the contributions of other agencies, will be needed to realize this most difficult of all task laid down by the Vocational Training Act.

4.7 Other Possible Donor Involvement

It is possible that other donors might wish to be involved in support to NVTCs, through integrated regional development plans, or other regional or district-based projects - rather than supporting district centres which would have much weaker management and other support systems than what the NVTD can provide. Contacts have occurred between the NVTD and FINNIDA about possible assistance to Mtwara and Lindi NVTCs. The Italian aid agency was some time ago approached about support to Morogoro NVTC. As of 1990, NORAD has indirectly, at least, become involved by its past support for a fisheries training centre which has been transferred to the NVTD.

4.8 Cooperation among Donors

It could seem expedient for government agency in 'recipient countries' to play different donors out against each other, or at least to discourage direct contact among them, in order to maximize its own room for manoeuvre. In the present Tanzanian situation of acute resource scarcity and with donors no longer queuing up to develop projects, this would not seem to promote Tanzanian interests, even with stronger management capacity in the NVTD. Or so the NVTD seems to have realized. Since 1988 the NVTD itself has taken the initiative to establish regular meetings among agencies under its own leadership. Thereby, contacts among agencies also become more visible and 'above board' to the NVTD (See also Chapter 9.3.10). Regular donor conferences are held. More frequent 'thematic' Project managers meeting have been scheduled, with such themes as maintenance (Oct. 88), staff development (March 89).

The proposed DANIDA project is of strategic importance for the NVTD. It is intended to serve as a general model for development and rehabilitation of other centres and would place some DANIDA technical assistance persons in the Project Unit at NVTD headquarters. SIDA's involvement as a major donor, and its ongoing support to instructor training and rehabilitation of centres overlap with key themes in the Danish project (staff development, quality improvement in existing centres) as a 'system wide' concern. It is therefore extremely important that not only through NVTD, but directly between SIDA and DANIDA staff at all levels, there be close coordination so as to complement each others contributions and avoid a sense of rivalry. *In particular, the modalities of staff development and quality improvement will need ongoing discussion*, both in formal meetings and through informal contacts, among all parties directly concerned with the system as a whole, or in each institution.

4.9 Danish and Swedish Modalities Compared

The two agencies have cooperated before (See Chapter 5.2). Cultural similarity favours close relations between the Nordic aid agencies. What nonetheless could lead to

misunderstanding is quite different home systems of vocational training, which can give Danish and Swedish training experts respectively, different ideas of 'best practice' and of what is workable. Like the Swiss, the Danish system is a branch of the 'German' apprenticeship model (See Chapter 1) and is biased towards craft training. The Swedish model is school-based and biased towards industrial trades. To risk a vague stereotype: The Danish view of a trade is 'wholistic' whilst the the Swedish view is 'analytical'. For example, training 'blocks' or modules and a station system with self-instructional materials are expressions of the industrial 'Swedish' logic of training (See also Chapter 7.2.2). Conversely, a 'Danish' approach would be to adapt the scheduling of training to a naturally occurring production process that produces a complete 'craft' product (building a structure, producing furniture). This latter training approach is conceptually very compatible with a Self Reliance Unit with products or services for sale. The instructor is then in the same role as the master craftsman and his apprentices. Swedes focus more on industrial trades and probably also have a more industrial approach to crafts (e.g. furniture production). Then, training and production need to be kept more apart. For example, factory-like mass production of IKEA-furniture parts would not be the best venue for training which needs to progress through a well-defined series of steps and cover a wide range of techniques and materials.

4.10 Summary and Conclusion

The context in which Swedish aid to vocational training operates, is one of great scarcity of statistics about employment trends and labour market conditions. Officially, the NVTD is in the midst of implementing a long-term plan; but this plan was based on mistaken assumptions concerning the labour market. The forecasts which have been attempted, to guide training policy, merely illustrate the hazards of manpower planning. The condition of the economy has undermined the Tanzanian 'manpower supply approach' to the relationship between training and industrial development. *At least in the industrial trades, there is no reason to believe that Tanzania today is much short of training capacity as far as the total quantitative output is concerned, and compared to effective demand.* Quality of training needs to be improved and training links with industry must be strengthened. But donor agencies should resist the pressure to treat training as an opportunity to be equitably and widely distributed throughout the country. The complex logistics requirements of training, the high expense, and the fact that it can only touch a small minority in any case, all argue for treating training strictly as a investment in economic development of the country.

Several agencies are now rendering assistance to the NVTD and its training centres. A major new initiative was in 1989 taken by DANIDA. There is much need for coordination of these contributions. The NVTD has now itself helped institutionalize direct contact among the donors. In particular, *there is a need for SIDA to liaise closely with Swisscontact about instructor training and with DANIDA about staff development and rehabilitation of existing centres.*

CHAPTER 5

SWEDISH AID TO VOCATIONAL TRAINING

5.1 Aims, Modalities and Scale

The general aims of Swedish development assistance in any country are economic growth, equity, and democratic participation - with a strong concern for improving the conditions of life of the poorest groups. With Tanzanian economic decline in the 1980s, aid has increasingly sought to maintain and increase production. SIDA has wished to back the economic recovery programme with its emphasis on regenerating economic growth. Thus, as of 1987 2/3 of total Swedish grants was aid to industry and import support. The percentage going to the 'social sector' (education, health) has declined. Nonetheless, there remains strong support for education and training - along with forestry, conservation and health. A further priority which is important for SIDA internationally, is integration of women and girls into sector programmes. In vocational training this means *i.a.*, more girls in training for traditionally 'male' trades, and support for 'soft trades' as tailoring and secretarial skills. *But within the 'traditionally male trades' it seems that efficiency and equity considerations conflict* (See Chapter 2.2.1, 7.7.1.3, and 8.3.2).

Tanzania is a country with which Sweden has sector support agreements. This mode of development assistance gives flexibility for annual reallocation of resources among projects within the sector, within an agreement period. Sector agreements show willingness to support the whole sector rather than only isolated projects. This kind of broad commitment presupposes that government policy for the sector meets with general approval from the donor. The concept of sector support means that SIDA seeks to operate through established channels of *programme* implementation, and to strengthen these channels - rather than setting up separate project implementation units.

It is this general donor strategy which increasingly has come under pressure in Tanzania. Inefficiency in Tanzanian public administration has caused donors to assume more administrative responsibility for project implementation. A key issue is how to increase support without increasing the number of projects or adding to the burden on Tanzanian administrative resources. One strategy is to increase concentration in sector programmes by reducing the number of projects, and closer cooperation with other donors.

Currency devaluations have dramatically increased the value in TSHS of the amounts in SEK covered by the aid agreements. In March 1979, the rate of exchange rate between SEK and TSHS was 2 : 1, going up to 16 : 1 in 1988 and further to 20 : 1 in 1989, and 31 : 1 in 1990¹ (See Appendix 9). Within Swedish aid projects one effect has been further to dramatize the enormous gap in the standard of living between technical assistance personnel and Tanzanian officials (See Chapter 7.6).

Table 5.1 shows the scale of Swedish support to the NVTD system from 1978, in Swedish currency. Up through 1987/88 a cumulative amount of SEK 144.4 million had been spent

¹Hard foreign exchange still remained undervalued in 1989. According to Lovén's (1989) personal investigation, US Dollar was paid a premium of 83% on the Dar es Salaam black market in March 1989. The 1990 devaluation may have wiped this margin out.

on assistance to the various programmes of the National Vocational Training Division (or more than 200 million at 1989 purchasing power of SEK). It is envisaged that by the end of the present agreement the cumulative amount will have reached 211 million (or 268 million in 1989 equivalent SEK).

**Table 5.1 Swedish Support to the NVTB System,
1978/79-1990/91. (SEK Mn.)**

Budget Year	Expenditure		Present Value	
	Annual (1)	Cumulative (4)	Annual (3)	Cumulative (4)
(disbursements)				
1978/79	0.5	0.5	1.1	1.1
1979/80	3.9	4.4	7.7	8.8
1980/81	12.0	16.4	21.5	30.3
1981/82	19.9	36.6	32.8	63.1
1982/83	27.4	63.7	41.3	63.7
1983/84	15.6	79.3	21.7	126.1
1984/85	11.3	90.6	14.6	140.7
1985/86	18.4	107.0	19.8	160.5
1986/87	17.7	124.7	20.2	180.7
1987/88	19.7	144.4	21.2	201.9
(planned disbursements)				
1988/89	18.9	163.3	18.9	220.8
1989/90	23.2	186.5	23.2	244.0
1990/91	24.9	211.4	24.9	268.9

The table is supplied by Trevor Coombe. His sources are actual expenditures from SIDA Stockholm document KW/uk dated 1987/88-11-03. Planned disbursement figures (1988/89-1990/91) are from DCO, Swedish Embassy, Dar es Salaam: Planning Review Tanzania, document dated 1989-05-19. Present value figures (SEK in 'Sweden', not in TSHS equivalent) have been derived from col. 1 using factors calculated by Lovén (1989), Appendix D.

Swedish support has been a very high proportion of the development budget of NVTB. For example, during the 1985/86-87/88 Agreement, Swedish support was then 65% of the development budget for NVTB. Adult education and primary education were the other areas of education sector support. The total education sector support to Tanzania was one of the largest programmes of the SIDA's education division, and the Swedish grant was the largest that Tanzania received for education and training from any country.

In the current 3-year Agreement (July 1988 - June 1991) SEK 76 million is budgeted for support to vocational training. The agreement takes note of Tanzanian objectives for the 1987/88-1991/92 five plan for vocational training: improvement of quality training through rehabilitation of existing institutions and development of prolonged training programmes, development of vocational training staff, and an increase in capacity through e.g. use of rehabilitated buildings available in the regions. The overall objectives of Swedish support is to reinforce the improvements planned in the existing vocational training programmes,

measures taken to better utilize existing facilities, and mechanisms for closer adaptation of training to the needs of industry. The specifics of the Sector Agreement are:

- a. *Funds for NVTD will be used to strengthen its planning, implementation and control capacity, for minor support to other vocational training institutions than Moshi NVTC in the Kilimanjaro region, for support to rural vocational training centres and for correspondence courses in vocational areas.*
- b. *Funds for the Vocational Teacher Training College at Morogoro will mainly be used for employing Swedish experts and procuring equipment. In addition, the centre will use its available resources for establishing and running a further Training Unit and for giving advice to surrounding industries and training institutions.*
- c. *Funds for Moshi NVTC will mainly be used for employing Swedish experts and procuring equipment. In addition, the Centre will use its available resources for training advice to surrounding institutions and training institutions.*
- d. *Funds for rehabilitation of Vocational Training Centres will mainly be used for procurement of equipment, organisation of workshops and training programmes for staff.*
- e. *Funds have tentatively been allocated for consolidation of some training programmes at Arusha VTC, for shifting the printing trade to Dar es Salaam from Tanga, and for creation of a 'building brigade'.*

Over the years, Swedish aid has ranged across a number of projects in vocational training. The project of largest scale has been the development of Moshi VTC. However, in keeping with the Sector Agreement concept, SIDA has all along also wanted to strengthen the entire system, and the planning & management capacity of NVTD headquarters.

5.2 Support for NVTD headquarters operations

NVTD requested technical assistance from SIDA and Danida in order to strengthen the work of NVTD headquarters, following up recommendations in a 1982 SIDA/DANIDA financed review (Ministry of Labour and Social Welfare, 1982). Selection of TAPs was done in early 1984 in cooperation with the Director of Vocational Training. As preparation for the arrival of technical assistance experts, four Tanzanians attended the Advanced Course in Planning and Management - Technical Education and Vocational Training, at the University of London Institute of Education. In October 1984, a seminar was organized at Arusha for NVTD staff and their recently arrived Swedish and Danish advisers.

DANIDA and SIDA sponsored 4 and 3 experts respectively. They arrived in June 1984 and left in July 1986. *Thus, there were about 14 work-years in this TAP project.*

Two DANIDA experts worked on trades-testing - a general test construction psychologist and a metal trades expert. Another DANIDA expert worked on inspection. The fourth expert worked on guidance and selection.

SIDA sponsored two curriculum developers who worked respectively on theory subjects and

trade subjects, and one education planner who was intended as the coordinator of the whole technical assistance project.

The educational planner arrived without any clearly defined tasks. Together with his counterpart and two planning officers, he drew up a number of plans for the rehabilitation of centres. Mwanza, Tanga and Arusha VTCs are cases in which these plans have been further developed and implemented.

The 2 work-years of technical assistance to NVTD's inspection function produced routines (checklists etc) intended for use during inspection visits to the many training centres outside of the Ministry of Labour. *But the effect of this planned system has been minimal since NVTD lacks resources to carry out such inspections.* In general, NVTD's ability to assume responsibility for 'extension work' in non-NVTD institutions has been very limited. This is not only a question of resources, but also of bureaucratic barriers which stand in the way of transferring any resources needed to carry out recommendations made by an NVTD-based inspector, to an institution which comes under another Government ministry.

In the area of guidance and selection, a system was established whereby each NVTC would have a guidance officer. Pilot work was also done on direct testing of applicants. A lasting result was that admission to NVTCs became linked to secondary school selection in the regions, rather than all applications coming directly to the NVTD.

In curriculum area, there is lasting impact. Every five years syllabuses are supposed to be revised. There is an intended process for production and revision, involving Training Committees. There had been a complete lull in such activity since 1980. Activity picked up as a result of technical assistance. The Training Committees were reactivated, and by the end of the technical assistance period, the Committees were scrutinizing for approval or amendments proposals which the experts and their counterparts had produced.

The ambition of the curriculum development experts had been to test out draft syllabuses in some schools, to liaise with workshop rehabilitation, and initiate activities in teacher upgrading and teaching materials. This ambition was not realized. But together with their counterparts, they did some initial compilation of old syllabuses, some classroom observations and interviews with teachers at the Dar es Salaam NVTC next door. A standard format for syllabus writing was worked out, along with a General Curriculum Part to go with each syllabus. They took initiatives to get Training Committees reestablished.

By the time they left, they and their counterparts had with the help of members of Trade Committees and colleagues at Moshi, produced syllabuses for those VTC trades and general subjects which are listed below; those which have been approved by the concerned Training Committees are highlighted:

Motor Vehicle Mechanics, Autobody Repair, Diesel Engine Mechanics, Truck Mechanics, Carpentry & Joinery, Mechanical Draughting, Machinery Fitting, Machine Tool Repair, Foundry, Pattern Making, Blacksmith, Welding, Instrument Mechanics, Electrical Installation, Industrial Electronics, Industrial Electricity, Refrigeration and Air-conditioning, Shoe Making, Printing Trades, Mathematics, Engineering Science, English and Kiswahili.

A syllabus for the 85 weeks Vocational Teacher Training Course had also been produced as well as two syllabuses for company training programmes. Other trade syllabuses have

also been produced and approved since then: *Tool & Die Making, Pulp & Paper Technology, Tailoring, Shoe Making*. Thus the Swedish TAPs at NVTD contributed to many of the syllabuses which now exist at least in draft form.

Opinions vary about the quality of the syllabuses. *One complaint is that they are standardized on a level of equipment which is too high for other centres than Moshi*. It is also true that Moshi trades received special attention by the Swedish curriculum experts. It was agreed at the 1985 Sector Review that all draft syllabuses at Moshi NVTC would be revised by June, 1986. Official Tanzanian policy has been that NVTC training should be geared to industry's needs - leaving rurally oriented training to other institutions. This may also have served as a rationale for a distinctly high technological level which may not be possible in other centres than Moshi at the moment. In the words of one of the Swedish TAPs himself: *"Without machinery, skilled staff, necessary spares and appropriate routines for training, the syllabus prescriptions will not have much impact on what goes on"*.

A complaint at the NVTD about the Swedish TAPs was that they came in with preconceived ideas of change and showed no respect for the old syllabuses. Their local counterparts may have felt undervalued: *"Previously, there were old syllabuses. It would have been better if they had used old syllabuses as starting points. There was no training for Tanzanians who were to write syllabuses with the expats...On-the-job training was not enough. The Tanzanians should have had prior training."*

Very little was achieved by the 4 work-years on trades-testing. Some courses were run were run for those who should construct tests, and attempts were made to standardize administrative routines. The hope had been that the test psychologist would be able to construct trades tests in cooperation with craftsmen. The NVTD verdict is that this did not work. In view of the problems NVTD has had in running the trades testing system adequately, this is especially regrettable.

Overall, this 14-work-year investment in technical assistance was a disappointment. The project was fraught with conflict between the TAPs and NVTD, and also to some extent internally among the TAPs. Some of experts were greatly dissatisfied with the advance planning and support received from DANIDA and SIDA, let alone the NVTD. They had arrived at a time when the NVTD had its own problems of 'settling in', having just moved into a building which was still under construction. The experts started their work without typewriters, photocopying facilities or office supplies. *"In the beginning, the offices had no windows, there was no water and no toilet. Wind blowing and rain pouring in, sun burning those sitting close to the window openings"*. It took a year to sort this out. The job descriptions lacked clarity. Clear rules were lacking about control of the 3 vehicles which were supplied for use by 7 experts. It is clear that not all TAPs had the needed competence. At the same time, the scale of technical assistance was probably too large. NVTD officials may have felt overwhelmed and at least some resented the foreigners coming in 'to take over'.

The experts seem to have felt that NVTD was not ready to receive technical assistance of the kind given, and that the administrative style of the Director was too autocratic. A criticism of the project by the Director is that the TAPs wanted to interfere into areas beyond their proper role and that they wanted to 'scrap everything'. The organizational structure was unclear. The SIDA-recruited education planner was intended to be a coordinator for the SIDA/DANIDA group, but he arrived 6-9 months after the others (in

February 1985), and the very idea of having a coordinator then met with resistance from some of his Danish colleagues. The joint involvement of two donor agencies must have made it more difficult to sort out this problem. It also became clear that the Director of the NVTD wanted to deal directly with the experts individually rather than as a group. By so doing he may have contained the experts from 'interfering beyond their role', but it must also have weakened the involvement of counterparts who, unlike their foreign advisers, were supposed to report to the Director only through superiors.

Some efforts were made to clarify the structure within which the experts were working, by formalizing the tasks. At the 1985 Sector Review with SIDA, it was agreed that a workplan covering the next half year should be worked out by the different sections of NVTD once every three months. Once approved by the Director, these workplans would then form the basis for the work of the advisers. Various allocations were then made to back up the work of the advisers with needed resources.

The consensus is that the benefit of this very costly technical assistance did not match the expense. It was decided not to extend it as a large-scale joint project. The lasting effects are: the plans for rehabilitation of existing VTCs; the system of admitting trainees through linking up with regional admission to secondary schools; and revised syllabuses with equipment lists and workshop layouts in a number of trades - though syllabus revision which had little interaction with VTC practice (apart from the 'Moshi trades') and without follow-up work, will have little impact. There has been some internal follow-up of this project within the donor agencies, but no full-scale joint evaluation of this TAP project has not been conducted. One gets the impression that this project strained the relations among the parties concerned to the extent that it may have been felt that a public full-scale evaluation would merely rake over the embers and be counterproductive. It can now be but a minor part of the present Evaluation which has a much wider scope. Years have passed and it would have been timeconsuming to trace down and interview all the TAPs.

SIDA sought to continue assistance to the NVTD on a smaller scale. In 1986/87 it was unsuccessfully attempted to recruit a another curriculum development officer. By 1988, the efforts to recruit such an expert were given up. Instead, it was then proposed to try out short-term consultants who would work at NVTD at regular intervals.

An educational planner was recruited for 1987-1989. This TAP contribution has not gone well either, though the parties concerned may differ in their views about the quality of work and the tensions which arose between the planner and the NVTD. During last part of his contract, the 'solution' was to reassign him to work, with Moshi as a base, on plans for NVTD extension work in the Kilimanjaro region. It was agreed at the SIDA-NVTD Sector Review in 1988 that the first stage of the plan was to conduct a needs analysis of training institutions for which the NVTD does not have operational responsibility, with a view to possible support from SIDA. The expert was however later directed by the NVTD, without prior consultations with SIDA, to stop the needs analysis, and instead go ahead and plan certain work at sites designated by the Director of NVTD.

Evidently, it has been difficult to achieve effective TAP contributions within NVTD headquarters. The achievements do not measure up to the expense incurred. There is a need to plan such technical assistance especially carefully, with clear job descriptions that set out well-defined tasks and clear lines of responsibility, and backup on time with needed resources. These jobs are difficult. With the best of care, those recruited will not always measure up to the requirements for such sensitive and influential work. There is a definite

shortage of persons who would have the needed competence, drive and the skills at personal relations which work at NVTD headquarters evidently requires. It is clear TAPs will also be more readily accepted - or at least put up with - when their presence is part of a package-deal that brings other wanted resources (e.g. vehicles). It also seems that joint operational involvement of donor agencies in a single project, even when they have very close and friendly relations, present additional problems of coordination, when tensions occur (e.g., lack of basic supplies, tensions with the NVTD Director and internal tensions among the TAPs).

At present, NVTD headquarters is receiving technical assistance from the ILO/UNDP in the areas of inplant training and trades testing, and there is a proposed DANIDA project to back up Danish assistance to VTCs with TAPs in a steering unit within the NVTD (See Chapter 4.5).

5.3 Development of Moshi NVTC

The major Swedish financed investment in vocational training, development of the Moshi NVTC, originated as a new project idea within a ongoing sector support to education. The profile of that sector support stressed literacy, primary school, rural needs etc. But NVTDs idea of a centre at Moshi had right from the beginning a distinctly industrial orientation.

5.3.1 Cost Analysis

Table 5.2 shows the annual and cumulative value of Swedish support to Moshi NVTC over the years, with budgeted spending for the years 1988/89-1994/95.

A quick comparison of Table 5.2 with Table 5.1, above, shows that Moshi has been the main object of Swedish assistance to the NVTD. By 1987/88 the cumulative funding of Moshi had been SEK 106 million out of a total of 144 million since 1978/89 - more than 2/3 of the flow. It is also evident that during the present Agreement the relative importance of Moshi as an object of aid is declining, and that the phasing out has begun. For example, for 1990/91 the budgeted amount to Moshi is 8 million which is about 1/3 of the total Swedish support to NVTD that year of 24.9 million.

The Swedish 1988/89 support of SEK 11.9 million was roughly equivalent to TSHS 240 million. The technical assistance component was more than the equivalent of SHS 180 million. For comparison, the local recurrent expenditures for the centre in 1988/89 were about TSHS 15.5 million, according to figures compiled by Trevor Coombe for the Evaluation. Of that amount, about 4.1 million was salaries and allowances, an amount exceeded by expenditures on water, electricity and gas' at about 4.5 million and catering services of 4.3 million (Cf Table 7.6 in Chapter 7). Thus, Moshi NVTC is a system where local staffing costs are vastly overshadowed by other local recurrent expenditures, over which hugely towers the cost of foreign technical assistance.

Viewed purely as development expenditure, the assistance to Moshi will by 1991 have amounted to (in 1989 SEK equivalents) about 197.9 million to develop a total of 348 trainee places, or about SEK 570,000 for each trainee place. Since only about 70% of trainee place capacity is utilized after some 6 years of operation, the amount per utilized trainee place would be more than 800,000. These staggering amounts would today (1990)

need to be multiplied by a factor of 31 to give the equivalent in Tanzanian currency. We are thus looking at a massively intensive development investment. A very large part of this has been technical assistance (See Chapter 7.6).

As in so many projects, the expenditures have outstripped initial project plans. A reasonable comparison is difficult to make in view of drastic currency devaluations and the long period lapsed. The 1977 Project Documents estimated total capital and recurrent costs during a five year development period of about TSHS 40 million - about SEK 80 million at the now 'very old' exchange rate of 2 TSHS to the SEK, or 8 million at the 1989 exchange rate.

In addition to the amounts shown in Table 5.2, considerable expenses have also been incurred in financing training abroad for Tanzanian staff earmarked for Moshi posts. These expenditures are not included in the Table - nor, of course, would overheads for SIDA's operation and support services.

**Table 5.2 Swedish Support to Moshi NVTC, 1978/79-1994/95.
(SEK Mn.)**

Budget Year	Actual Expenditure		Present Value	
	Annual	Cumulative	Annual	Cumulative
	(1)	(4)	(3)	(4)
1978/79	0.7	0.7	1.5	1.5
1979/80	5.2	5.9	10.3	11.8
1980/81	8.3	14.2	14.9	26.7
1981/82	18.4	32.6	30.3	57.8
1982/83	25.8	58.4	38.9	95.9
1983/84	13.7	72.1	19.0	114.9
1984/85	9.7	81.8	12.5	127.4
1985/86	8.5	90.3	10.3	137.7
1986/87	8.2	98.5	9.3	147.0
1987/88	7.9	106.4	8.5	155.5
1988/89	<u>11.9</u> 1.75 constr. 9.10 pers. 1.05 equip.	118.3	11.9	167.4
1989/90	<u>9.3</u> 0.4 constr. 7.9 pers. 1.0 equip.	137.6	9.3	176.7
1990/91	<u>8.0</u> 0.2 constr. 7.0 pers. 0.75 equip.	135.6	8.0	184.7

The table has been adapted for the Evaluation by Trevor Coombe from Lovén (1989:15), who cites 'Minutes from SIDA' as his source. The breakdown in col. 1 for 1988/89-1990/91 is not Lovén's but is taken from Annual Joint Review of Vocational Training Sector Support, Sept.- Oct. 1988.

SEK present values (in Sweden) in col. 3 (as of 1989) are derived from col. 1 using present value factors calculated by Lovén (1989), Appendix D.

Coombe points out that the support to Moshi NVTC shown in col. 1, for the first two years exceeds the total Swedish support to the NVTD as reported in Table 5.1. Some error is therefore likely in the figures for those two years.

5.3.2 Project Planning

Following a preliminary discussion at 1976 annual sector review, the NVTD conducted a feasibility study in 1977 on constructing an additional Vocational Training Centre at Moshi. The study assessed the shortage of skilled workers with special reference to the

'Northern zone', reviewed existing training facilities, and examined rural and industrial development projects with a view to recommending the type of trades and number of trainees.

The declared starting point of the study were the Industrial Development Plan and the Rural Development Plans at the time, and the manpower projections in the 1975 manpower review to the President. Thus, one input to the analysis was estimates of skills shortages up to 1980 by 62 (*sic.*!) occupational categories, along with lists of output from existing training establishments. By comparing these series of figures, the study concluded that there was a definite shortage of skilled workers relative to requirements and existing training capacity. Low skill of those already in employment and the need for training foremen were other major conclusions.

The feasibility study had dealt with rural needs and village skills, but choice of trades for Moshi was unrelated to his long standing SIDA concern. There was no considered rationale for the trades - only the claim that the recommendation was based on a careful consideration of the data presented. But no further documentation is now available to show any penetrating discussion of such data. The choice was steered by a desire to cover skills in which no previous training existed. The trades proposed were industry related, most of them were more specialized than what was already on offer elsewhere: foundry/blacksmith, fitter mechanics, electrical fitter, mechanical draughting, tool making, electronic equipment fitter, wood machinist, instrument mechanics, refrigeration and air-conditioning, boilermen, marine diesel engine mechanics (though Moshi is an inland location!) and foreman training. The approach favoured specialties at relatively high skill levels, rather than broader trades which could have served as foundation for subsequent specialized skills during on-the-job training.

In 1977, project plans followed. These were prepared by the Director of NVTD, and a group of SIDA officials and consultants. Early concerns, which still remain important problems, included: the need to standardize equipment in VTCs regardless of donor and location, integration between centres and industry, and the need for instructor training. Tanzanian plans for industrial expansion were noted, and the special emphasis in the industrial strategy on establishment of metal industries and the making of production machinery and spare parts. Training manpower to achieve these objectives was seen to be of strategic importance. *Evidently, the trades chosen for Moshi were specifically geared to serve the needs of the Basic Industries Strategy which had been launched in 1974.*

In the Moshi proposal, it is stressed that *"close contact with the surrounding vocational environment and the industry should be typical for this institution"*. The mission recommended measures to promote such integration with industry, for VTCs in general and a Moshi NVTC in particular. Some of these 1977 wishes have long had a familiar (and unfulfilled) ring in Tanzania and other countries:

Special courses like evening courses, sandwich courses, day-release courses for those working in the industries should be given in the centres.

Provision in the centres for employing part-time teachers from the industries.

Teachers should be given opportunity to gain practical experience in the industries.

Institutions should be allowed to organize special courses to meet local needs.

Chapters 6,7 and 8 show that apart from evening classes, these recommendations have not been implemented yet.

There was a very clear policy of working within the Tanzanian system. Technical Assistance Personnel should work within the Tanzanian organisational structure without a coordinating project manager; and as much as possible of the design, final drawings and compilation of tender documents should be done at the Project Planning Section, Ministry of Education.

The proposal recommended these technical assistance components: a Buildings Construction Engineer on a 3-year contract, working under the NVTD to supervise the construction of the VTC; an Education Methods Adviser on a 3 year contract to work with the Principal designate of the new Centre; 11 technical education teachers and a Teacher in Education for a foreman training programme which should be established at Moshi VTC (2-year contracts). It was clearly intended that the externally recruited should initially be utilized in staff development programmes, and that the Teacher in Education should be responsible for that programme. *"To be able to nationalize these posts as soon as possible the technical education teachers and the instructors who are Tanzanians shall work in close cooperation in the workshops."*

The only proposed locally recruited reinforcement at NVTD headquarters was a proposed Purchase Officer.

It was further proposed that a study be conducted on a second technical teacher training institute as a second phase of construction, and that equipment at Tanga and Mwanza VTC be studied, with a view to building up the same equipment facilities at all vocational training centres under the Division.

Finally, it was proposed to undertake a sector study of vocational and technical education in cooperation with other donors.

The planned capacity of Moshi NVTC was to turn out 320 skilled workers and 100 foremen a year. The trades to be taught closely followed the recommendations of the NVTD feasibility study, without any further discussion in the Project Document: Mechanical Draughtsmen, Blacksmith General, Tool & Die Maker, Machinery Fitter, Refrigeration and Airconditioning, Precision Instrument Maker and Repairer, Diesel Engine Repairer, Wood-Working Machinery Mechanic, Electrical Fitter, Electronics Fitter, "Boiler Firemen", and training of production supervisors and foremen.

The concept of Moshi was rooted in the manpower planning and industrial development ideas which prevailed in Tanzania in the late 1970s. As noted in Chapter 3, the macro-economic assumptions behind the industrialization policy have not been borne out, and there are - as discussed in Chapter 8 - the inevitable problems in connecting highly specialized institutional training up with relevant work later on; and these problems tend to be exacerbated when industry is stagnant. The level of ambition in this concept is indicated by the fact that in one of the Moshi trades - Foundry, school-based training is very limited in Sweden itself, and there is only a handful of instructors in Sweden from whom technical assistance staff to Tanzania can be recruited.

5.3.3 Evolution of the Moshi NVTC Curriculum

Early modifications of plans occurred in 1978 when it was decided that Moshi NVTC should use the Swedish practice of station system training in most of the workshops, in order to obtain *"higher utilization rate of the equipment, a decreased need of the amount of equipment, a lesser need of space and a more intensive and individual training of the trainees."* But it was also noted that this is a demanding and sophisticated teaching system in that it puts great *"strain on the teachers in preparing workshop manuals and instruction sheets"*.

It was decided in 1978 to add Foundry and Pattern making as additional trades. Expatriates were employed short-term during 1979-80 in order to work out syllabuses in cooperation with the NVTD in Tool & Die Making, Machine Tool Mechanics, Heating and Ventilation Fitting (later: Pipe Fitting and Boiler Mechanics), Foundry and Pattern making, Instrument Mechanics and Supervisors and Foremen training, and equipment lists were being worked out with tenders invited in September 1980 for a number of trades.

In 1983, it was noted at the annual sector review that one year of basic training at the VTCs would not give enough skill so that trainees could function with little or no supervision during their in-plant training. The NVTD therefore wanted to prolong basic training in the centres with another year in some trades, mainly in mechanical and electrical fields. A pattern emerged at Moshi whereby in most trades some students would continue to a second year. By 1988 NVTD had committed itself to extend basic training to two years as a general rule throughout its entire system. It was agreed, however, that the question of Swedish funding for such general extension would not be brought up until the next Agreement. SIDA has been cool on this idea, because of high unit cost implications.

The original concept of Moshi was to establish industry oriented trades in which there was no previous training. Many of the trades are thus 'highly specialized' in the sense of preparing for quite small specialties. There are inevitable implementation problems in this concept, e.g., shortage of local instructors creating long-term demand for expensive expatriate experts in the workshops (Cf Chapter 7.6), problems in finding and recruiting trainees with the right kind of background for these courses (e.g., for Tool & Die Making, see Chapter 7.1.1), and in some Sections dependence on costly imported consumables.

5.3.4 Constructing the Facilities

Following the 1977 plan of operations and architects brief, detailed drawings and tender documents for the centre were prepared by a consulting firm in 1978 and 1979. The initial plans to use the Ministry of Education Project Planning Section were apparently dropped. In October 1979, M/S United Builders were awarded the contract for building the centre in Moshi. Construction started in December 1979 with 130 weeks building time agreed. A Resident Engineer was attached to the Project in January 1979.

By 1980, it had become clear that a shortage of construction materials would delay the starting up of the centre. It became necessary to import directly for Moshi cement, chip board, glass, paint, sanitary ware and electrical materials.

At the same time, additional buildings were planned: an additional building for Foundry and Pattern Making, an additional building for Electronics workshop and two general classrooms, an additional store for consumable materials, two additional dormitories for trainees, and twenty 2-bedroom staff houses. The plan was then that during 1982/83 Moshi NVTC would be ready to start up activities, with staff in place and equipment and materials ready in completed facilities. By 1982, the expectation was that construction Moshi NVTC would be completed by July 1983, but would start admitting trainees by the beginning of 1983. By April 1983, the foremen/supervisor course commenced; and by October the training started with an enrolment of 190 students. Further work was required by short term consultants to finalize electrical installation and the Heating and Ventilation workshop. The last buildings at the main site were handed over in January 1984.

The Project Co-ordinator had been the Director of Buildings, Ministry of Works, which had used M/S United Builders (based in Dar es Salaam) as the main contractor. The work was defective. A consultant (TISCO) was hired to look into the quality of construction work. Its report concluded that there were a number of errors and deficiencies and that the *"project suffers from poor workmanship, use of low quality materials and bad construction methods and was also obviously poorly supervised during the construction period."* There was a need both for rectification work and for a maintenance team to do some urgent repair work. It took time before rectification could be taken care of. At the 1985 Sector Review, it was noted that the contractor had withdrawn from the main contract without any claim on retention money, and that SIDA had signed contract with a Swedish contractor, HIFAB, to complete rectification.

Various other needs arose for supplementary construction after handover. There was a need for a retention wall to divert flood water (there was a flood in 1984 and again later on several occasions). SEK 800,000 were set aside for building such a wall at the 1988 Annual Review. Other needs were bitumenization of roads in the centre, a sports ground, boreholes for a better water supply, street lighting and landscaping the staff housing area, improvement of staff houses occupied by Swedes, and more houses for Tanzanian staff. SIDA funds were initially set aside through the centre development fund for this purpose.

In 1985 it was agreed that a separate building fund be established to be operated jointly by a SIDA recruited maintenance expert and the school administration. This fund was set up to cover costs in connection with the rectification work done in the main site as well as renovation and extension of staff houses. In the autumn of 1988 this fund was closed, following tensions between SIDA and NVTD. Since informal contacts were then not good (Cf Section 5.7.3, below), it was agreed to use official Tanzanian procedures though this would mean delays in release of funds. SEK 800,000 was set aside as a final contribution to staff house construction. The NVTD had already engaged a local contractor to build these houses. He was chosen by the NVTD from among a small number of local contractors who had been invited to submit bids. The tendering had not been advertised. *SIDA pointedly included a passage in the 1988 Annual Review minutes, to the effect that SIDA must examine and approve any proposed building programme and contract before it can enter into any financial obligation.*

Thus, some construction activity has continued long after the main centre was finished. Throughout, local contractors have been used for all buildings. In many if not all cases, rectification work has been needed, and then usually by another contractor (sometimes an international contractor, sometimes by the maintenance team established at the centre).

Throughout, the management of these unforeseen extra jobs has been a heavy burden on the normal channels, both in the NVTD headquarters, the management of Moshi VTC, and in the Development Cooperation Office of SIDA in Dar es Salaam. Ordering further equipment, spares, consumables and getting such consignments out of the harbours has been further timeconsuming complications. No doubt, project implementation would have been easier, if the project throughout had had its own project manager with clearly defined responsibility and authority implementing all aspects of Swedish assistance to Moshi.

5.3.5 Equipment

Equipment arrived during 1982/83. It was noted at the 1982 Sector Review that some of the equipment had been unpacked and that some handtools of inferior quality had been delivered, and that *machinery had not been "standardized as requested for easier maintenance"*. When training started in 1983, and most equipment was in place, an emergency fund was set up at the school for quick replacement of parts. It became apparent in 1983 that replacement of equipment and procuring of spare parts with SIDA funding was a timeconsuming process, both at the DCO/SIDA in Dar es Salaam and the Purchase Division in Stockholm to which requests were routed, forcing the Programme Officer in DCO/Dar es Salaam to take on the kind of work which a project manager would have been responsible for, if one had been appointed. It was proposed that requests should be accumulated to be dealt with on an annual basis and that a contract be signed with a trading company in Sweden to take care of the emergency needs of Moshi NVTC.

It became apparent very early that Boiler Mechanics was prohibitively expensive to run. This was the last trade to be equipped and started up after considerable extra attention and change from an earlier 'heating and ventilation' concept. In 1985 it was agreed that 'considering the high cost of running the boiler and turbine in the Boiler Mechanics workshop steps should be taken to dispose of the boiler. It was decided already in 1985 to set aside SEK 100,000 for a consultancy concerning the selling of the boiler/turbine and working out of alternative boiler equipment. Installation work, which had not been completed, in the meantime continued nonetheless. When the boiler/generator was commissioned in January 1986, it was found that the turbine could not be used as it had been mounted, because it was positioned too low relative to condensing unit. In the meantime too, the desire to sell the boiler/generator was reaffirmed! It was also then discovered that a serious mistake had been made in the positioning of the machines. Efforts to sell the boiler were by 1987 given up - after having brought a consultant in to investigate alternatives. (The consultant suggested that rather, the scope of training programme be widened to include technicians and engineers - without any consideration of the practicalities of so doing). The boiler/turbine remains there to date. The 1988 Annual Review indicates that the recommendation to "*allow new categories to be trained at the premises was accepted*". But the practicalities of doing this remain doubtful and as of 1990 no action has been taken.

The machinery in the Foundry workshop had by 1986 still not been test run. Finally, in 1986/87 the first trial run was made on the cupola furnace (really a production furnace, not a training furnace) and the foundry equipment connected to it. As of spring 1989, a smaller furnace was used for training purposes. There was a mismatch between the different parts of the plant, making it difficult to use its full capacity.

Thus in two trades (Boiler Mechanics and Foundry), it is clear that very expensive mistakes were made in the initial provision of equipment.

5.3.6 Staff

Well before construction was completed, education experts recruited by SIDA arrived. From September 1981, the Teacher in Education arrived and started working in Moshi with a Tanzanian counterpart to prepare for the supervisor/foreman training courses. The Tanzanian principal had been stationed in Moshi since December 1981 with his Education Methods Adviser who also spent time in Sweden recruiting Swedish teachers for the project. By September 1982, 12 out of 13 Swedish teachers had been recruited. Seven of them were working in Moshi, only three of them with a Tanzanian teacher. It was in October 1982 expected that all Swedish staff would be in place by March 1983. By October 1983 all expatriate staff were in Moshi except one. But only few very of the expatriate staff were interested in prolonging their contracts. Dissatisfaction with housing and inadequate availability of fuel for vacation travel were noted as reasons. Since then, amenities and conditions have very much been improved, and the current (1989) impression is that expatriate staff at Moshi are quite content to remain there. The number of SIDA experts at Moshi reached 15 by 1985 and 16 by 1986.

Nineteen Tanzanians were training in England and Sweden during 1981/82 as preparation for their posting to Moshi. It was during the 1982 Sector Review noted that not all of those who had returned had joined the staff at Moshi but been posted elsewhere to meet NVTDS pressing need for staff in other postings. In general, SIDA expressed some dissatisfaction with the working of the fellowship programme. It was emphasized that Tanzanians should be part of the team that decides workshop layout, installs equipment, and prepares instructional materials. More emphasis was to be put on staff development based in Tanzania.

Of the 29 posts for Tanzanian teachers in the workshops 26 were filled in September 1986. Of seven posts in related subjects, five were filled. Of 14 posts as workshop attendants, 10 were filled.

Throughout there has been concern with and support for NVTDS staff development efforts, not only in the form of financing participation in courses but also emphasis on the staff development responsibility of Technical Assistance Personnel working as advisers at NVTDS (See Section 5.2) and at Moshi. In 1979/80 three Tanzanians were sent on a five-week course at ILOs Turin Centre. 16 candidates had been sent to different colleges in Britain for courses ranging from 1/2 year to 3 years. Yet, in some of the new Moshi trades, no Tanzanians had been sent for training by 1980. This was accorded high priority for SIDA's support to NVTDS staff development.

In 1980, it was agreed that SIDA in cooperation with DANIDA should recruit technical assistance to strengthen the NVTDS (See Section 5.2). It took years before this project developed. A strategy for strengthening the NVTDS was drawn up by a consultancy group led by Sven Brandt in 1982 (Ministry of Labour and Social Welfare, 1982). The 1982 Sector Review paid particular attention to the needs for staff development throughout the NVTDS training system, and SIDA expressed serious concern about the capacity of NVTDS to manage its increasing workload. Plans for SIDA/DANIDA technical assistance to NVTDS headquarters were made, and SIDA declared that "When the Vocational Training Centre in

Moshi is fully established and has started its training activities in 1983, the main efforts in the cooperation in the field of vocational training between Sweden and Tanzanian will be to strengthen the NVTDC. This in order to get a good basis for a consolidation of on-going activities and for a future expansion of the facilities."

In the 1985 Sector Review it was agreed that a comprehensive staff development plan be developed for Moshi NVTC, and that the bulk of the training be done at the centre. Apparently, no such plan had been developed before, apart from training prior to deployment at Moshi. As of spring 1989, the planning of staff development at Moshi was still in its early stage! *It is clear that staff development has been with few exceptions confined to informal day to day interaction between Swedish experts and local instructors, dependent on the personal qualities and skills on both sides, and lacking in systematic assessment of what Tanzanians need in order to be self-sufficient in the workshops.*

Perhaps staff development has been so slow to get off the ground in any deliberately organized fashion because of differences in perception as to degree of need, and the ambiguous role relations between 'expert' and 'counterpart' (See Chapter 7.6). It is the Swedish experts who are most likely to see themselves as still indispensable, not trusting the Tanzanian section heads to be able to take over. But the Swedes are trained as instructors of trainees and are highly skilled in their trade - they are not trained and experienced in organizing training in a systematic way for a counterpart with whom they have a vague colleague-trainee relationship. And, the Swedish experts have no vested interest in making themselves redundant. It is clear that Moshi NVTC as of 1989 has become as attractive place for Swedes to work. Tanzanians, for their part, may well resent the formalization of professional inferiority vis-à-vis the Swedes, which more direct tutelage under the Swedes would entail. *Staff development requires a strong direction from institutional management, with time to think strategically rather than being absorbed in daily routine. So far, this has been lacking at Moshi.* One of the explanations is that the 'daily routine' with added demands of continued construction, equipment and consumable needs, is so complex that it has deflected management from strategic planning and from using the centre as an out-reach institution to aid other training provisions in the area (See Section 5.3.9, below).

5.3.7 Starting Up of Training, Capacity Utilization and Selecting Trainees

Training foremen started as a crash programme with SIDA support before Moshi could be used as a venue. Short instructor trainer courses were held in 1980, 1981; and a total of 11 courses for production supervisors were held in various locations during 1980/81 - enrolling a total of 238 courses. During 1981/82 six courses for production supervisors and a follow-up course for instructor trainers were run. SIDA noted at the 1982 sector review that *a substantial part of the Swedish contribution to the programme must have been used for other purposes than agreed upon.* The remaining funds were then transferred to the Moshi programme, and cash for the 'crash programme' ceased.

In April 1983 foremen/supervisor courses started with Moshi as the base, to replace the crash programme. The activity was greatly scaled down: during 1983/84 only one foreman courses with 14 participants was run, and a centre management course with 12 participants. In the following years, foreman training remained a marginal activity at Moshi. During 1985/86, for example, there were two four-week courses for production supervisors with a total of 38 participants. *Thus, this type of training, with its envisaged*

close contact between Moshi NVTC and local industry, which was important in the concept behind the Centre, has dwindled and disappeared.

Teaching in 10 trades started up in October 1983 with an intake of 192 trainees. The remaining 3 trades started in January 1984 with a total 40 trainees. It took time before capacity was adequately utilized. During 1984-85, the enrolment was 239 out of a total of 328 available trainee places. By 1987 it had risen to 319 trainees as compared with 348 places. A recurring problem appears to be to fill some of the courses with special entry requirements (See Chapter 7.1).

In 1985, concern was noted in the annual sector review that the centre had an enrolment of 239 trainees but a total of 328 available trainee places. Changes in selection procedures were then recommended so that more students would be called for the initial phase of training, with the possibility of postponing final selection of students some weeks into the training programme, when one would know how many actually turn up. It was also then agreed to introduce a second shift in Machinery Fitting, and to start admitting annually (rather than biannually) to the Mechanical Draughting course. In 1986, enrolment was up to 293 out of the 348 places then available. Especially in Tool & Die Making the enrolment was low with only 7 out of the 16 first year training places filled. In 1987, enrolment was up to 319 (with the same capacity). In Tool & Die making, 20 out of 32 available places were used. As of July 1988, the enrolment had risen to 237 out of the 348 places available (68%).

In 1986, it was noted that one of the reasons why Tool & Die Making and Machinery Tool Repair had problems filling their classes was the high entrance requirements. A trade test grade II in Machinery Fitting was initially required. This was a barrier because prospective trainees would *"rather turn to paid employment instead of joining further training which is not automatically raising their salary."* Therefore, trainees with basic Machinery Fitter training was allowed to enter, in order to fill these trades. This points to a dilemma in selection policy to these advanced courses. The intended target population were really by Tanzanian standards quite well qualified skilled workers who were likely to have reached Grade II after some years of paid employment. *It has proven very difficult to entice such persons back into full-time training and a into a humble trainee role, in a location that would be far away from their homes and, in the case of some, their own families too.*

It would seem that advanced training really requires paid sponsorship by industry, not only to ensure that a relevant job is available after training, but also to recruit people with the right prior qualifications.

The Swedish experts at Moshi have throughout found the incoming trainees to have insufficient grounding in English, Mathematics and Science. The 1987 Sector Review suggested a special 2-3 month preparatory course, and offered a Swedish training specialist to work out course material. It is natural that Swedish advisor-teachers, with little or no command of Swahili, will perceive this need more strongly than will Tanzanians who in any event, even when the medium of instruction is supposed to be English, can move in and out of Swahili during teaching and to whom the trainees' English is also likely to be more familiar. Dependence on English is increased to the extent that a real station system is followed, with its intended extensive use of self-instructional materials in English. In fact, *the trainees' poor command of English could be one reason why the station system is likely to be at risk once Swedish advisers no longer are main professional influence on daily basis in the workshops.*

From drawing-board plans (1977) to start-up in 1983/84, it took some 7 years. This is very long. In any expansion plan for the system of NVTCs, such slow implementation is a very severe constraint. It is another argument for not expanding the system to new sites, but rather to develop existing sites further (but these still need to be 'suitably located') with gradual expansion of training. (Cfr. Chapter 2.3). The capacity of Moshi (348 regular trainee places) has remained seriously underutilized. In 1988, 4 years after start-up, it had reached only 68%. The drop-out during training is not the reason, for that is quite low throughout the system: about 7% (Cf. Table 2.1). *The problem lies in the selection system and the problems of finding trainees who meet the requirements of the specialist trades at Moshi.*

5.3.8 Support for Recurrent Expenditures

The 1983 Sector Agreement specifically notes the shortage of foreign exchange to by training materials - NVTD has no 'forex' available to buy the material and equipment which cannot be found locally, and by 1983 needed materials and consumables were virtually non-existent in the country. It became increasingly clear that needed running expenditures were outstripping local recurrent budgets. At Moshi NVTC, a centre development fund was established by SIDA in 1983 mainly for establishing and developing the workshops further -to be operated jointly by the principal and the Swedish adviser, and with a separate account. This was to be used for procuring materials and consumables in the local market so that a quick purchase is necessary during their fitful availability. In addition to replacement of parts, for which a separate emergency fund was also established in 1983, it was agreed that future purchase requirements of consumable materials from abroad should be compiled once a year and discussed at the annual sector reviews.

In 1985, SEK 750,000 were set aside for tools, spareparts and consumables (to include freight). In 1986, the reserved amount was SEK 700,000, and in 1987 SEK 650,000. In 1988, the amount reserved was SEK 500,000. Similar support for recurrent expenditures at Mwanza and Tanga started in 1983. SIDA was prepared to fund procurement of consumable materials up to a maximum of SEK 100,000 subject to approval of a list of requirements. In 1988, SEK 100,000 was set aside for consumables at Tanga, and 400,000 for Mwanza (includes also electrical installation materials). Further, SEK 250,000 was allocated for duplicating/printing etc. at NVTD headquarters. Thus, the 1988 Sector agreement reserved some SEK 1 million for these clearly recurrent expenditures (other amounts might of course also be thought of as 'recurrent').

For comparison, the total 1987/88 non-personnel recurrent expenditures for the entire NVTD system, both headquarters and centres, was TSH 60.3 million (Cf Table 4.1) or roughly SEK 3.5 million (at the 1989 exchange rate). The 1988/89 the recurrent non-personnel budget was TSH 73.4 million (about SEK 4.3 million).² Thus, whether one only considers contributions to Moshi or total Swedish contributions to recurrent expenditures, it is very clear that *the importance of Swedish (and other foreign) contributions to the non-personnel expenditure is very great.* And it is striking how the bulk of total recurrent expenditures in the system in fact is for non-salary purposes.

²It is unclear whether the Swedish contributions to recurrent expenditure are included in the figures in Table 4.1.

Thus, a pattern is now established for the donor assisted centres whereby bilateral donor agencies involve themselves in importing materials, tools and spareparts which cannot be bought locally. Officially, it is claimed that sufficient local funds have been allocated locally, and that the problem is lack of foreign exchange. In fact, however, Moshi VTC is a development project which remains dependent on external finance of much of its recurrent expenditures, some 4-5 years after it started training.

5.3.9 Informal Sector Support and Extension Work

Throughout there has been concern with 'informal acquisition of skills' (eg. in 1980 Sector Review) and with extension work to assist training at centres outside the NVTD system, for which the NVTD has a general supervisory responsibility. Tanzanian studies on informal sector skill acquisition presented findings in 1980. They noted that most company training did not follow any syllabus, and recommended that the NVTD involve itself more with such training, to formulate syllabi for informal sector training, to ensure stronger cooperation with industries in providing facilities for evening classes, and to mount short courses for skilled workers who could supervise apprentices. In 1982, it was recommended that a pilot project be established in the Kilimanjaro Region using the Moshi VTC as basis for both instructor upgrading and facilities improvement for other training institutions in the Region (outside of the NVTD), and that NVTD should draw up plans for such extension work.

At the 1983 Sector Review it was agreed that as a pilot extension activity, Moshi VTC should engage in assisting the nearby Mission vocational training centre at Leguruki, and SEK 200,000 were set aside for such activity. Moshi VTC should work out a plan for new extension activity. In 1985, satisfaction was noted with the Legoruki activity, and SEK 100,000 were set aside for 1985/86, pending plans to be worked out, and using Moshi NVTC as executing agency. It was agreed that a needs assessment of the requirements of existing vocational training institutions within the region be conducted and that a plan of action be prepared and submitted to SIDA at least one month before the 1986 Sector Review - showing SIDA's keenness both to reach 'non-formal' training for 'the informal sector' and its concern lest the very great outlays at Moshi should totally lack such a connection. In 1986, still awaiting any plans, the amount of SEK 100,000 still remained unused. It was again agreed that a needs assessment and a plan of action be prepared one month before the next review. Some purchases of handtools were made in 1986/87 but had by the 1987 Sector Review not been distributed as the *"parties involved have not reached agreement concerning the distribution"*. Finally, by the 1988 review it was reported that the *"three sets of handtools within the building trades purchased in 1986/87 have finally been distributed."* The tools stood in Moshi for three years, because of the problem of *"giving money accross Ministries"*.

The repeated calls from SIDA for a survey of needs have been futile. The most recent attempt was at the 1988 Sector Review. The idea of using Moshi NVTC as a planning agency was given up. Rather, NVTD headquarters was now to plan extension activities for the Moshi VTC environs, and Moshi VTC should itself become merely the executive agency. As of spring 1989, this had not been implemented. The Swedish planner was directed by NVTD, without prior consultation with DCO, to cease work on the needs analysis and instead to do other tasks (See Section 5.2, above). It is said that a new Minister had intervened, and that the Regional Education Officer (Ministry of Education)

felt the needs analysis to be undue interference from another Ministry - especially when a foreigner on contract from a donor agency was involved.

Looking back, the Director of NVTD seems to believe that extension services at Moshi, for other training centres, is not a viable concept. It is not good for a centre to have so many roles and Moshi VTC is not in a good position to advise on construction skills - which are the main training activity of smaller non-NVTD centres in the region. Whilst SIDA right from the earliest plans consistently has pushed for a wide concept of Moshi VTC's role - as a nucleus in a network of activity that also would include the informal sector, NVTD has had a more delimited concept and been reluctant to extend the role of Moshi into system-wide operations which should be carried out by officials based at NVTD headquarters (support for non-NVTD institutions) or by instructor trainers now to be based either at Morogoro or working directly on the local site (foreman courses, in-service courses for instructors at Tanga and Mwanza VTCs).

Parallel with efforts to use Moshi as a base for extension work, the hope in the 1983 sector review had been that by improving the capacity of the NVTD for producing national curricula in vocational skills training and through inspection and trade testing, the division could probably slowly expand its professional advice and supervision in such institutions as TAPA-schools, mission trade-schools and Post Primary Technical Training Centres, helping to improve curriculum standards in these institutions. As noted in Section 5.2, a number of centres were visited as part of the support to the inspection function at NVTD headquarters during 1984-86. But follow-up has been wanting.

Looking back, it is clear that SIDA has all along shown strong willingness to use Moshi VTC as a base for extension work in support of weaker training institutions in the region. It has repeatedly made funds available and asked for needs analysis and plans. This strategy - which was originally part of the very concept of Moshi and probably helped to make that concept 'saleable' to SIDA in the beginning - has failed. A total revision of approach is needed if SIDA wishes to make effective support available to such institutions. One clear lesson is that in such administrative systems as NVTD which has great problems developing and servicing its own institutions in the intended way, it is simply unrealistic to expect that it will reach out, through its wider inspection and registration function, to also give material assistance to institutions for which the NVTD has no operational responsibility. Worse than that, if the NVTD takes the task seriously and does plan material contributions to other centres, lines can easily get crossed with the Ministry of Education. Using Moshi as a base for extension support to other centres within the NVTD system is an entirely different and much more feasible matter (See Section 5.4, below).

5.3.10 Consultants and Courses

In 1984, a course in quality control and metrology was held in 1984 for 11 participants, organized by SWEDEC International AB. SWEDEC also held a course in Maintenance of Machinery. The 1985 Sector review agreed a number of consultancies: 2 persons for planning of production work, one for planning routines for materials procurement, handling and storing, one on the organization of Science laboratories, and one in connection with the special problems of the boiler Mechanics Workshop. Apart from the consultancy on planning production work, the others were not utilized, but there was renewed interest in them in 1986, and another consultancy was agreed on administration and management

routines in connection with introducing production. Two consultants also visited Moshi in 1987 to give advise on the feasibility of establishing a further training unit at there.

In 1987, another SEK 100,000 consultancy was set aside for a further visit by the consultant on materials management. The 1988 Sector Review notes that the *"consultant on materials management has continued his task to re-organize the main store and introduce proper storage facilities and an inventory system at the centre"*. Another SEK 250,000 was set aside to complete the work during 1988/89. In 1987, SEK 250,000 had also been set aside for a consultancy that would work out course material for a stores management course to be held at Moshi. By 1988, a proposal had been worked out by a Swedish company (ZENIT) to prepare course materials basically along the proposed lines. The Sector Review states that the *"consultant shall work closely with VTTC, Morogoro."* SEK 450,000 was then set aside for this activity in 1988/89.

It is clear that a great deal of money has been spent on consultants at Moshi. One wonders if alternative activities would have made better use of development aid resources than these short term contributions. It could be that some of the tasks which consultants have done could have been handled locally by some of the Swedish experts already there. With such high frequency of consulting visits (and also the burden they inevitably place on the institution itself), a questionmark is appropriate.

5.4 Rehabilitation of Other Centres

Notwithstanding earlier interest in supporting rehabilitation of other centres, by 1980 SIDA was following a cautious line in spreading its support beyond building Moshi VTC which was falling behind schedule, and strengthening NVTD headquarters. Support for developing a centre in Arusha with emphasis on agricultural mechanics was put on the backburner, pending plans for the Third Development Phase of NVTD. Involvement in rehabilitation at Tanga and Mwanza was then also ruled out on the grounds that *"these centres have been constructed and equipped in cooperation with other donors"* (which was IDA).

In 1983, however, SIDA started its involvement with rehabilitation of Tanga and Mwanza, making available funds for consumable materials, and using Moshi NVTC which then had opened as a base for assistance. Moshi-based Swedish teachers were to make an assessment of requirements for rehabilitation of two trades in Tanga: handtools, storage facilities, in-service training, and purchase of a small vehicle for Tanga VTC. During 1984, the rehabilitation activity started. In Tanga, the construction of machinery fitter and automotive workshops was nearly completed. Expatriate and Tanzanian instructors at Moshi were to prepare the layout, and would prepare a staff development plan for the instructors at Tanga. Plans were then underway to introduce a pipe-fitting course at Mwanza. Plans for both centres were to involve the SIDA recruited planning expert then at NVTD (See section 5.2). Since autumn 1987, a Swedish expert based at Moshi has been coordinating the rehabilitation of Tanga and Mwanza.

The work at Tanga and Mwanza seems to have progressed well in the eyes of both SIDA as well as NVTD. The rehabilitation of the two centres has included renovation or purchase of machinery, improvements in workshop lay-outs, installing the equipment and in-service training of the concerned Tanzanian instructors. There have been the inevitable delays before ordered equipment has arrived and cleared through the harbour. There have also

been delays in the agreed Tanzanian preparatory work, on the sites, which has been required before Swedish contributions could begin. But using staff already based at Moshi and engaged in other work, for the rehabilitation work has made it possible to deploy their work time flexibly, to take account of such delays. An impediment to implementation was that it took NVTD *five* (sic.!) months to approve the travel programme of the rehabilitation team - another example of NVTD's inability to expedite within a reasonable time what ought to be fairly routine administrative business (See Chapter 6.7). The prior existence of the Moshi project made it possible to recruit into the rehabilitation work two Swedes who have had long Tanzanian experience with locally tested and known strong capabilities. On the other hand, using staff who had been previously rooted in the now rather pleasant 'Swedish camp' at Moshi made it difficult for NVTD to ensure that they would spend enough time on the rehabilitation sites themselves. They have preferred to work out of the Moshi compound as far as possible (e.g., with in-service courses for Tanga instructors), and to delegate much of the site-based work to Tanzanians. The effectively working delegation is here admirable. But one would think it could have been combined with on-site presence of the TAPs for staff development work with the VTC instructors concerned, rather than relying so fully on Moshi NVTC as an 'in-service' base.

A team of Tanzanian instructors/in-plant trainees from Moshi has been doing much of the physical rehabilitation work. Other work involving Tanzanian and Swedish staff (especially from Blacksmith, Electrical and Machine Tool Repair) based at Moshi was being planned in 1988 and carried out during 1989. New posts (filled with the Swedes who had been involved earlier) were then specifically advertised as rehabilitation experts with clearer directives as to 'work station'.

Following earlier plans, it was in 1987 agreed to recruit an expert in Agricultural machinery Mechanics for the Arusha NVTC, and to purchase some equipment for the development of that subject at Arusha. The expert arrived in 1988 and started working but without any plan of operations. As of spring 1989, the plan had not yet been finalized. It was learned in 1990 that SIDA has now withdrawn from this project, on the grounds that the location is unsuitably remote. But the location had not changed from the time when SIDA initially decided to get involved - suggesting insufficient project planning for this activity.

5.5 Instructor Training

An Instructor Training Unit was established through assistance from CIDA at Chang'ombe in 1973. There was a one-year course until 1979 when it was extended to 18 months. The ITU also ran various shorter courses (See also Chapter 2.2.4). This activity has in recent years continued as part of the Swiss support to Dar es Salaam NVTC (see Chapter 4). A grant for establishing a permanent Instructor Training Centre in Morogoro was secured through the 6th IDA Education Projects (1978). By 1982, construction had started and it was expected that the centre should be operational by 1985. However, construction work remained at a stand-still for some two years due to i.a. lack of certain materials. By 1985, steps had been taken to procure materials to complete the buildings, and September 1986 was reckoned to be the earliest handover date. In September 1986, however, the contractor had been given until the beginning of 1987 to finish the contract.

SIDA was asked in 1982 to assist in starting up activities at the Morogoro Centre. The Sector Review then recommended that a planner be made available to NVTD, on a short

term basis, to draw up plans for emergency training of instructors and their trainees, before the Morogoro Instructor Training Centre could come on stream. In 1983, it was again agreed that a detailed plan of operation should be presented to SIDA before a final decision by SIDA on support to the Centre. A short term consultant to the NVTD produced a report in 1983: Proposal on Technical and Vocational Teacher Education and Management Training 1984/85-1990/91. In 1985, it was agreed that the planning adviser then at NVTD (See section 5.2) would prepare layouts for the workshops at the Morogoro Instructor Training Centre, and that recruitment of 5 instructor training experts be started when building materials for the completion of works were on site. In 1986 it was agreed to start recruitment in Sweden to five posts: the Head and four teachers in Methodology. By the 1987 Sector Review, two experts had arrived and four had been recruited.

A special study had been carried out in 1983 by a consultant to assess the need for instructor training (Proposal on Technical and Vocational Teacher Education and Management Training 1984/85). This report has since then provided documentation of the need for increased scale of instructor training.

Well into the decline of industrial productivity in Tanzania (1983), the report was uncritically accepting of the estimates of future manpower requirements which dated from the late 1970s, and concluded that trainees from a greatly expanded training system would have no difficulties finding employment. The rationale of the Morogoro concept was rooted in the 20 Year Plan for Vocational Training (See Chapter 2.3.1), and the realism of the scale of planned expansion was not questioned. Thus, the projected demand for new instructors - estimates which underlie the Morogoro plan - are closely tied to the 20-year-plan (which is critically discussed in Ch. 2). The report projects for 1984/85-1990/91 a need to train some 1,200 vocational teachers, and additionally some other administrators and staff (p.20). *But the rate of expansion has in fact been slow; and there is therefore a serious risk of underutilization of capacity at the Morogoro Centre.*

In 1984, a strong case was made in the Sector Review report for expanded instructor training capacity - no doubt based on the special study. It was argued that the demand for training of vocational teachers is clearly higher than what can possibly be supplied from the Instructors Training Unit at Chang'ombe.

Yet, in 1989 when the Morogoro course came on stream, there were great problems in finding enough releasable instructor trainees.

It is always essential to have good trainers of instructors. This is even more obvious when a new institution, like the Instructor Trainers Centre at Morogoro, in order to fully utilize its training capacity, needs to recruit instructor trainees from institutions which are not under its own Ministry. It is therefore absolute crucial that the Morogoro Vocational Teachers College as it is now called, develops a good reputation. In the 1984 consultancy report, a point of criticism of the old ITU programme was that it lacked status and suffered from lack of due weight and recognition by other ministries, parastatals and private organisations. In general, the old provisions lacked minimally adequate quality. The programme then - as allegedly now at Morogoro too - suffered from lack of incentives, e.g. that the instructor trainees' future job entry grade after training was unpredictable, causing trainees to drop out of the course. There was then - and is clearly now too - an acute lack of competent instructor trainers. It is very rightly a main goal for Swedish future assistance to vocational training in Tanzania, this is also of obvious importance. *It is in teacher training, not in developing a training centre, that there is a clear justification for*

large scale presence over a long period of highly competent technical assistance.

SIDA has throughout the years of Moshi's operation showed concern to retain some of the very best trainees for further training, beyond the normal trade courses at Moshi. Thus, at the 1985 Sector Review, it was agreed that a few trainees should be taken on, after basic training, for special training or production work in the workshops. At least informally, the 'Swedish line' has all along has been that these could subsequently be trained as instructors. But whilst NVTD has gone along with extended training for a few trainees (they now often function as workshop auxiliaries), the NVTD view has been that instructor trainees should have industrial experience first. The problem however, is that very few enter instructor training with industrial experience, even when efforts are made (as in the Swiss-financed project at Chang'ombe NVTC. See Chapter 4.3).

5.6 Unimplemented Proposals

5.6.1 Mbeya NVTC

Further work was to be done on NVTD proposals (1979) for building a another new NVTC in Mbeya. A feasibility study was presented proposing training related to mining, agromechanics, and plant maintenance. No technical assistance was requested in the initial proposal for developing teaching at this centre. By 1980, an action plan was drawn up which was to prepare for tender award by 1982/83. In 1981, it was decided that Swedish aid funds should be used mainly to consolidate on-going programmes, due to severe financial constraints in Tanzania; and construction of Mbeya was postponed to a later date. In 1982, it was jointly agreed at the Sector Review that expansion of the vocational training programme could not then include new institutions with such high running costs as the proposed centre in Mbeya.

Swedish assistance had also been requested for developing NVTCs at Lindi and Tabora. The 1982 Sector Review recommended that discussions on support to these centres be postponed until more detailed planning had been done, and it was suggested that such detailed planning could be done under the proposed SIDA/DANIDA technical assistance to NVTD headquarters. In general, SIDA wanted then to tie proposals for new development cooperation programmes to technical assistance to NVTD, probably also hoping that this link would make the NVTD more strongly welcoming of such technical assistance. This also applied to SIDA support for the Morogoro Vocational Teacher Training College (See Section 5.5, above).

5.6.2 Vocational Training for Disabled Persons

It was stressed early on from SIDA's side that one should look into the possibility of recruiting disabled persons to training at Moshi NVTC (1978, 1979). A recurring intention stated in sector reviews was that there must be close cooperation between the vocational rehabilitation programme for the disabled, and the NVTD so as to make common use of workshop facilities, instructors and services. Early plans for SIDA supported development of Mbeya also made reference to including disabled trainees. A six-month pilot project in Tanga was started in May 1981 by a Swedish expert, selecting disabled persons for refresher courses in their trade areas for vocational resettlement. The expert

fell ill and could not continue his work. Further technical assistance was proposed, but *"it was not any more feasible to recruit a new person to this pilot scheme."* In 1983, it was agreed at the Sector Review that *"as NORAD was engaged in a similar activity, SIDA support to this programme should be discontinued"*.

It is likely that vocational training for disabled persons is an area in which, like special efforts to recruit girls into 'male' trades, efficiency goals conflict with social justice concerns. On the one hand, the high unit cost in vocational training and the need to maximize the chances of putting skills acquired into optimal productive use, meeting effective demand in the labour market - on the other: Swedish and Tanzanian desire to help disadvantaged groups. Thus, SIDA has special funds available for promotion of women's training especially in male dominated occupations.

5.6.3 Mobile Training

A mobile training unit was looked into (following a request in 1978). After an initial plan prepared by a SIDA consultant (1979), SIDA commissioned a further study about international experience with such units, whilst the NVTD should examine more closely the need for such training in rural areas. A 1981 report on the international experience (ILO, UNICEF and others); concluded that such units tended to have disappointing performance. The idea was shelved.

5.6.4 Printing Trades in Dar es Salaam

Support was requested (1979) for moving training in printing trades from Tanga to Dar es Salaam (where printing industry is located), and equipping new facilities. This has been long been agreed with SIDA and is still (1989) awaiting buildings to be financed by the African Development Fund, though design work on these facilities started in 1981, and as of October 1982, it was expected that buildings should be completed by 1984. In 1985 construction had started, and it was agreed that SIDA would recruit a consultant to assess the need for renovation of existing equipment at Tanga, and otherwise prepare plans for utilization of the workshops which were to be built at Chang'ombe. In 1986, construction has halted due to lack of funds - and SIDA then asked that the matter be brought up only when the workshop was completed. In 1988, the building was *"now nearing completion"*, and SIDA set funds aside again, to allow for consultancy services.

5.7 The Process of Development Cooperation

5.7.1. Cooperation among Donors

It must be a legitimate concern for donors that local management capacity and local capability to meet recurrent expenditure requirements, keep up with growth of training infrastructure in the NVTD system. Donors cannot simply leave such concerns to the NVTD. The dynamism of donor-financed development (especially grants) is invariably one where recipient agencies are under political pressure to overextend themselves. Development plans are moved by urgencies and ambitions which race ahead of ability to follow up and operate. For these and other reasons, donors should cooperate in order to achieve sustainability of combined effort and complementarity of their separate

contributions. A recipient agency could feel it is a negotiating advantage to deal with donors in separation and to discourage informal contact among them. But such contacts will occur in any case, and there is a manifest case for cooperation among agencies and with the NVTD, with 'cards on the table' in order to achieve genuinely shared and all-important objectives. Further, an agency like the NVTD will have an interest in ensuring that it should serve as the focal point in the consultations which in any event will occur among donors. The initiative that NVTD took in 1988 to establish annual donors conferences and more frequent project managers meetings is therefore welcome by all parties (Cf. also Chapter 4.8). It was certainly encouraged by SIDA right from the beginning.³ Donors are so deeply involved, even with recurrent expenditure, in funding the NVTD system that it is illusory to act as if they should not have a say in the overall development of the system. Unless there is a forum where future developments can be openly discussed, the chances of damaging rivalries - a 'my turf mentality' among donors, are greater.

5.7.2 Changing Modalities

The general mode of operation of Swedish assistance has been described in Section 5.1, above. Against a background of fairly open Sector Agreements, Swedish assistance has over time also become more specific and 'project like'. In the 1983 Sector Review, following a new Specific Sector Agreement, SIDA instituted a new procedure at its Sector Reviews, indicating a tightening up of the sector support mechanisms. Whilst previous reviews noted progress made, made recommendations, and noted some specific decisions, the 1983 review starts with jointly signed Agreed Minutes, thus clearly separating out what has been formally agreed from other text. In recent years, there has been further emphasis from the Swedish side on a clear plan of action coming out of each annual review, setting out who is to do what when. A work roster approach has also been increasingly used to plan the contribution of Swedish experts based at NVTD.

At Moshi, each expert has had rather vague job descriptions and there has really been no project adviser, let alone project manager. Decisions have formally been made by the principal, though the first adviser came to act in the role of a general project adviser because decisions had to be made quickly. Since then, advisers to the principal have formally come only to advise on training. As a result of this strategy of 'operating within the system', many decisions have been transferred to DCO which otherwise might have been made by a project manager. 'Operating within the system' has in practice meant more operating by the DCO office itself.

The NVTD view has differed from case to case, as to the balance of authority between Swedes and Tanzanians. On the one hand, it has resisted Swedish wishes for some executive authority for Swedish training advisers at Moshi. It has even made a point of reminding Swedish experts that they are to be treated like NVTD employees - to the extent that they should really ask permission from their Tanzanian superior if they leave their work station during their leisure hours, an idea that is naturally unacceptable to Swedes see SIDA as their real employer and who take Swedish practice about such matters as granted.

³However it has also been SIDA's experience that formally joint projects may have some disadvantages too, when the need arises to sort out unforeseen contingencies and problems. See 5.2, above.

For the Director of NVTD, probably for principals too, it is important to occasionally show that 'they are in charge' and that Tanzanian institutions or programmes are 'not run by the Swedes'. But there are also occasions when the Director wishes to use Swedes to get institutions established or 'on their feet'. Thus, a SIDA expert was put in charge with normal executive responsibility as principal of the Vocational Teacher Training College at Morogoro - a key institution. The idea of putting Swedes in as principals to get certain centres 'on their feet' has also been mooted. The NVTD has even on occasion looked to the Swedish experts at Moshi, who are formally only advisers without any managerial responsibility, to check up on their sections, in order to prevent losses or abuse of training resources. However, any impulse to give authority to Swedes, in a system where management expertise is scarce, occurs nonetheless within a setup where the Director is very firmly and pervasively in charge, at the top.

By the mid-1980s, the economic hardships of Tanzania led to an acute shortage of funds in the government financial system. Donor funds earmarked for agreed development projects and routed through the Treasury were slow to reach their destination (it could take 6-12 months), delaying project implementation. There was also mounting donor concern lest the funds transferred be diverted to other purposes than the agreed one. At the 1985 Sector Review, it was noted that some of the funds transferred to Ministry of Finance for covering expenses within the vocational training programme had not been accounted for by the Ministry of Labour and Manpower Development. It was recommended that the Ministry and SIDA set up a system for joint follow-up of funds - rather than leaving that entirely in the hands of the Ministry.

The main solution, however, was to shortcircuit official procedures by establishing a building fund that would receive funds directly from SIDA and be operated jointly by the administration of Moshi VTC and a Swedish maintenance expert with supervisory responsibility for continued construction and maintenance. NVTD remained responsible for informing the Treasury about the amounts received, so that they hopefully would be registered into the national accounts. A procedure that bypasses (but notifies) Treasury is not unusual in Tanzania. But in the case of bilaterals that have their own project manager (as DANIDA, Swiss Contact), the release of funds is controlled by the project manager. SIDA then set up a procedure suited for a project management structure without any on-site project manager.

5.7.3 Sources of Tensions and Recent Conflicts

Within aid projects in Tanzania there is a shared awareness - among expatriates and local officials - of a social environment in which public officials need side-incomes in order to survive on badly eroded salaries. Cases of corruption frequently become known among the circles in which expatriates and local officials move. There is the awesome gap in material living standard between foreigners and locals which has been further widened by repeated currency devaluations since the mid-80s. During 1988-89 alone, NVTD itself fired three key officials because of various irregularities: the officer in charge of trades-testing (leaving inexperienced persons to run this massive operation during the autumn of 1988), the principal of the largest VTC in the system (at Chang'ombe), and a deputy principal at Moshi VTC. Expatriates are not above suspicion either. A Swedish expert was 'robbed' of a conspicuously large amount of cash not far from the Kenya border.

Theft and pilfering, from the harbour to the workshop, create a climate of suspicion even if only a small proportion of aid money is sidetracked by dishonesty⁴. But memories and associated suspicions, of cement that disappeared somewhere along the line, or of varnish that vanished, will be long. Poor quality of construction or equipment arouses suspicions of dishonesty rather than simply of incompetence or 'accident'. Gossip will be rife in such a climate, and people claim to 'know' much that cannot be proven. Some examples of SIDA-financed poor quality work which has required expensive rectification are the construction of Moshi VTC and its staff housing, and bitumenization of roads at Morogoro. Poor/faulty supplied equipment would include agricultural machinery at Arusha, and the truck supplied for use in SIDA financed construction. The reasons for deficiencies and the agents responsible will vary among such cases. But like thefts, poor quality very regrettably breeds an atmosphere in which honest, hardworking officials are not fully trusted either.

Trust becomes an achievement which is fragile. Yet, the Swedish policy of using (and strengthening) the existing system and to eschew project enclavism, presupposes trust in the commitment and competence of key local officials. But the decision not to have a project manager also implied that the concerned Swedish programme officer at DCO, in Dar es Salaam, would have to assume responsibility for sorting out a wide range of practical problems and personnel contingencies, becoming a shock absorber for some of the 'overload' on the Tanzanian system created by the project. Precisely because of wish to 'work within the system' in SIDA's operation, notwithstanding the inevitable complexity of vocational training projects, a programme officer needs great human relations skills and *ability to deliver on what is informally agreed*. The workload is made greater by the scale of technical assistance, for deploying and sustaining experts and their families is very labour-intensive on SIDA's organization.

Over the years, relations between the Director of NVTD and Swedish programme officers both at DCO and Stockholm have on the whole been cordial, characterized by frequent informal contact and an impression of mutual openness. Thus, at top level in local development cooperation, conditions have been broadly conducive to operations within a Sector Agreement framework as far as human relations are concerned - and human relations matter greatly in Sector Agreements with their annual adjustments and intended flexibility. In 1988 these good relations broke down - to the extent where by the end of the year, communication between DCO and NVTD occurred by post rather than personal visits. At the same time, relations had deteriorated between DCO and the Swedish training adviser at Moshi NVTC. There were further tensions between Swedish experts there, on the one hand, and NVTD and the Swedish training adviser at Moshi on the other.

The 1988 conflict was occasioned by tensions connected with technical assistance personnel at Moshi. An early critical incident was when a SIDA expert in technical draughting was banned from the teaching premises after 'exploding' at the Director of the NVTD. This soured relations the NVTD and the Swedish experts who felt their colleague was too harshly treated. A second and more serious source of tension concerned the decision to redeploy a Swedish maintenance expert at Moshi elsewhere and to other duties, after the NVTD (including the Moshi Principal and his Swedish adviser) had determined that his

⁴It was said that: "More than 100 containers have gone to Moshi. We have lost only 2 cubic metres of goods and some bundles of steel and pipes. This is a very small proportion".

work was inadequate - a claim disputed by at least some of his Swedish colleagues who also objected to the way he was dealt with both by SIDA and NVTD. Evidently, there was also lack of clarity as to the lines of accountability for this expert: to the Moshi NVTC administration, or directly to the programme officer at DCO.

The Swedish experts have in effect two employers: SIDA and the NVTD. They have a contract with SIDA. SIDA is really their employer. They therefore expect as a matter of course 'Swedish' terms of employment, including procedures for transfer or dismissal. But, by officially working inside the Tanzanian system, without their own project manager, they are by NVTD expected to comply with Tanzanian rules - at least to the extent that this suits the NVTD. Thus, an NVTD complaint (which the Swedes will see as posturing) is that the Swedes fail to ask their principal's permission to travel outside of their 'work station' during their days off. There is also the suspicion, that to be an expert in an already established workshop with Tanzanians who are supposed to do the regular teaching, can all too easily be a rather cushy life - also when the need for his presence may be grudgingly conceded.

As Swedish experts have built Moshi up, as they have made the 'Swedish camp' increasingly attractive for expatriates to remain in, and as NVTD increasingly has become impatient that this expensive technical assistance be phased out - no doubt hoping that aid resources thereby could be released for other purposes, so the 'balance of power' in negotiations with the NVTD may have shifted against the foreign experts. Possibly, an early report from the present evaluation activity (Frøyland, 1988. See Appendix 2) strengthened critical attitudes at NVTD towards technical assistance, by bluntly documenting its great expense. It is characteristic of the weakening of experts' bargaining power with the NVTD, that during 1988 and well into 1989, experts whose contract were due to expire were by the NVTD kept on their toes unusually long, before it was finally decided whether or not to offer an extension.

The case of the redeployed maintenance expert was further complicated by the sensitive nature of construction work (staff housing) which he was overseeing, using the Moshi 'buildings fund'. Contracts and procedures leading to contract are naturally touchy matters. In the vacuum which followed the redeployment of the Swedish maintenance expert, it was decided to put the construction work out to tender. Following instructions from NVTD headquarters, the administration of Moshi NVTC - used 'bids by invitation only' which in Tanzania are only supposed to be allowed for foreign funded projects with aid agency involvement in project management. But in this case, SIDA was not consulted. For Tanzanian funds, construction projects of this magnitude (SEK 800,000 or then about TSH 13 million), must be openly advertised or announced through the local tender board - according to 'Comworks' good practice.

Cars are often a source of tension. At Moshi Swedish experts have long been concerned lest vehicles become run down and used improperly. They tend to see 'TX cars' as there for the experts to use for project purposes. The project cars are indeed registered as 'TX plate cars' and must by Tanzanian law be legally owned by foreigners and should only be driven with the express permission of foreign owners. Duty must be paid when the ownership becomes Tanzanian. On the other hand, SIDA has all along been working within the established structure. The Moshi NVTC administration therefore rightly feels the TX cars are theirs to control - like other resources under their authority. There has been no contrary instruction. In the past there has been use of vehicles for improper purposes (tellingly, the mileage gauge was out of order on two minibuses). As a remedial measure,

one driver was sacked. The 1988 conflict occasioned a tightening up of control measures at Moshi, with logbooks etc.

A change of programme officer early in 1989 at DCO made it possible for DCO - NVTD relations to get a somewhat fresh restart. As of March 1990 it appears that the conflicts described have been greatly reduced and that good relations have been restored. It is also here the case that formalization is a legacy of conflict. It has been decided that all money will be routed through Treasury again, in spite of likely delays. From SIDA's side, there has been more emphasis on written notes of agreement between DCO and NVTD. For his part, the The Director of NVTD also welcomed greater clarity and formalization of relations and responsibility with SIDA. Yet, as in all organizations concerned with change and facing many contingencies, continued good informal relations are indispensable. Roles will need to be creatively stretched, and formal boundaries will sometimes need to be overstepped. It is ironic, but characteristic that at the time when SIDA was concerned to spell out more clearly in writing responsibilities and notes of agreement, it was claimed that a key Swedish adviser had inadvertently contributed to the conflict by sticking too rigidly to a purely advisory role.

CHAPTER 6

MANAGING AND STAFFING NVTD

6.1 Headquarters Organization

Appendix 8 shows the official organization chart of NVTD, which sets out the planned structure. The actual organization differs somewhat from that chart¹. The Planning and Professional Services Department is actually a Planning Department, since Curriculum Development is combined with Inspection and both fall directly under the Director. Another difference is that Finance and Administration operate as two departments not one.

The Curriculum and Inspection Section is one which the Director intends to strengthen, by progressively bringing in experienced principals from the field, in order to further strengthen the professional authority of the Section.

The Assistant Director (Planning) is at present next in seniority under the Director and deputizes for the Director in his absence. Unlike the official chart, there are no statisticians or maintenance sections, as such. The two Planning Officers deal with project implementation and planning. The Central Store at Chang'ombe NVTC processes orders and clearing on behalf of the NVTD headquarters and other VTCs.

The Training Department is headed by the Assistant Director (Training). On the chart it includes various sections. In fact, one officer under the AD(T) handles training administration (liaison with centres) and instructor training as well as staff development matters. There is no guidance function as a separate headquarters section, and no section for production services.

The Trade Testing Department has its Head and sections for Test Construction and Trade Test Administration.

There is a Finance or Accounts Department headed by the Accountant who has a staff of four Assistants and two Clerks.

The Administration Department is headed by a Principal Manpower Management Officer. He is responsible for Personnel and Office Supervision.

It is evident that the NVTD headquarters is still seriously underdeveloped and in need of building up. This is a long-standing recognition; and numerous measures have been taken in pursuit of this goal (See Chapter 5.2). As of 1990, the major external support for more effective management is the recent plan for Danish aid (See Chapter 4.5). Coombe, in his notes for this Evaluation (1990) points to a need for a new assessment of the NVTD headquarters structure and management system, because of i.a., the great increase in workload caused by the expansion programme, the seniority (and presumably not too distant

¹In preparing this Chapter much use has been made of data gathered in Trevor Coombe's notes for this Evaluation and in Mushi's (1989) report for Swiss Development Cooperation and Humanitarian Aid.

retirement) of the present leadership, and concentration at present upon one or two senior officers of much of the research, monitoring and evaluation activity.

6.2 Establishment and Career Structure

The grading structure of NVTD, and its pay scale, remained the same during 1980-1989. During this period there was massive erosion of purchasing power of salaries. Further, the financial problems severely constrained establishment expansion and promotion opportunities.

The ranks in that structure (from July 1989 the term 'industrial' has been deleted) are: Vocational Training Industrial Training Assistant (VITA) I and II; Vocational Industrial Training Officer (VITO) III, II and I; Senior Vocational Industrial Training Officer (SVITO II and I); and Principal Vocational Industrial Training Officer (PVITO) II and I. The most junior instructor was at VITA I; the Director of NVTD was at PVITO I. At every level in the 9-step ladder, promotion is in theory possible via an 'in-service' route. Formally, the career structure is quite open-ended without structural barriers to promotion. In practice, however, there are gaps in the manning table (Table 6.1) between establishment posts and staff in post, which could suggest either fairly tight regulation of promotion or perhaps undue advancement delays because of bureaucratic complications.²

Table 6.1 NVTD Vocational Industrial Training Officer establishment 1988/1989. Numbers and pay levels.

Grade	Monthly Salary as of March 1989	Establishment	In post
PVITO I	7625	2	1
PVITO II	7410	2	1
SVITO I	7160-7330	13	8
SVITO II	6775-7085	13	20
VITO I	6020-6745	30	29
VITO II	4690-5850	58	47
VITO III	3715-4555	58	69
VITA I	2860-3525	190	197
VITA II	2185-2780	97	44

6.3 Pay Relativities

Table 6.1 also shows the 1980-89 pay scales (which since then have been improved): an instructor typically earned a monthly pay of 2.8-3.5000 thousand shilling, and a principal

²The sanctioning of an officer's eligibility for promotion is subject to many and slow checks in the Tanzanian government system - checks designed to forestall error and correct abuse.

about 6-7000, with level which are not much higher for the top officers of the Division. But there is additional income. Mushi (1989:76) says that depending on the grade, the extra pay includes teaching allowance, transport allowance and housing allowance for those not occupying government quarters. For the average instructor (VITA I), this would hardly add up to more than TSHS 2000 a month. Other sources of small income include overtime paid for teaching evening classes (SHS 100 per hour as of spring 1989) and some small amounts for setting examinations or examining.

Their income compares very unfavourably with industrial earnings of good skilled craftsmen - the manpower they are supposed to train. Questions asked during interviews with industrial managers in the Arusha and Kilimanjaro regions, about how much pay a skilled craftsmen earned, drew the range of replies which are shown in Table 6.2. In the case of

Table 6.2 Monthly pay in industry - Dodoma, Tanga, Kilimanjaro, Arusha regions, March 1989. Unskilled and skilled Workers.

Type of company	Unskilled worker	Skilled worker/craftsman	Top foreman, top paid craftsman
parastatal tannery	1900	2090	4050
private auto body shop	1800		6000
private leather articles	1800		5-6000
private sisal estates/ engineering shop	1420		5-6000
parastatal fertiliser		1790-2645	
water supplies	2000		
private paper mill	1700	4000	10000 ³
parastatal, various prods	1750		2675
private plant hire & supplies		3500	8000
parastatal coffee company	1260	1710-3065	5000
private soft drinks bottlers	3000	8-9000	17000
parastatal furniture production	2500	6000	10000
private match company		3000 ⁴	8-10000

industrial workers too, there are additional perks in many cases - meals, bonuses, housing - on top of the wages shown in the Table. The figures in the Table are admittedly rough; but they demonstrate the low pay of NVTD staff, especially in comparison with the private sector. Highly experienced craftsmen or supervisors there earn well above the salary income of the leadership of the NVTD⁵.

³"for technicians"

⁴"semiskilled"

⁵I was told that a 'good driver' for a UN agency paid at UNDP rates would receive about 16,000 a month.

The largest contingent of instructors are those on VITA I grade. To enter at this level, an instructor needs a Full Technician's Certificate or NTTC Grade 1 plus three years relevant work experience. Their pay level (2800-3500) is only about half that of top craftsmen in private industry, and not even up to ordinary skilled worker pay in many companies. These blunt comparison lays bare the main reason why it is so difficult to recruit into instructor-training people with industrial experience. No amount of recruitment campaigning will make much of a dent on this problem, against such unfavourable pay relativities. To attract competence and maintain integrity are perforce not easy, let alone to attract those who have done well in their trade within industry. The contrast with the pay of expatriate experts is of course cruelly stark, as shown in Frøyland's (1988) report for the Evaluation. Translated into Swedish currency, at a 1989 exchange rate of TSHS 20 = SEK, the monthly pay of a VITA I would be about SEK 160. For PVITO I, the Director of NVTB, it was SEK 381 as of March 1989.

6.4 Utilizing Instructors

No single establishment criterion is used when establishment requirements are computed. In his enquiry for the Evaluation, Coombe received these answers to questions about such criteria:

- *an instructor : student ratio of 1:16*
- *1 instructor per 12-16 students in a trade*
- *2 instructors per 16-32 students in a trade*
- *1 instructor per 12-16 or 20 in a trade, for instance 16 in carpentry and 20 in painting; but Chang'ombe NVTC applied 1:8 for Truck Mechanics and 1:6 for Fitter Mechanics, and at Moshi NVTC 3 Machinery Fitter instructors were required for a class of 20 trainees.*

Commenting on the instructor per trade rates, the Director pointed out that workshop organization in the bigger centres varies with the participating donor agency, and this sometimes resulted in different staff requirements.

In 1983 the average trainee instructor ratio was at Dar es Salaam NVTC (Chang'ombe) 1:15, at Mwanza 1:9, at Tanga 1:12, at Moshi 1:7, and at Dodoma 1:18. Thus there was considerable variation among the centres, and a sharp difference between a high ratio at the Danish-supported centre at Dodoma (emphasis on buildings trades) and a low ratio at Moshi (which was just starting up). The Moshi ratio has since moved towards 1:15.

A sample of more recent variation in instructor-trainee ratios accross training centres and trades, is given in Table 6.3. Coombe cautions that there may be annual fluctuations, and that staff sections are normally staffed by one, two or three instructors so that a single vacancy will affect the ratio in a section quite drastically. The main impression from the Table is not that of a clear pattern by trade or centre, but one of variation. One notes that the Moshi ratio has moved towards 1:15 as enrolments have increased, and that the Dodoma ratio has moved up to 1:11, with Tanga about stable when compared with 1983.

**Table 6.3 Actual Instructor/Trainee Ratios.
Selected Centres and Years**

Trade	Kagera (Bukoba)	Tanga	Dodoma	Moshi
	1987	1988	1989	1989
Tailoring/Leatherwork	21			
Tailoring		8		
Painting/Signwriting		15	22	
Printing/Bookbinding		24*		
Carpentry/Joinery	26	11	11	
Masonry/Bricklaying	25	14	7	
Welding/Fabrication	28	13	7	
Pipefitting & Boiler Mechanics				13
Refrigeration & Air Conditioning				11
Blacksmith General				15
Foundry				27
Patternmaking				11
Fitter/Turner		7		
Fitter/Mechanic			7	
Machinery Fitter				22
Tool & Die Making				10
Electrical Installation		15	12	
Industrial Electrical Fitter				6
Motor Vehicle Mechanic		14		
Diesel Engine Mechanics				25*
Instrument Mechanics				18
Electronics				8
Civil Draughting			12	
Mechanical Draughting				8
Average (of the ratios)	25	13	11	15

Sources: Kagera, Tanga: Annual Reports; Dodoma: Mats Hultin's worksheets for the Evaluation; Moshi: Progress Report, Jan-March 1989. The figures refer only to local staff. Student numbers used are initial enrolments. At Moshi first and second year figures were combined.

*indicates trades where centres reported staff vacancies.

It can be concluded that there is much variation among trade sections and centres which at least from an overall view, rather than considering the particularities of each case, seems arbitrary. This may not be exceptional; seemingly accidental variation is internationally common. But it must mean that slack capacity in some sections coexists with hard pressed staffs in others.

6.5 Costs and The Squeeze on Resources

It is commonplace to observe that vocational training has high unit costs. Apart from obviously high development expenditures, the kind of staffing levels exemplified in Table 6.3, above, is one obvious reason. But non-staff expenditure is high in the NVTD system (Cf. Table 4.1, Chapter 4.2).

However, the cost per trainee *completing* basic training is curtailed by the short duration of the course - one year in most cases.⁶

A recent UNESCO report has compiled some relevant unit cost estimates. Their accuracy would need confirming; they should only be taken to show some rough relativities as of 1986. These estimates of recurrent unit cost to government (presumably per student/trainee year) were then: primary school: TSHS 957; secondary school: TSHS 17,410; technical education 52,413. For comparison, one year of basic training at NVTD was then estimated at roughly TSHS 12,000 - or roughly 12 times the cost of a year in primary school, but (surprisingly) a bit cheaper than a year in secondary school.

Since secondary school is a four-year course, completed secondary school is much more expensive than basic training. But it should then also be recalled that basic vocational training is intended only as the *first stage* in training skilled workers. In any event, the present policy to extent all basic training to two years would further stretch the inadequate resources which most NVTCs have for recurrent costs.

Whilst externally supported pockets within the system benefit from externally financed investments, with aid agency involvement spilling over into help with recurrent expenditures to ensure that these favoured pockets remain operational (See Chapter 4.2), the normal operation of those Centres and Sections which are not directly assisted has suffered setbacks due to shortages of funds for non-staff recurrent expenditure. Mushi (1989) analyzed timeseries of actual expenditures ('other charges') at Chang'ombe NVTC during 1980/81-1987/88. During most of these years, the absolute amounts increased, but there were also decreases. If inflation is taken into account (an annual rate of about 30-50%), the picture is one of a Centre which is being severely squeezed. *"Looking further at the expenditure, in terms of some of the important areas of spending like education materials and equipment maintenance, we observe a downward trend in spending in the more recent years...at a time when the number of students has increased tremendously, and also when inflation is so high"* (p65). Mushi notes that he had to do a great deal of digging in archives in order to compile his figures. *There is no system for monitoring trends in expenditure. There is no ready availability of base-data for budgeting purposes.*

There is a shared interest between bilateral donor agencies and the NVTD in making donor supported enclaves 'work'. High staffing levels probably reflect this. The donor is naturally concerned with holding the NVTD to promises made about the inputs which are required to maintain and make good use of infrastructure. The NVTD needs to 'keep donors happy', in order to ensure future support. But the special attention which donor-

⁶It is of course true that the full training period, which is intended to also include apprenticeship, is longer. Training costs are also incurred during apprenticeship. No attempt has been made to estimate these.

supported projects require must be balanced against the need to ensure that the distribution of desperately scarce local resources does not unfairly favour those NVTCs or sections which are already favoured by external assistance. *When donor involvement is phased out, the pressure for special treatment abates; and the general squeeze on public resources has the risk that dilapidation will simply be spread more evenly.*

The squeeze on recurrent 'other expenditures', lack of basic data for planning and for cost monitoring, and long delays in procurement of materials and parts, all make development projects in the NVTD highly vulnerable 'after takeover' - unless there is a long-term commitment from the donor agency to continue support for those recurrent items which are most directly related to teaching - teaching materials (consumables) and maintenance of equipment. The tendency for projects to become 'run down' because of insufficient funding and management capacity after take-over is a reason why donors should rather be willing to give long-term help to few centres than to give short-term help to a great many locations. Donor policies should seek to restrain the politically demanded geographical diffusion of provisions.

6.6 Production Units - the Hope of Generating Income.

The squeeze on local funding has made NVTD and donors alike interested in attempts to generate income by means of production units based at NVTCs. The hope is that this would help remedy the shortage of recurrent funds and provide needed incentives for staff, under regulated conditions. There is a sense of a duty to be optimistic about the potential of 'Self Reliance Units'. Self Reliance is hallowed concept in Tanzanian political culture which here is adapted so that it gives legitimacy to projects which in part provide individual incentives.

But there is in fact wide awareness that production units are fragile blooms which wilt easily. The skills required to plan production and marketing for sale are rather different from those required to run a training institution or to teach a trade competently. Thus the high official hopes at present should be seen against a history of fairly common disappointments from which some lessons have been tentatively drawn.

Earlier experience has indeed been mixed. At Chang'ombe NVTC, there was an attempt to establish an incentive system for staff with working capital in the form of a revolving fund provided by the Division. Centre staff were allowed to look for jobs and have them done at the centre. The only ones who benefited were those who did the jobs. The consensus is that 'it did not work'. The revolving fund was also misused leading to the calling for an investigation by the Director and to suspension of the scheme (Mushi, 1989:77). The lesson is that schemes need to be 'better organized'; and accounts and contracts need to be subjected to careful professional checking because in SRUs lie also temptations to abuse resources for private gain.

At Moshi, there has been production for some time. In 1985 it was decided to set aside SIDA money for initial planning of production work. The hope was that such work would contribute to the centre development fund. During 1985/86, the Moshi centre earned some TSHS 400,000 from various sales to the surrounding community, about 725,000 from selling training courses (supervisory & welding) to the industries in Moshi area, and about 600,000 from internal services among sections in the centre, paid for by SIDA. The Moshi experience is also that production should be organized separately from training, with its

own management, facilities, and accounts. In 1986, it was agreed that the centre gradually should embark on production and establish a separate section under the principal with its own production committee and separate bookkeeping within the the Centre Development Fund, further that this section should prepare quarterly reports to the NVTD and that these reports be made available to all staff. The need for open access to these accounts is a continuing concern, in order to build and retain mutual trust about 'cash handled' - a sensitive issue in any production unit.

The Moshi scheme divides the profit from a job between the school and the instructor. But from interviews with some former customers of the production unit at Moshi it is also clear that to get the job done, it can happen that a customer must pay considerable extra money under the table to the instructor concerned. There is a sense that the money side of production management had better be left to some foreign expert who, unlike their illpaid Tanzanian colleagues, is too well off to be corrupted. So a senior person among the Swedish experts acts as a coordinator, to check prices and cost estimates. NVTD and SIDA has in fact agreed that SIDA would recruit a production specialist to set the Self Reliance Unit at Moshi up on a more professional footing. The agreement is that SIDA would recruit a production specialist with experience from industry on a two-year contract, who during an initial period should manage all production and related administrative matters. So far (1990), SIDA has not succeeded in recruiting such an expert. Both perceived need to have a foreigner and the difficulty in recruiting one are instructive. Persons with these scarce skills are not easily extricable in the Swedish system either.

Moshi NVTC's main production intentions are the 'high skill' engineering trades (e.g., Tool & Die, Foundry) with industry as main customers. Production occurs within each Section, rather than in some separate 'production unit facility', and seems mainly to have been made-to-order items. In 1988, the value (proceeds, not value added) was about SHS 2.4 million. Out of this production, the income that goes to Moshi NVTC is, *inter alia*, paying the wages of workshop auxiliaries. NVTD is keen to increase the value of this production, to 'get more out of' the expensive Moshi facilities. But, insofar as production should be seen as a business proposition, and insofar as it is felt at Moshi that for some years at least, it would require the presence of an expatriate expert, it should be firmly borne in mind that the annual cost to SIDA of such an expert would be about SEK 500 thousand, or TSHS 10 million (in 1989) - about 5 times the total sales receipts from production at Moshi in 1988. *One needs to be quite confident that a production unit has long-term sustainability under Tanzanian management, without expensive technical assistance, before this is likely to make any sense as a business proposition.*

The NVTD has in principle decided that there should be a production unit at each centre. The success of the Danish supported Self-Reliance Unit at Dodoma NVTC since late 1988 is one reason. But whilst Moshi makes engineering products 'to order', Dodoma NVTC has established a line of furniture products which are selling all over the country, with a catalogue that is used for marketing purposes. It has established a separate production workshop with 12 employees and 10-15 casual labourers in furniture production alone. The 1989-90 budget for this production was SHS 15-20 million, with 10 million worth of orders tantamount to a year's production, as of February 1989. The aim was then to reach SHS 50 million by 1994. The system has a profit sharing plan. After after covering materials and other costs (including pay for the employees and the extra work which instructors put in for the scheme), profits are divided according to a formula: 35% is divided equally among all staff, 25% goes to maintenance of the centre, and 40% goes into a revolving fund for materials which also contributes to consumables for teaching. Apart

from a share in profits, it was loosely estimated that on the average, an instructor would earn about extra 25000 from work on the scheme in 1989 - or more than SHS 2000 each month before the 'profit share'⁷. Thus, very considerable pay supplements are connected with the scheme, as compared to the basic pay (Cfr Table 6.1). There is much enthusiasm about the scheme as it was operating in early 1989. The Danish project manager at Dodoma thought the scheme had solved a theft problem which existed previously. One would infer that it also is an advantage to have a 'line of products' that can be standardized and marketed, such as their furniture line.

It is instructive that there was earlier at Dodoma an unsuccessful scheme which had operated for many years. It suffered from poor financial management. Substantial amounts (SHS 90,000) had been extended as loans to instructors which had to be written off. The Dodoma scheme as it now operates is part of a more comprehensive policy aiming at improving staff morale: Thus there is emphasis on public access to information (e.g., all contracts), on improved catering services, and more extensive consultation. There was as of February-March 1989 a widespread impression that this was working well, and that Dodoma, unlike other NVTCs, had managed to 'kill the informal system' of 'irregularities' and payments under the table which have bedeviled production work. In assessing the Dodoma scheme it is inevitably important to consider that *it has a Danish initiator (the project manager at Dodoma) and a Danish production manager - whose salary is not 'included' when the business accounts of the SRU are drawn up.* How far Dodoma's success will outlast the direct Danish involvement also remains to be seen.

A key issue is whether the SRU concept can be introduced on a large scale, in a system of institutions. Or is it only realistic when persons of exceptional energy and talents take charge? It is certainly true that managers of training rarely have the required skills to manage production and marketing, and that the requirements of production and training can conflict - e.g, routine production versus the need to train for a variety of tasks. When production succeeds, it tends to squeeze training out.

One would expect that the 'product' which a training institution is best equipped to produce, market and manage is training itself. This is an approach which is pursued in some industrialized countries which are trying to gear training institutions more to the market and recoup expenses from 'sales'. A comparative study of these efforts is yet to be made. But in these well-resourced systems too there are basic questionmarks about such schemes. Even when taught well to satisfied customers, short courses often quickly exhaust the demand; and frequent 'retooling' with fresh marketing efforts are necessary. Can public organizations which in the past produced a standardized 'product' and without having to recoup expenses from 'sales', really retool as entrepreneurial outfits which have marketed training as their product? These are fundamental questions which also concern the more general limits to 'flexibility' in vocational training - and 'flexibility & responsiveness' are key ideas in papers presented by World Bank staff preparing the forthcoming Bank policy paper on training (Middleton, Ziderman & Van Adams, 1990a, 1990b).

In general, one can posit a scale of difficulty of management tasks, for institutions like VTCs. The 'easiest' is to set up a system of basic training courses, with regularized intake and fairly stable curricula. Next comes short courses with changing clientele and less stable curricula. If these have to be sold 'at cost', they become still more demanding on

⁷It should be stressed that these figures were informal 'budget' estimates, not payments made.

management skills. More difficult than that will generally be the running of production units. Further, if production is set up and 'taken seriously', efficiency considerations will press for routinisation and for a degree of separation from training. e.g., a movement from merely responding to requests and 'making to orders' towards producing and marketing certain product-lines.

In Tanzania, the risks and the demands of SRUs in the NVTCs are clearly great - whether they would sell physical products or short 'courses on demand' to be paid for by industry. Like in finance for small businesses, one should expect a high failure rate of SRUs projects. Regulations should make it possible, but demonstrated strong *local* managerial capacity in the NVTC should be required. Foreign expertise is hard to recruit, and it is doubtful economics to make 'training with production' dependent on extra expatriate managerial expertise. Neither is such business acumen likely to be transferred by the usual 'counterpart' arrangements, *unless there is promising local talent in place to begin with.*

As far as Moshi NVTC is concerned, two consultancy reports relating to these matters have been produced: a feasibility study on a Unit for Further Training prepared by Bertilson and Johanson of SIFU (1987), and a report on Training with Production by Rydbergh and Svensson (1986). The Training with Production report should have its viability *as a business venture* examined. It should be scrutinized by *an expert on small industries in Tanzania.* Part of that scrutiny must be the availability of local 'business' talent already at Moshi NVTC or within NVTD more generally, to take a lead in developing the production unit. The present Evaluation group regrets that it lacks sufficient competence to conduct this scrutiny. It is doubtful that trainers/education researchers can do an adequate job here.

The study on a Further Training Unit seems a thorough and useful departure for further planning of short courses. Quality in teaching such courses presupposes good quality in teaching basic training, which must be the basic building block to first 'get right' up to a point - otherwise short courses will lack credibility, though basic training is likely to be enriched by the experience instructors gain from working more closely with industry on short courses.

6.7 Dilemmas of Control

During the Evaluation fieldwork, the claim was often heard that the top leadership of NVTD is overburdened and that very long delays are common before even minor decisions are made. It was said that the top leadership fails to delegate by clearly spelling out the independent responsibility of lower tiers and of institutional management at NVTCs, and that it fails to stick to delegation when it is supposed to have been made. Critics - both expatriate and Tanzanian, argued that *more decentralization and a less authoritarian style leadership are greatly needed.*

The argument is familiar: by decentralizing one spreads the workload, brings decisions closer to those directly affected, and initiative and morale will be promoted among those who are given more responsibility. *"You get the best out of people, only by giving them responsibility, even the freedom to make their own mistakes."* This is an optimistic creed. Pessimists tend to suspect that decentralization in public bureaucracies all too easily can

better entrench incompetence and inertia - and open more widely up for abuse of funds and authority. Clearly, the efficiency-gains of shifts in the distribution of authority will depend on how far those who are given more responsibility also possess the needed competence and dedication to task. When top persons doubt their subordinates, delegation seems risky and will be half-hearted and inconsistently implemented.

Certainly, in Tanzania as in most countries, managerial competence in vocational training is scarce. Better recruitment, training and incentives are needed. But when systems grow larger, without sufficient delegation, business will pile up in the top person's in-tray, and decision-making grinds to a halt when he is away.

It is difficult to write a balanced account of management at NVTD, for views are strongly shaped by vantage points. There is one the one hand the common complaint of excessive centralization of authority focused on the Director. But the Director of NVTD, for his part, complains that principals of VTCs refer too many decisions to Dar es Salaam, and that they should take more initiatives and decisions themselves. He sees the development of high quality administrative cadre as a slow process, with a need to attract more young recruits with better educational credentials at entry to the service.

The NVTD Director is respected in the Tanzanian administrative establishment as a 'system builder' who has been quite successful in attracting external funding and 'getting things started'. Internationally too, he has a reputation as an experienced leading figure African vocational training. He has a major responsibility for developing a system which has, as vocational training, a distinctly superior reputation to either 'diversified' Technical Secondary Schools or the Post Primary Technical Centres.

'System builders' - gründer - usually find it hard to delegate. Having built institutions up from scratch, they take pride in continued attention to detail and naturally have an 'ownership attitude' towards what they have achieved - also about matters which really should be firmly under the brief of their subordinates. Gründers therefore often become authoritarian and seem arbitrarily interfering. As they near retirement, they are frequently torn between, on the one hand, the manifest need to find and groom their own potential replacements and to give enough independent responsibility to such people, and on the hand they underestimate their lieutenants potential and give way to the urge to remain firmly and directly in control.

People steeped in different cultures can have contrasting notions of what are 'normal' or reasonable administrative styles and practices. Outsiders steeped in, e.g. the disinterested and 'case oriented' culture of Swedish officialdom will not be attuned to a diffusely personalized tradition of authority. Yet, as a modern extension of the tradition of African chieftdom, such authority may seem less unusual or unreasonable to Tanzanians.

The case of Chang'ombe NVTC shows some of the dilemmas connected with decentralization and also some problems in the way the system now operates. Dar es Salam NVTC at Chang'ombe is by far the largest and most complex centre in the Division (Cf Chapter 2). During spring 1989, its management structure was examined as part of an evaluation for Swiss aid (Mushi, 1989; Burk 1989). It was claimed that the Centre, which is adjacent to NVTD headquarters, was then in effect being managed "*directly by the Division*" although the Centre officially was supposed to have a functional principal who could act in accordance with delegated powers.

Management weaknesses both at the Centre and the division had turned budget preparation at the centre back to the Division. Yet, there was according to Mushi, *"no qualified staff in financial matters at the Division to direct the preparation of proper budgets at the Centre and the Division"* - only a small group of accounting staff. It is easy to concur with the Mushi report that each centre must have a proper financial planning procedure for preparing the agreed budget, record actual expenditure, and propose budget for the next period. Similarly, better forward planning for materials consumption is needed. But this requires adequate numbers of competent and dedicated staff. Both in the NVTD headquarters and in the Chang'ombe NVTCs, like other NVTCs, there is a heavy concentration of junior staff.

The most pressing problem of management within the NVTD organization may not be 'excessive centralization'. When followed as a sharply hierarchical structure, centralization can at least be an efficient system for dealing with routine matters (as in a peacetime army). The problem is rather that intermediate authority is undercut because it is all too often bypassed. This was very manifest at Chang'ombe NVTC, which is next door to the Divisional headquarters, according to Mushi (1989). Our impression from other centres, including Moshi, is that this problem is widespread. Mushi writes: *"Section heads go directly to the principal when they have problems, rather than going as they should to the vice principal."* The principal is often bypassed both by communication going down from the Division to his staff members (e.g., about new postings), or going directly up to the Division from his staff (e.g., applications for studies).

The operation of aid projects in a Centre greatly adds to the complexity of a principal's task, straining his capacity. In any event, technical assistance personnel themselves often bypass intermediate authority and go directly 'to the top', thus reinforcing the very centralization of which they sometimes complain, in 'order to get things done'. It is likely that internal centralization within the NVTD is reinforced by the need to deal authoritatively with aid agencies, and by the tendency of technical assistance staff to bypass their local 'counterpart' or superior and cut through to deal directly with the top man.

At least a part of the problem of 'arbitrary interference' from the top is connected with an authority structure with many junior staff and thinly stretched competence, in a type of institution which is complex to manage. The high incidence of 'irregularities' also undermines the climate of trust upon which confident and consistent delegation depends. Thus, at Chang'ombe NVTC, the very case which exemplifies 'bypassing the principal', the principal was dismissed because of financial irregularities. In general, doubts about the competence and commitment of subordinates will in any organization undermine willingness to delegate and to stick to the structure of delegation which has been agreed.

6.8 Conclusion

As a first priority, it would seem that NVTD should ensure that intermediate authority not be bypassed or undercut. For this purpose clearer job descriptions may be needed, in order to better define responsibility. Beyond that, a policy of greater delegation within NVTD must go hand in hand with one that builds competence and commitment by means of staff development and incentive structures. This notion is at the very core of modern institutional development theory. It is also common sense. To achieve this under the career and salary constraints of the Tanzanian civil service is of course no easy task. It

deserves continued high priority for assistance to the NVTD. It also requires that the leadership of NVTD and of the NVTCs take a lead in encouraging initiatives from below and *much more openness of information about important decisions*.

Delegation and greater clarity of responsibility are not a sufficient condition for improving managerial efficiency in NVTD. But it is probably nonetheless a necessary condition. The present management capacity of NVTD is badly strained, and the system is expanding. The Director recognizes that decentralization policies are now in order. As the system expands, he feels the NVTD headquarters should move more towards an advisory role. He envisages for each training centre a regional board to which much of NVTD's authority could be devolved. As of spring 1989, policy proposals to that effect were being considered. The Director also declared his wish that selection of trainees be delegated to the reconstituted NVTCs. The test of these intentions will be actual shifts in structures and practice.

A need for a management information system is indicated by many of the problems discussed above: the need for consistency in staff-establishment policy and for monitoring of careers, the need for financial planning and monitoring of expenses. A management system could also be used for tracing the trainees during in-plant training and later in their entry to 'real jobs'. A computerized system has the potential of improving NVTDs planning and management capacity, with good payoffs. But, it would also require improvement of NVTD's capacity simply to to set up, run, maintain such a system - and to make use of it for planning and management purposes. If such a system is set up (DANIDA is now keen to assist, and so should SIDA), this too would need to go hand in hand with considerable staff development at NVTD.

It cannot be too emphatically repeated: the management capacity of NVTD is too weak for the present scale and complexity of the system. It must be strengthened is external aid is to be efficiently and properly utilized in the future in order to improve the quality of training - let alone implement expansion of scale. Donors should be quite insistent on this point. Unless routine administrative decision-making can function properly on matters of key importance to externally financed projects, further projects that merely tax inadequate capacity further make no sense.

CHAPTER 7

INTERNAL EFFICIENCY OF BASIC TRAINING

In education and training, 'internal efficiency' means that desired learning is achieved and that good use is made of available resources. Among the 'resources' are the students or trainees themselves. In economics and production engineering - the fields from which the 'efficiency' concept has been borrowed, quantified output/input ratios are the expected measures. In education and training the use of pass rates, drop out rates, unit cost, and benefit-cost ratios would be examples of methods transposed from economics and engineering. But such indicators do not measure whether *good* plumbers and carpenters are produced. To really measure efficiency one would first need adequately to measure *effectiveness* - or realization of goals which are qualitative too. Regretably, this Evaluation will not shed much light on 'what is learned' in the various trades. 'What is learned' is not shown by syllabuses either. Nor do pass rates show what is actually learned. One needs to find out in each trade what trainees know and what they can actually do in their trade, as a result of their training. To monitor such actual learning outcomes is an important task for curriculum development. It means more intensive fieldwork in schools and industry than what we have managed in this Evaluation.

The approach to 'internal efficiency' in this Evaluation is not guided by any notion that a single ratio of efficiency would be appropriate. Rather, the guiding ideal has been a broad illumination of a wide range of relevant conditions, with varying depth and 'hardness' of data. Chapter 6 was also part of this attempt to paint a wide canvas on internal efficiency.

'Basic training' is not intended to be 'job readiness' training, but preparation for apprenticeship. The internal effectiveness of the training as a whole should then refer to what is achieved at what expense, *by the end of apprenticeship*. But for many trainees 'basic training' is in fact the end of deliberately organized learning of their trade. After basic training, most trainees are effectively in the 'jobs' labour market, though there will be some naturally occurring learning on the job. There is therefore a case for examining separately the internal efficiency of basic training since it is all too often is all the training that is given.

7.1 Selection of Trainees

In the intense competition for access to education after primary school, a place in an NVTC is valued as a ticket to a modern sector job. How to find those with good promise as potential craftsmen is therefore not the only selection criterion. There will be concern with equity in the rationing of very scarce chances of access to the modern sector. There is also a need to deal with a very large number of applicants, and this rules out time-consuming, intensive screening and individual guidance of each applicant. The result is a selection system which, for basic training at least, does not even pretend to test practical ability or skills as using tools. Nor is interest in the trade of much importance. These weaknesses in selection of trainees are bound to inhibit mastery learning in the trades and to reduce the credibility of basic training in the eyes of employers. To the extent that aptitude is important for selection, it is 'book learning' rather than any practical skill which in fact is used as a criterion. Curiously, the most common 'quality complaint' is nonetheless that

trainees have an insufficient grounding in English, Mathematics, and Science. Rather than seeking in any way to put a premium on other life experience than schooling, for most trades the selection method encourages coming straight from primary school.

7.1.1 Selection Methods

Before 1985, selection was by application directly to the Director of the NVTD. Principals have also had some discretion to 'fill up capacity' and thus some patronage opportunity, especially under the old system of admission. It became increasingly recognized that the old system was not working well, but there was no dearth of applicants. No doubt, direct application favoured the better educated families who would be more likely than others to know about this relatively 'low profile' part of the total education system and whose connections helped them in getting a place for their offspring. To quote one experienced principal: *"The system became saturated, some failures even got through...Many were dragged in by their parents"*. Some experimentation was done with an aptitude test in English and finger dexterity, but it was abandoned as the main solution.

Rather, it was decided at a principals' meeting that selection to NVTCs would link up with selection to secondary schools. As before, the best primary school leavers would go to secondary school, then would come selection to teacher education, and the 'third passes' would be nominated to go to NVTCs. This was to be the main route to basic training, though some entrants would be nominated or 'sponsored' by employers, and some would continue to be 'traditional applicants'.

Since 1986, the policy has been that 60% should be admitted directly from primary school as 'third sortings' at selection to secondary school; 20% would be by nomination from employees, and 20% would be by direct applications. According to figures supplied by the NVTD, the actual 1988-89 admission shows this breakdown:

	Number	%
Directly from primary schools	1220	59.3
Sponsored by industry	242	11.7
Direct application (called 'traditionals')	515	25.0
From basic training (to some Moshi trades)	80	3.9
Total	2057	99.9

Selection to those Moshi trades which require previous basic training is a difficult task for the NVTD, because it is difficult to fill the courses with trainees who have the appropriate prior training (See Chapter 5.3.7).

Sponsorship does not work well at present. Only about 12 % of those admitted are in fact sponsored by industry. *"Half of them fail to show up because employers change their mind"*. Also, it is reckoned that a high proportion of those who are sponsored are not really sponsored with a view to taking them on again after training. *"Probably about half of them are well qualified, half are the relatives of the sponsor"*. The NVTD tries to ensure minimal quality by requesting information about, *inter alia*, the kind and length of work experience. The low rate of sponsorship leaves more scope for 'traditional' direct applications to the NVTD itself. For these 515 places, the Division received 6000

applications. Some simple arithmetic and English tests are used in the further screening of these applicants. We have no data to comment further on the process of 'traditional applicants', but during our fieldwork we picked up some distrustful comments. Openness of information is needed both to curtail unfair practices and to dispell unjustified rumors.

Day schools also receive many direct requests each year. Mr Chikira, principal at Iringa NVTC, said that: *"1500 letters are written to the NVTC here."*

About 60% are admitted directly from primary school. It must be a disadvantage that this group comes without any previous related work experience and that they are initially nominated simply by being 'third passes' who were not good enough for secondary school or teacher education. This is the procedure: Each Regional Education Officer¹ prepares a list of rank-ordered 'third passes', usually building into that list gender quotas and district quotas. These are then called for interviews, usually at the nearest NVTC. Some will not show up for interviews for lack of interest or other reasons. Others who are not on the list will show up. The latter are supposed to be turned away. Those coming for an 'interview' are given a presentation about the NVTD and the trades on offer. They are then given a form and 25 minutes to put down three preferred trades and also any trade they would *not* like to enter. They are also to write a short history of their life.

This interview is also a chance to observe whether candidates are 'ablebodied'². They are then rated on their paperwork.³ How good is their handwriting? (10 points). Is the form properly completed? (10 points). How good is the quality of writing in their 'life story'? (10 points). The points are then added to a total score. There is then some internal moderation at each centre, before the ranked list is sent to NVTD where the final decision is made and the applicant is, e.g., sent to become a blacksmith. There is final screening at NVTD headquarters, but very considerable reduction of numbers also occur at the regional selection centres. For example. Moshi NVTC receives some 200 names from the REO, and forwards about 70 to the NVTD after the interviews.

The NVTC receiving new trainees from the NVTD, after this initial regionalized screening, is only informed about the name of the prospective trainees. *"We don't get any information about students sent to us. There is no systematic mapping at centre level."* Such lack of information is regrettable, because it fuels rumors of improper selection - somewhere along the line.

Time is at a premium in a one-year course. The many late arrivals is a cost which training can ill afford. As late as a month after the beginning of the 1989 school year at Moshi NVTC, 20% of the accepted trainees had not yet shown up. Similarly, Espling *et al.* (1988) writing about the spring of 1988, notes that by end of February out of 267 first year students expected by early January, 248 had so far arrived. Some trainees were added after March. The procedures to accept new students are either too slow, or more time must be allotted for selection, to ensure that trainees are in place by the beginning of the year.

¹The REO in Arusha claimed he did not take part in the selection. Presumably his office still does, since Arusha NVTC had corresponded with them.

²Possibly necessary, but certainly ironic, in view of the readiness of Nordic aid agencies to support provisions which give disabled people a chance.

³The primary school marks are well kept secrets and not released to NVTC officials who do the screening. Many would in any case feel "you trust the pass mark".

Those who fail to show up create an opportunity for last-minute topping up.⁴ In consultation with the Director of the NVTD, each Principal may then do some local topping up. The Director has reduced the scope that principals have for admitting trainees in this way, to guard against unfair 'back door admission' at the local level.

7.1.2 The Background of New Trainees

7.1.2.1 Age and Experience 'out of School'

One would expect that they also would be 'too young' by coming directly after completing Standard 7 of primary school. However, most primary school leavers are 'over-age'. According to the 1987 Education Statistics, 33% of the boys and 26% of the girls in Standard 7 were aged 16 or more. By the time they find their way to NVTCs, the average self-reported age is at any rate quite high. Table 7.1 shows the Intake at Moshi NVTC in 1989, as per 24.2.1989, by the trainees' background.

Table 7.1 Intake at Moshi NVTC 1989, as per 24.2.1989

	<u>Educ. Background</u>				Average	Sponsored
	N	St7	F4	nvtc	Age*	trainees
Machinery fitting	39	30	9	-	19+	2
Pattern making	14	-	12	-	20+	-
Refrig/air cond.	23	12	11	-	21+	-
Blacksmith gener.	25	17	8	-	20	-
Pipefit/boilermch	15	-	15	-	22+	-
Foundry	23	17	6	-	19+	-
Ind. electricity	18	1	4	13	21+	-
Diesel mechanics	19	-	3	16	21+	1
Instrument mech.	18	10	8	-	20+	-
Electronics	20	-	3	17	21+	1
Tool & die making	13	-	3	10	21+	-
Machine tool rep.	12	-	-	12	20+	1
Total	239	87	72	80	20+	5

* Computed as: Average Age = (1989 - Year of birth - 0.5)

Source: Moshi NVTC

We see that the 1989 incoming class at Moshi NVTC had an average age around 20, according to the registers completed there, based on information supplied by the new entrants themselves. This is far older than the officially intended leaving age from primary school (about 14). The form 4 leavers and those who have already spent a year at another NVTC naturally raise the entrance age to Moshi NVTC, but even so, in trades that mainly recruit directly from primary school (Foundry, Machinery Fitting) the average age is not

⁴For example, Chapter 5.3.7 shows that there remains much slack capacity at Moshi NVTC, 6 years after it opened.

much lower. Närman (1987:12) noted the fairly wide age span of Moshi trainees in the group entering in 1987, but the bulk (46%) were in the 18-20 range.

The total number with secondary school background will be higher than shown in the Table, because some of those who come from another NVTC will have been to secondary school. Närman (1987:17) showed that among those in the 1987 Moshi class who have come the route through another NVTC, most had secondary school. Incomplete tracer data for the class of 86 and 84 also showed that about 40% of those 'from NVTCs' having a secondary school background. *At Moshi, it is only Pipefitting & Boilermachinery which accounts for only 6% of trainees, which formally requires form 4.* Nonetheless, one can probably conclude that 40-50% of those who have entered Moshi NVTC have had a secondary school background.

Athumani and Kombe (1989) in their tracing of 1982-88 Tanga trainees in certain trades, report provisionally (from the 23% which had been traced) that about 2/3 of the trainees were admitted when they were at least 19 years old.⁵

Table 7.1 also shows the weakness of recruitment by sponsorship from industry - at Moshi where 'close links with industry' was so important in the first plans. Very few come this route. In general, whether sponsored or not, *very few trainees have any kind of previous working experience.* Närman (1987:17) notes that among the 1987 Moshi class, about 80% had never been employed before entering the Centre. However, from less complete samples of earlier years, the proportion reporting some previous employment was higher.

Policy now favours trainees direct from primary school, but the data show nonetheless that a high age at entry is typical. One would think that coming directly from school without any experience from 'life outside' would be a weakness in vocational training. However, the mainstream opinion among NVTC principals is firmly the opposite: that trainability withers when youth is out of school! It was stated, as an argument against the old system of 'traditional admission': *"Some had been 4-5 years out of school; they had for example been selling vegetables in the market. They were difficult to discipline"*. Another principal put it: *"It is better to take them directly from primary school...when they have been out of school for 5-6 years, some have been thieves...They are used to money and cause disturbance more easily..They hide tools."* A counsellor said: *"Theft is common... It is the older ones who bring problems, especially in relation to girls. The younger ones don't know what to do and are therefore easier to control"*. In general, trainees are not much trusted and the attitude towards them can be one of rather diffuse authoritarianism: *"You don't allow the trainees to go home. But they are allowed into town on Wednesdays and Sundays. If you allow him to go home, you don't know what he is doing..he could go to a disco, to a film or be stealing."* Older trainees then seem a bit more 'contaminated' and less malleable. This suspicion against those who come in from the hurly-burly of the cruel 'real world' may well be one main reason why it is difficult to get momentum behind workshop-based evening classes, or short courses for workers in industry. It is probably felt that the new admissions system reduces the risk of trainees being 'contaminated'. It is also felt to be more just, by spreading the net more widely, though some commentators worry that decentralizing the first screening to the Regions will simply spread opportunities for favouritism more widely.

⁵Sometimes instructors suspect that certain trainees, looking small and boyish next to the workbenches, were 'under-age' entrants to primary school and still 'too young' for training. The only information NVTCs have about the trainees' age is what the trainees themselves report.

7.1.2.2 Social Bias - Parental Background

It is evident that at least at Moshi NVTC, about which data are available, *recruitment has been socially biased, strongly in favour of the children of Tanzania's small educated elite of modern sector wage-earners.* In Volume I of the Tracer Study of Moshi trainees, Närman (1987: 13-14) reported father's education of nearly all trainees who recruited to Moshi NVTC in 1987 (the '87 group). He also presented information on those who had started in 1986 but who in 1987 had continued to a second year at Moshi (the '86 group). Finally, an attempt had been made to trace as many as possible from the group that had been admitted in 1984, by interviews or by mail. Table 7.2 shows the educational level of fathers, of these groups.

Table 7.2 Educational level of fathers of three groups of Moshi NVTC trainees

Educ. level	'87 group		'86 grp (2nd. year)		'84 group	
	N	%	N	%	N	%
No inform.	3	(1)	3	(3)	-	
None	1	(0)	3	(3)	6	(6)
Literate	16	(7)	4	(5)	18	(18)
Primary	92	(40)	41	(46)	48	(48)
Secondary	83	(36)	30	(34)	19	(19)
Univ/equi	33	(15)	8	(9)	8	(8)
Total	228		89		99	

A strikingly high percentage of these trainees have well educated fathers. For those admitted in 1987, *half of the fathers had secondary school or more. Fifteen percent of the fathers had even been to university!* For comparison, even as late as 1984, only 3% of the relevant age group attended secondary school in Tanzania.

Less complete complete information was available on the '84 and '86 groups. But the nature of the biases in recruitment is similar. Närman also presents tables on the educational level of the trainees' mothers and on the parents' sector of employment. Given Table 7.2, the patterns are what can be expected - relatively well educated mothers, and dramatic overrepresentation of the children of fathers (about 40%) who have some kind of office/service employment in the modern sector.

It is possible that Moshi with its high level of equipment and extensive presence of foreign aid activity has a more socially select end product of the selection process than humbler NVTCs. Some findings are available for Tanga NVTC, as reported by Athuman and Kombe (1989, p 10) in NVTD's own tracer study of trainees. The Tanga study had by late 1989 traced 23% of a target sample of 602 trainees in four selected trades (Motor Mechanics, Fitting & Turning, Electrical Installation, and Masonry) who were in basic

training during 1982/83-1987/88. The interim coverage of 23% is too small for reliable conclusions. But of the 154 who had been traced, 73 (roughly half) reported that their father/guardian was "employed". Another 18 said "private business" whilst only 60 (35%) were agriculturalists. Parental education was regrettably not reported. We can at least conclude that at Tanga too, the recruitment of trainees comes very disproportionately from Tanzania's urban, modern sector with 'educated' parents for whom an NVTC becomes a sought-after second choice to fall back upon in the struggle for opportunity on behalf of their offspring.

The modern sector bias in recruitment could be even greater in day schools, which cannot cast their net so widely as can boarding schools. At one day school we visited the principal estimates that 60-90% of the trainees' parents have a "wage job".

One would also expect some tendency towards occupational reproduction. The Tanga sample covered so far by Athumani and Kombe (1989) shows that many trainees have a "craftsman" relative, but the Swahili term for craftsman, *fundi*, is a broad one and "relative" can also refer to remote relations.

7.1.1.3. Gender and Geographical Biases

Admitting 60% students through the Regional Education Offices was in part a measure to promote equity. It has the effect of encouraging girls to enter traditionally male trades. There is no quota of girls among those applying directly or those sponsored. But it is common to use a quota of 1/3 girls in the initial nominations coming from the Regional Education Offices. Chapter 2.2.1 has already discussed the general representation of girls in the system of NVTCs. Table 2.1 showed that about 20% of those initially admitted are girls. At Moshi the percentage is a bit less among the 1987 Intake (18%). But because of high drop-out among the girls (15 of the 42 girls who started), the Moshi 1987 percentage is down to 12 among those finishing basic training. For comparison, Närman (1987:11) in his nearly complete sample of those in the '87 group who had actually shown up, also found 12% to be girls. Girls are concentrated especially in certain trades at Moshi (Mechanical Draughting, Refrigeration & Airconditioning, and Electronics). As was shown in Table 2.2, it is in the most purely male trades that girls are most prone to drop out.

The effort to recruit more girls, which has been welcome by SIDA, is constrained by insufficient boarding facilities. Insufficient boarding also constrict attempts to widen the geographical coverage, since 'out of district' trainees often need to be boarders. In 1989, there were 1,150 boarding places available. These places were distributed as follows - Arusha: 55, Singida: 40, Tanga: 165, Dodoma: 40, Uliamkuru/Tabora: 100, Mwanza: 150, Mpenda: 280, and Moshi: 320. On equity grounds there is therefore pressure to extend boarding. For example, Athuman and Kombe (1989) recommends boarding facilities for girls at Tanga NVTC. But, on top of the required investment, boarding greatly adds to the already high recurrent costs per trainee (Cf. Table 7.6, below, and Chapter 6.5). Like recruiting girls, boarding is an example of equity policies having a clear efficiency cost.

NVTCs are supposed to be national centres, but each centre tends to recruit disproportionately from its own region and adjacent ones. At day centres this the only

possible pattern.⁶ Table 7.3 shows the degree of regional clustering in the 60% of recruitment which occurs through nominations from Regional Education Officers. It also shows that the degree to which, within the noted constraints, a region 'gets its fair share' varies greatly. Dar es Salaam appears to be very favoured. On the other hand, there are some regions with no recruitment to NVTCs at all: Pwani (or 'Coast', outside of Dar es Salaam), Rukwa, and Singida. The location is shown in Appendix 6. These three regions account together for some 9% of enrolments in public primary schools. I was told that in the case of one of these regions, there have been irregularities in earlier recruitment which had caused NVTD to stop using the Regional Education Office concerned. Lacking recruitment from Rukwa is explained by the planned opening of a centre there, though this had not yet occurred. Some other regions are greatly underrepresented: Shinyanga, Mbeya, Arusha, Ruvuma, Mtwara, and Mwanza.

These data from the NVTD show only 35 from Kilimanjaro (in which Moshi NVTC is based. But only 35 would be a strange underrepresentation from a region which is one of the most enterprising and educationally advanced in the country. Kilimanjaro has 6.7% of the national primary enrolments, and no doubt a much higher proportion of secondary enrolments. One should bear in mind that Table 7.3 only refers to intake through REO nomination. The apparent underrepresentation (only 35) could be more than compensated by good opportunities in Kilimanjaro for 'traditional admission'. Data directly collected from trainees at Moshi NVTC imply this.

About half of the trainees at Moshi come from other routes than nominations by REOs. Looking at all Moshi trades, Närman (1987:15) found that among the 1987 intake to Moshi NVTC almost half of the 228 trainees were from Kilimanjaro Region. Further, 25 were from Dar es Salaam, 17 from Mwanza, and 13 from Tanga. The remaining 38 were from Mara, West Lake, Arusha and Mbeya. His figures include all new trainees, not only those nominated by REOs. Espling *et al.* (1988:20), in further tracer study work, examined the home region of Moshi trainees from 1985 to 1988, showing that the proportion from Kilimanjaro increased during these years from 46% to 60%. *One can reasonably conclude that though Moshi is a 100% boarding establishment, most trainees have come from Kilimanjaro region in which the Centre is located.* How far this pattern has been modified somewhat from 1988, is not clear.

Returning to Table 7.3, one notes that fully 420 (about 1/3 of the REO nominees) came from Dar es Salaam, leading to very considerable overrepresentation from the capital. This is due to the large impact of Dar es Salaam NVTC being a day school. One would expect that the proportion of all trainees who come from the capital would be even higher, when sponsored trainees and 'traditional applications' are also included.

⁶Day centres: Dar es Salaam (at Chang'ombe), Mara, Lindi, Kigoma, Iringa, Mtwara, Shinyanga. Partly day: Dodoma, Tabora, Mpanda, Morogoro. Only boarding: Moshi, Arusha, Mbeya (planned).

Table 7.3. Intake to NVTCs directly from primary school through nominations by Regional Education Office, trainees entering October 1988 or January 1989*

Education Office, trainees entering October 1988 or January 1989*													Public primary enrolment 1987	Repre- senta- tion index**		
N V T C's																
From: Region	Mwanza	Tanga	Dodoma	Songea	Arusha	Lindi	Kagera	Mara	Iringa	Chan'- gombe	Moshi	Moro- goro	Total	%		
Arusha					34								34	2.8	5.5	0.5
D. es Salaam										420			420	34.4	4.5	7.6
Dodoma	3		37										40	3.3	5.1	.7
Iringa	13	9	2						42				66	5.4	6.5	.8
Kagera							72						72	5.9	6.0	1.0
Kigoma	18	14											32	2.6	3.7	.7
Kilimanjaro											35		35	***	6.7	***
Lindi		9	4	7		48							68	5.6	2.4	2.3
Mara								61					61	5.0	5.0	1.0
Mbeya	4	10											14	1.2	7.0	.2
Morogoro	14	14		1								32	61	5.0	4.9	1.0
Mtwara	11	9	1	3									24	2.0	3.6	.6
Mwanza	44	12	6										62	5.1	8.7	.6
Pwani (coast)													0	-	2.7	0.0
Rukwa													0	-	2.8	0.0
Ruvuma		4		21									25	2.1	3.8	.6
Shinyanga	15												15	1.2	7.3	.2
Singida													0	-	3.4	0.0
Tabora	21	16	3										40	3.3	4.2	.8
Tanga	13	41	12										66	5.4	6.1	.9
Total	156	138	65	32	34	48	72	61	42	420	120***	32	1220	100.-	100.-	

*NVTC's admitting trainees in October: Mwanza, Tanga, Dodoma, Arusha, Lindi. NVTC's admitting in January: Kagera, Mara, Iringa, Chan'gombe, Moshi, Morogoro. NVTC's considered to be the more established and better equipped ones: Moshi, Dodoma, Chan'gombe, Mwanza, and Tanga.

**This index is computed as follows: Intake % divided by primary school %. Above unity means that the region is over-represented, below unity means it is under-represented.

***Incomplete information has been supplied about recruitment to Moshi NVTC through Regional Education Offices. 120 places are filled this way. No complete distribution as to region of origin has yet been supplied, but the NVTD states that in 1988 there were 65 from Kilimanjaro region, and in 1989 there were 35.

Mwanza, Tanga and Dodoma NVTCs show considerable geographical spread of the incoming students.

These biases in selection of trainees (by region, gender, and social origin) are striking. They are of course politically important. That is no reason to cover them up. Rather, they should be carefully monitored. Selection will inevitably be a 'touchy issue' when places are so scarce, and there will be rumors of favouritism and petty corruption. The best way to build public trust in the fairness of the procedures is to make sure that it *is* fair and to make this visible. This means encouraging public access to relevant information rather than keeping it under a cloak. NVTD's willingness to make information available to the Evaluation about selection procedures and statistics is therefore positive.

7.2 Curriculum and Courses

7.2.1 General Impression of Curriculum Structure and Syllabus Documents

This section draws heavily on Hultin's (1989) report.⁷ He reviewed some 25 samples of curricula and syllabuses, which were produced during visits to NVTCs at Moshi, Tanga and Dodoma. Some impressions were also gleaned from Morogoro and Dar es Salaam NVTCs, and the regional centre under development (Cf. Chapter 4.4) at Kilosa.

One wonders if updated versions reach the schools, and if drafts in fact are finalized (but see also Chapter 5.2). Several had obviously been developed some years ago but were labelled 'drafts'. The contents and comprehensiveness of the samples given to the Evaluation Mission varied considerably. Some contained only a one page listing of key words or a superficial description of what should be taught during the course. Some of the 'Moshi syllabuses' were even in the Swedish language! Other samples were comprehensive and dealt in some detail with objectives, content, methods and performance. Both Tanzanian instructors and Swedish experts at Moshi NVTC were reasonably satisfied with the courses in electronics, tool and die, mechanical draughting, machine tool repair and instrument mechanics. It was however claimed that some recently developed curricula and syllabuses "*had not yet come to Moshi*". Formal approval of some syllabuses was also lacking.

There is room for more cooperation within the system. Outside Moshi, the criticism was sometimes encountered that syllabuses in trades taught at Moshi had been standardized on 'Moshi equipment' - a level of equipment which was too high for other centres. In some areas there is a bewildering proliferation of closely related trades, probably as 'footprints' of different donor influences (See Chapter 2.2.2). Further proliferation now seems to be under way at the Irish supported Kilosa regional centre, which will be better equipped than most national centres.

⁷The views expressed in this Section are those of the author, not necessarily in all respects those of Mr Hultin (especially concerning the critique of the 'station system').

The decision to extend basic training to two years raises the question of whether this would be effective and affordable. Such a change would under all circumstances require a careful review of each individual curriculum and its content. Introducing 2 years of basic training in all trades can then prove too rigid. But the need to decide on length and new contents is an opportunity to review thoroughly all existing syllabuses. Such review work should be field-oriented and should include discussion with employers, former trainees and instructors. Links with subsequent evening class contents and ideally also apprenticeship skills should be explored. The curriculum department of the NVTD needs further strengthening to cope with such demands. Such continuation and follow-up of current work on curriculum and syllabi could be a useful future contribution for Swedish technical assistance. In such review work, it is important that the Curriculum Development Department liaise closely with the Vocational Teacher Training College at Morogoro and with all major donors, each of which inevitably will have its own 'curriculum baggage'.

7.2.2 Teaching and the Station System

In many developing countries, there is little practical work in vocational schools. In the NVTC system there is much of it. The balance between practice and theory is roughly 2:1, and some 25 periods is spent in the workshop each week. In addition, in the newly established centres which are renovated or even partly built by self-help work, trainees in the building trades do much of the work. These are strengths of the NVTCs, compared to many other countries.

The workshops were fully used and even in some cases crowded during the visits of the Evaluation Mission. Average class sizes in day classes were 16 in Moshi and 25 in Tanga, and in afternoon classes 25 and 21 respectively. These figures seem reasonable though the trainee-instructor ratios tend to be lower, especially at Tanga (See Chapter 6.4).

A serious obstacle to efficient teaching appears still to be shortage of consumable materials, such as gas for the blacksmith and welding trades, sheet metal for some other trades. Such materials were still (Spring 1989) sometimes locally unavailable even if the needed cash was at hand.

At Moshi NVTC and in some Swedish supported trades at Tanga NVTC, the 'station system' has been the main model for workshop organization and teaching strategy. The system implies that the trainee moves in a planned sequence among the work stations. It is supposed to work as a kind of programmed, individualized instruction aiming to help both slow and fast trainees. It is also supposed to teach the habit of working independently to workdrawings and written instructions. Each 'station' is supplied with such instructions setting out the tasks to be done there. Crucially, the system purports to save expense by making more intensive use of equipment, with each trainee rotating according to an individual schedule, rather than all needing access to the same pieces at the same time.

This system is controversial in Sweden. In particular, it is viewed very critically by one of the foremost Nordic researchers on vocational training: Lennart Nilsson (1981) reviewed research on the developments in Swedish vocational training during the 1970s. There was in the thought behind the station system a conscious desire to model training upon the production-technology of modern industry, rather than upon that of craftsmanship. It has tended towards fragmented skills training isolated from real application, geared to meet, bit

by bit, the profile of required skills revealed by analysis of occupations. *According to Nilsson, it has become increasingly clear that important qualities are lost or not developed by this approach to training.* It is important to consider how a training system looks from the point of view of the trainees. The system weakens the contact between trainee and teacher, as well as the contact among trainees. The social stimulus which lies in shared learning is not called into play. Tasks are fragmented rather than whole and authentic. Mechanic trainees want to 'tinker with cars' rather than a series of components at different stations. Crucially, the Swedish experience has been that the system is especially hard for pupils with severe reading and writing difficulties, or for those who are poorly motivated. This was stressed by the Commission on the Inner Work of the School in 1974.

Nilsson's critique is not shared by all observers of training in Sweden. Some would argue that the station system there has been improved since the time when he first subjected it to scrutiny. But it is important to note that the system which has been exported to Moshi has at home been strongly criticized, and that there are other arguments against it in Tanzania, than those which might pertain in Sweden.

Even more true than in Sweden, dependence on written instructions at the work stations may not work well in Tanzania. Can the trainees understand them? The problems which trainees have in understanding simple English are severe (See 7.2.3, below). Little progress has been made in translating the instruction sheets and the technical terms into Swahili. At present, after more than 6 years of operation, an adequately stocked system of instruction sheets in English for the workstations is not in place across the trades taught. Will the sheets be replaced when they are worn out or disappear? In general, to depend on written instructions is unrealistic. *Workstation learning will require much backup by direct guidance from a teacher.*

The system is intensive on instructor time. More individual guidance is needed when trainees are working at different tasks at any one time. It is instructive to note that the Swedish experts at Moshi - practically one in each trade - who are really 'supernumerary' and without responsibility for normal teaching duty, are nonetheless much involved during workshop practice because 'all hands are needed' then.

Trainees need to have some initial readiness to work on their own and to understand the logic of the system and the brief manuals or worksheets at each station. It is for advanced trainees with some experience behind them that this might work, not for greenhorns who need to be taught the basic tools of the trade.

The station system is demanding on workshop management. The system needs to be built into the early planning of workshop layout and equipment lists; instructors need to work out individual plans for rotating trainees among stations, and carefully to record the rotation.

The system is vulnerable by being dependent on fewer pieces of equipment of any given type. Maintenance of equipment becomes even more crucial than normally. This in itself raises questions about the appropriateness of this system when maintenance is poor and spares are hard to come by.

The pedagogic approach that is promoted now varies among the donor-assisted projects in the NVTD. The 'Swedish' station approach coexists with others which also have their rationales. Agreement is needed between the NVTD and all the donors concerned, on some broad shared principles which instructor training should be based on. Otherwise, the risk

of counterproductive rivalries is great - 'to have or not to have the station system could become a divisive issue in instructor training. The NVTD needs to make up its own mind about what the national approach should be. To run a station system in a Swedish supported enclave, without long-run support from teacher training, is simply not viable.

Judgements on these issues clearly differ. But I believe that the station system is doubtful as approved and realistic best practice after Swedish TAPs have left the Sections in which they now back this system up. I see this system as insufficiently 'robust' for the realities of the training context in Tanzania.

7.2.3 Skills in English and in General Subjects

No doubt, trainees very meagre comprehension of English, and English is officially the medium of instruction in the NVTCs. Inadequate preparation in English is not at all limited to trainees coming directly from primary school. The very strong concern which Swedish experts at Moshi have about trainees' inadequacies in English is probably connected with the importance of which written instructions are supposed to have in the station system. In frontal classteaching, by a Tanzanian instructor who can shift into Swahili in order to explain what cannot be communicated in English, the language problem is likely to be much less pressing. Swedish experts are unable to use Swahili in this way, as a supportive language, and the Swedes' own command of English is often rather deficient too. Differences between the Tanzanian and Swedish accents may also cause problems. It is of course useful for trainees to, e.g, read manuals in English. But one would think that Swahili as the existing medium of the East African *fundis*⁸ would have some utility in the training of Tanzanian craftsmen. It is in fact normal to use Swahili when taking Trade Tests Grades III and II (See Chapter 2.2.5). *Donor agencies should welcome more official recognition of the role that Swahili already plays in vocational training and in the trades themselves.*

Nonetheless, unsatisfactory knowledge among the entrants in English, Mathematics, and Science was by far the most commonly mentioned quality issue mentioned during interviews by VTC staff and students. Some of them suggested that the entrance levels should be raised from Standard 7 to Form 2 or Form 4 in order to remedy for this problem. But on both financial and educational grounds it seems preferable to *continue the intake from Standard 7 for most trades and then to offer a one-semester preparation course in basic general subjects as a prelude to training.* In vocational training based on prior secondary schooling there is a greater risk that trainees will have low motivation for 'getting their hands dirty' and that they will identify themselves more less strongly with workers in their trades (See Chapter 1.4).

⁸Craftsman, handyman - often with trade skills acquired informally.

7.3 Physical Resources⁹

Moshi NVTC is well equipped with classrooms, laboratories and workshops. Some of the workshops are designed to take a class of 15 or 20 trainees but are now often overcrowded with some 30 first and second year trainees. An increased use of a double shift system and a better sharing of workshops among trades could ease the situation.

Tanga NVTC is less fortunate. It needs one or two additional theory rooms, a laboratory and a workshop. Other facilities in Tanga are used as in Moshi, *i.e.*, 50-60% of the time available. *Such a low utilization rate of expensive facilities should not be accepted as normal. Every effort should be made to improve these rates.*

Maintenance services, safety features, lighting and ventilation at Moshi and Tanga seemed satisfactory although first aid equipment was sometimes missing. Cleanliness was good. Communal areas, administration offices, library facilities and central services appeared good. *We observed that the school libraries were not much used.* Närman (1987), reporting from a stay at Moshi NVTC during February to April 1987 observes that the library was then never open to trainees.

Though equipment manuals and instruction sheets were generally available at Moshi and at the SIDA aided parts of Tanga, the textbook situation in trade theory is not good. *There is a shortage of relevant textbooks. SIDA should offer assistance to remedy this situation.*

There were considerable variations among the NVTCs as to the condition of the equipment. At Moshi, 90-100% of the equipment was in good working order. At Tanga, conditions were reported to be good in fitting & turning, tailoring, and motor vehicle mechanics. But much equipment was not in good working condition in the other trades. Stronger efforts are needed in maintenance of equipment maintenance and in producing spare parts locally. This is a familiar call in development aid projects.

7.4 The Learning Achievement of Trainees

As noted earlier, there is some 'wastage' during the admission process in that capacity is not filled, at least at Moshi NVTC. But after arrival, the dropping out rate is relatively modest. In 1987/88, overall some 9% did not complete the one-year basic course. It was 7% at Moshi and 10% at Tanga (See Table 2.1, Chapter 2.2.1). About 10% appear to fail in the examination at the end of the basic training year.¹⁰

During the extensive interviews with Moshi trainees and former trainees, nearly all trainees thought that the period of basic training is too short. They also expressed quite unanimous satisfaction with the teachers, especially the Swedish experts, and with the teaching at the Moshi centre. They thought the equipment and facilities are good there (Espling *et al.*, 1988:7), but that the time is too short to learn enough skills with which to face the world.

⁹This section draws heavily on the report by Hultin (1989)

¹⁰It is unclear whether 'failing' in the exam is effectively registered as 'dropping out'. If so, very few indeed would fail to complete the course for **other reasons than failing in the final examination**. If the 10% came on top of in-course drop out, the combined 'wastage' during the basic training stage would be 18% - which would be a worryingly high proportion. At any rate, for the entire training programme, the apprenticeship period included, it is clear that the wastage rate is very high indeed (See Chapter 8).

During Basic Training the trainees are exposed to an assessment and examination system which covers both practical skill, trade theory, and various academic subjects. The opinion about the relevance of tests and examinations for the basic certificate varied much.

The tests are to various extent drafted and suggested by the VTCs, but the overall responsibility about content, execution, working and grading of the tests rests with a central Divisional body. Trainees thus sit for the same tests within each trade and subject at the same time all over Tanzania. There have been a number of problems with these examinations. Papers have not always arrived in time. Sometimes lack of materials or equipment has made it impossible to conduct the practical part of the test. It was also claimed that some practical tests were unreasonably time-consuming.

The Evaluation mission reviewed a sample of theory tests in several trades and in English, Mathematics, and Science. The NVTD has to mark close to 2000 tests annually from basic training. The format therefore has to make possible mass processing. This renders the tests in many ways superficial. *Only a few questions would tell anything about the trainee's explorative, analytical or synthetic ability.*

The test questions are not made public after the exams, but retained by the NVTD as confidential matters. We think this is a pity. *If they were made public they could serve as a useful guide to trainees and instructors. The quality of question setting would also benefit from open scrutiny.*

However, the tests are not decisive for the final marks at the end of the year. The final marks in the different subjects are 30% based on the final exam, and 70% on assessment of the overall performance of the trainee during the year. An overall summary mark is awarded based on this total assessment. Table 7.4 shows the distribution of these marks for Moshi, Tanga, and Iringa NVTCs. Of these three centres, Moshi has the best facilities and equipment, and Iringa is the least well equipped. There is a tendency for trainees at Moshi to get better marks and those at Iringa to get poorer marks.

**Table 7.4 Results from 1988 examination for basic certificate.
Percentage distribution of marks.**

Mark	Moshi	Tanga	Iringa
A (highest mark)	-	-	-
B	13	3	-
C	47	43	36
D	29	46	54
E	11	8	10
	100%	100%	100%
	N=220	N=262	N=56

Source: Hultin (1989), p. 9.

At three NVTCs - Tanga, Iringa and Arusha - we were able to analyse the detailed subject marks which trainees receive at the end of the year. Though these are not necessarily a cross section of the NVTCs in all important respects, the data makes it possible to ascertain whether there is a clear pattern of performance in different subjects, and also how performance in different subjects is inter-correlated. Table 7.5 gives mean marks and some key inter-correlations. Marking is on a 'percentage scale' so that high percentage marks indicate good performance.

The statistics in Table 7.5 were produced during fieldwork on a pocket calculator. Therefore, to save time, 'weighted' overall coefficients were obtained, as rough measures, by weighting averages for each centre by the number of cases.¹¹

First of all, by looking at the row showing mean mark for all subjects (not all of which are shown here), it is clear that the 30 candidates at newly established Arusha VTC outperformed those at Iringa and even Tanga - a longer established centre. Notwithstanding the trend noted in Table 7.4, *there is no iron law whereby longer-established and better equipped centres always do better* on these exams (which are partly externally assessed) than newly established 'self-help' centres.

At all three centres, it is clear that *trainees tend to get far better marks in the practical trade* than in the various theory subjects. And among the theory subjects, they clearly do better in trade theory than in other subjects. In a trade training centre, this is probably a desirable pattern - though we have no way of assessing how 'easy' it is to get a good mark in the different subjects.

The poor performance in Mathematics is striking.

Bearing in mind the key role played by English proficiency at selection to the centres (See Section 7.1, above), it is interesting to ascertain how well proficiency in English among those who have been selected is correlated with performance in practical trade skills. One notes that, for the three centres combined, the correlation with English (col. 9) is quite weak: 0.43, which means the English mark would account for only 16% of the variance in practical skills. Trade theory and technical drawing are notably more strongly correlated with practical trade skills, though there is also variation among the centres.

¹¹Calculating directly overall coefficients for pooled samples could well yield different coefficients since the formulas would then be different.

Table 7.5. Examination Statistics by Subject. Tanga, Iringa and Arusha NVTCs 1988.

Subject	C o r r e l a t i o n									
	M e a n M a r k				with mark in practical work				With	Weighted Standard deviation
	Tanga	Iringa	Arusha	Weighted average	Tanga	Iringa	Arusha	Weighted average	Mean weigh	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Trade practical	59.0	59.7	63.5	59.5	n.a.	n.a.	n.a.		.63	10.0
Tech. drawing	50.6	39.7	62.3	49.9	.60	.53	.05	.54	.84	15.2
Trade theory	48.6	49.3	61.9	49.8	.63	.71	.38	.62	.88	15.6
Science	42.8	39.9	60.9	43.8	.47	.39	.32	.44	.83	13.2
Mathematics	41.8	40.7	44.1	41.8	.52	.23	.41	.46	.79	17.3
English	46.2	42.9	50.9	46.1	.51	.13	.25	.43	.82	14.2
Mean all subjects	48.3	47.2	57.7							
N. of candidates	262	56	30	348	262	56	30	348	348	348

(5) The 'weighted average' is obtained by weighting the mean mark averages of each centre with the number of candidates.

(9) This 'weighted average' is the mean of (6), (7) and (8) when each is weighted by the number of candidates at each centre.

(10) This correlation of each subject with mean mark is an overall for all three centres, obtained by weighting the correlation for each centre, as for other weightings.

*The weak association between English skills and practical skills indirectly sheds some doubt on the validity of English skills as a selection criterion to vocational training.*¹² This agrees with common sense: why should skills in learning a foreign language be a good predictor of practical skills? Indeed, insufficient command of English is a common problem for expatriate teachers in practical subjects, whose expertise in their trade is not in doubt. Research from Kenya has also shown similarly weak relationships between language skills and practical trade skills (Lauglo, 1985b, p.18).

Another important question is how strongly performance in each subject is correlated with the overall mark at the end of Basic Training? What does the final mark, which is the main signal to employers, really represent? The overall letter mark, ranging from A to D (See Table 7.3) is mainly a categorization of the mean - or sum - of the numerical subject marks in all subjects taken. Column 10 in Table 7.5 shows the correlation of each subject mark¹³ with the overall numerical 'mean mark' - the correlation being in this case a weighted average of those obtained within each of the three VTCs covered. It is interesting to note that it is the practical trade mark which is most weakly correlated to this overall performance measure, the various theory marks are evenly and much more strongly picked up by the summary measure. *If practical trade skill is the crux of training, and of what employers demand, then the overall mark used in the Certificate of Basic Training is biased away from such skills and towards the 'theory side' of the course.*¹⁴ Thus, the findings give some support to the view that NVTD should continue to search for a way of testing 'practical ability' at selection, and that practical skills should count more in determining the final letter grade which trainees receive at the end of the basic training course.

7.5 The Local Cost of Basic Training

Some commentary of this is already found in Chapter 4.2, 6.5, and 5.3.7. To briefly recapitulate: No up-dated and reliable unit cost estimates are available which enable us to compare the cost per student year in a vocational training centre with the cost in primary school, secondary school, or technician training. But the rough figures which have been used by others suggest that though unit cost in a VTC is much higher than in primary school (12 times was suggested for 1986), secondary school is more expensive and technician education has much higher unit recurrent cost than the VTCs (See Chapter 6.5). It is a matter of regret that our study has not been able to come up with firmer data. But, in any comparison with secondary or technician education it should also be borne in mind that the basic training course in a VTC is shorter (one or two years) and that this is a major 'saving' compared with longer post-primary alternatives.

¹²It is recognized that in the pool of applicants, with a larger range of English skills, it is possible that there was a stronger association with practical 'trainability' than what this coefficient suggests. Of course, poor reliability of either mode of assessment would also understate the real association.

¹³Some subjects are not included in this calculation. Kiswahili and Political Education are commonly also taught.

¹⁴ In converting the average score into a letter mark, it seems that examiners sometimes take a 'global view' and see to it that those who demonstrate good practical trade skills 'get through' even if their theory marks are less than the formally required minimum.

There is bound to be, within the NVTD system, very great variation in unit cost among the different NVTCs: centres and sections which are externally funded will usually operate with higher unit cost than others, because the donors involved also contribute to non-salary recurrent expenses.

Chapter 4.2 showed that in NVTD's 1988/89 recurrent budget, only 30% was 'personnel' expenditures. Especially because of the badly eroded Tanzanian salaries, it is other expenses which dominate. Compared to the size of that locally financed non-salary recurrent budget (about 73.4 million in 1988/89), the contributions from SIDA alone are quite substantial (Cf. Chapter 5.3.8). The budgeted Swedish contributions (Moshi, Tanga, Mwanza, NVTD headquarters) which were agreed at the 1988 annual agreement, were about SEK 1.25 million or TSHS 21.3 million. It appears that these external contributions do not enter into the Divisional recurrent budget. *Thus, in 1988/89, the local budget commitments to the entire system of more than 11 VTCs plus headquarters, instructor training and trades tests, was only 3.4 times what Sweden was scheduled to contribute as a recurrent subsidy for headquarters operations and 3 of these centres.*

Breakdowns of actual recurrent expenditure, as distinct from budgets, for the entire system are not available. But for Moshi NVTC, where so much Swedish assistance has been concentrated, Coombe has after considerable digging and with valuable assistance from Moshi NVTC staff, mapped in great detail the 1988/89 actual expenses (Table 7.6), exclusive of Swedish contributions.

The total expenses in Table 7.6 of TSHS 15.47 million would amount to about TSHS 47-48,000 per trainee enrolled at Moshi that year, given a total enrolment of about 320. In addition, from Swedish sources there was in 1988 budgeted for recurrent expenditures at Moshi SEK 500,000 exclusive of technical assistance. This would amount to about TSHS 10 million, so that *the combined unit recurrent cost per trainee at Moshi, exclusive of technical assistance, would be about TSHS 80,000 (or SEK 4000 at the spring 1989 exchange rate).*

Table 7.6 Moshi NVTC. Indicative Analysis of Recurrent Expenditure 1988/89 (TSHS '000)

1. Salaries and Allowances		
1.1 Management and administrative staff	564	
1.2 Teaching and related staff	1967	
1.3 Student services staff	285	
1.4 Buildings, maintenance, transport & support staff	200	
1.5 Housing allowance	310	
1.6 Teaching allowance	350	
1.7 Evening class fees	260	
1.8 Trade Test examiners' fees	127	
Sub-total	(26.7%)	4143
2. Items related to management and administration		
2.1 Transport and travelling	30	
2.2 Office and general	40	
2.3 Postage, telephone & telegrams	17	
2.4 Advertising and printing	7	
2.5 Conferences and committees	24	
2.6 Water and electricity	43	
2.7 In-service training	12	
Sub-total	(1.1%)	173
3. Items related to teaching		
3.1 Transport and travelling	30	
3.2 Educational materials	750	
3.3 Library	10	
3.4 Laboratory equipment	25	
3.5 Water, electricity, gas	2207	
3.6 In-service training	72	
Sub-total	(20.5%)	3174
4. Items related to student services		
4.1 Transport and travelling	15	
4.2 Catering expenses	4310	
4.3 Transport of students	72	
4.4 Games and sports	16	
4.5 Hospital services and supplies	189	
4.6 Water and electricity	1380	
4.7 In-service training	12	
Sub-total	(37.9%)	5862

5. Items related to buildings, maintenance, transport and support services	
5.1 Transport and travelling	75
5.2 Plant and vehicles	370
5.3 Wharfage and transportation	535
5.4 Maintenance of machinery and equipment	30
5.5 Upkeep of buildings and other establishments	100
5.6 Minor works	8
5.7 Furniture and equipment	139
5.8 Water, electricity, gas	850
5.9 In-service training	12
Sub-total	(13.7%) 2119
Total	15471

Supplied by Trevor Coombe. Adapted and computed from unpublished data provided by the Accounts staff at Moshi NVTC and NVTD headquarters, July 1989.

This table is indicative and based on provisional figures. It does not purport to be accurate in the accounting sense. But the magnitudes are likely to be reasonably in line with actual expenditure.

No SIDA-funded costs are included.

The total enrolment in the NVTD system is about 2100. The total recurrent budget in 1988/89 was about 105 million. Subtracting from this amount the Moshi component of about 15 million leaves about TSHS 90 million to share among the roughly 1,800 trainees who are in other VTCs than Moshi: an average unit cost of TSHS 50,000 (or SEK equivalents 2500 or so) at these other centres - which is roughly in line with the recurrent unit cost at Moshi NVTC, before the Swedish recurrent supplement is taken into account¹⁵. The Swedish supplement brings Moshi recurrent costs up at least 60% above the average for other centres. On top of that comes technical assistance.

Looking at the breakdown of the Moshi recurrent expenditures during 1988/89, one sees clearly the great expense of boarding: 38% of Moshi's recurrent expenditures are for student services, and nearly all of this is connected with catering and utility expenses for boarding.

The boarding component is substantially more costly than salaries of Tanzanian staff, which account for only 27%.

¹⁵The average recurrent expenditures at other centres would actually be lower than the rough figure calculated here because not all the recurrent expenditure for NVTD is identified with centres. There is tradestesting, teacher training, central staff etc. A breakdown has not been obtained.

Cutting across some other categories too are substantial outgoings on utilities: water, electricity and gas. This adds up to some 4,480,000 or about 29% - which is more than the total outgoings for salaries of all local staff!

In this scheme of things, other teaching-related expenditures than utilities are utterly negligible: only about 6% of the total recurrent budget - presumably because much of this need is still covered by the SIDA grant. It would clearly need to increase very dramatically to compensate for any phasing out of the SIDA grant for teaching materials/parts which stood at about SEK 500,000 or TSHS 8 - 10 million.

Finally, in local terms, the high recurrent cost per trainee year at Moshi NVTC (a total of 80,000 of which 48,000 comes from local sources) can perhaps be put into context by comparing it to what Chapter 6.3 describes as the pay earned by most instructors of these trainees which is in the region of TSHS 40-60,000 a year. But all these figures pale in comparison with the expense of technical assistance at Moshi.

7.6 Technical Assistance Personnel (TAP)

This Section deals only with Moshi NVTC. Technical assistance to NVTD headquarters has been discussed in Chapter 5.2. Technical assistance from other agencies than SIDA has been briefly discussed in Chapter 4. There is a separate report by Frøyland (1988) which examines technical assistance to Moshi in depth. The following draws heavily on that report, possibly with some other nuance of interpretation.

In the plan of operations for the development of Moshi NVTC (See Chapter 5.3.2) and other early concepts, TAP was planned for the construction of the centre, for overall curriculum planning, and for starting up teaching in the trades to be established - most of which would be new in Tanzanian vocational training. It was emphasized that such assistance should concentrate on staff development of Tanzanian counterparts so as to make itself quickly redundant. The early planners had anticipated that 14 experts for 2 years (28 workyears) should largely suffice as TAP. The last expatriate was expected to leave 3 years after the foreseen startup of training at the centre.

The ratio between capital costs and TAP was expected to be roughly 3:1 in the 5 year project period.

One should not exaggerate the intended fixity of the plan. SIDA's sector support style means 'rolling planning' and readiness to adjust in order to see implementation through. It is also clear that development aid to vocational training requires readiness to give long term support and to plan in a flexible way (See Chapter 1.3.2.5). Nonetheless in 1989, six years after training started up, and 7 years after experts arrived in force to prepare facilities for teaching (See Chapter 5.3.6), there were still 14 expatriates at Moshi. By the end of 1989, SIDA must allocated more than 100 workyears to the project - excluding consultancies and 'overhead worktime'. As of 1989, the cost to SIDA of keeping an expatriate expert in Tanzania is roughly SEK 600,000. This is cost to SIDA, not pay

drawn by the expert which is very much less¹⁶. But in terms of resources used, the cumulative cost to SIDA, expressed in 1989 prices, must have been more than SEK 60 million by the end of 1989 (equivalent to about TSHS 1,140 million at 1989 exchange rate).¹⁷

Perhaps a more meaningful comparison is that the cost in donor funds for 13 TAPs in 1989 is about SEK 7.8 million or about TSHS 149 million, whilst the total local recurrent expenditures of Moshi that year was about TSHS 15.5 million (Cf. Table 7.6), and the total local salary/wage budget for the whole NVTD system was about TSHS 32 million.

Lovén (1989: 15) estimates in 1989 SEK equivalents that the total cumulative Swedish support by end of 1988/89 would be about SEK 148 million. Roughly estimated at least 60 million (or 40%) will have been technical assistance. The TAP percentage is higher in recent years, since construction is nearly completed. After the completion of the main construction in January 1983, close to 75% of annual grants has been allocated to Swedish personnel. As Frøyland therefore notes, in assessing the success of SIDA support to Moshi NVTC, one must pay particular attention to the effectiveness of institution building through TAP: transfer of knowledge and staff development.

The plan has been to reduce TAP at Moshi. In the proposal from the Tanzanian government for 1988/89-1990/91 support from Sweden, the Director of NVTD stated that *"It is planned that during the next three years expert support will be reduced by 50% as more and more local counterparts assume full responsibility in their respective workshops."* During the spring of 1989, in connection with discussion about contract renewals of TAPs at Moshi, the Evaluation mission was given the clear impression that technical assistance would be scaled down by 1990. Proposals for a phased and orderly withdrawal were being discussed. As of March 1990, no reduction appeared to have occurred. *Obviously, the 1977 plan of speedy Tanzanianization was grossly optimistic. Very expensive and initially unplanned additional TAP has occurred.*

It should be noted that the very concept of training at Moshi NVTC - specialized industrial skills for which no formal training was available - called for expatriate specialists. There was not local expertise for this kind of centre. With the benefit of hindsight one can ruefully argue that to replace expatriates in such highly specialist trades as, e.g. Foundry, Tool & Die, and Pattern Making is no quick task. Local instructors in more broadly based trades can no doubt be drawn from larger pools. But also in some of the trades with presumably larger local pools (Mechanical Drawing, Blacksmith General) there were in 1989 still TAPs alongside Tanzanian colleagues. Mechanical Fitting is one trade which has been completely Tanzanianized for some years.

A main strategy for Tanzanianization has been to send Tanzanian counterparts abroad for training and upgrading. Even during the most recent years, after the early main wave of training Tanzanians abroad, the budgeted Swedish grant for staff development was SEK 3.15 million for the years 1987/88-1989/90 combined.

¹⁶Basic taxable income, allowances and social security is about half of the cost. The other half is distributed costs covering recruitment, training, travel, insurance, school fees, etc.

¹⁷This is of course not indicative of actual TSHS equivalents over the years since the Tanzanian currency has been greatly deflated during the project period (See Appendix 9).

Frøyland in his interviews with Moshi staff concludes that that most Tanzanian instructors were reasonably confident about their ability to cope without expatriate assistance, but they emphasized the need for continuity of Tanzanian staff and the gradual withdrawal of expatriates. There is an understandable concern about availability of foreign exchange and procurement of spares, once TAP is withdrawn - a foreign expert is a conduit for direct access to the top in your own administration and for funds from to meet urgent needs. The SIDA specialists, each looking at his own section, thought on the whole that Tanzanian staff are capable of running the first year programme in the trade courses. Typically, they thought that a main shortcoming of Tanzanian staff was lack of relevant industrial experience. It is reasonable to interpret this as an underlying lack of confidence in the practical 'trade savvy' of the Tanzanians - in spite of the many years of teaching experience which the latter now have.

The statements of both Tanzanians and Swedes need not be taken at face value. Tanzanians have a natural interest in portraying their own competence in a favourable light. Their own adequacy is at stake. If the cultural gap had been less, Swedes might have had more confidence in their counterparts. Also, most Swedes enjoy their life in Moshi and would like to stay. This can allay their own doubts about the need for another contract.

It is important to bear in mind that the contribution of Swedish experts is not merely the sum of their individual work; they are part of SIDA's larger support and draw on that to enhance their effectiveness. It is likely they would be much less effective if they were employees of Tanzania and were working entirely within the Tanzanian structure without being able to call on support from SIDA.

The TAPs appear to have been selected as carefully as conditions have allowed it. But often they have necessarily been selected from very small pools of applicants, because of the very specialized nature of many trade sections. Their proficiency in English is often weak. Therefore, they very often have had problems communicating with incoming trainees whose English skills are worse. The Director of NVTD, Mr Manyanga, has been distinctly more involved in the process of selecting (not only approving) the SIDA TAPs than he has with Swiss or Danish TAPs.

Socially, it is very evident that the Swedish experts in Moshi NVTC, like expatriates at 'expert' level generally in developing countries, tend heavily to associate with each other and with other expatriates. It is a rare expert who has a working knowledge of Swahili. They have their own living quarters, which are apart from their Tanzanian colleagues whose quarters are much humbler; and they reportedly eat their lunches with other Swedes rather than with Tanzanians. Tanzanians and Swedes converge on separate tables in the same lunchroom. To observe this is not so much to level any accusation as it is to note the great social distance which exists between expert and instructor. This social distance must be a barrier to transfer of skill. On the other hand, it is argued that the separate housing compound with a communal 'self-built' swimming pool, has been an important attraction in recruiting and keeping these vocational trainers - some of whom are in very scarce supply in Sweden too.

The job descriptions of the TAPs are stated in very general terms. The experts tend to become preoccupied with the task of organizing the practical side of vocational training, so much that the task of transferring skills to a Tanzanian counterpart in any systematic way, is lost sight of. Perhaps typically, one expert wrote in his final report for SIDA that he had worked 80% as a gapfiller and 20% as a controller. Much time has been spent on

procurement, replenishment and installation of tools and equipment, and on design of curricula. In the pedagogic process they have, i. a., been assigned special responsibility for setting up a work station system of training and preparing materials for the stations (See Section 7.2.2 in this Chapter). Some Swedes have supervised the teaching which their counterparts have carried out. But the main impression is that expatriate and local staff have shared the work to be done without paying much attention to knowledge transfer or staff development. The division of labour which has emerged need not have promoted informal staff development either. In that division, local staff have worked more exclusively on teaching trainees while Swedes have been organizing, setting up and procuring, in the background. But one would think that the staff-intensive demands of the station system has very much also drawn Swedes into teaching in the workshop.

Their task as reinforcers has given the experts flexibility. The experts have their workhours. But there is the impression that they, unlike their counterparts, are not much bound by any timetable within those workhours, because they are not really there to teach. At NVTD there is therefore worry that the structure within which the experts work is insufficiently firm. The desire to control foreign experts will naturally increase both with awareness of their high cost and with length of delays in their replacement. NVTD and SIDA have now good reasons for being impatient to see more deliberately planned staff development work by the experts, rather than leaving it to informal daily osmosis.

Frøyland concludes that the expatriate staff has done a professional job in designing, constructing and implementing a Swedish school model as requested and according to agreed plans. Staff development and 'institutional learning' have not been sufficiently prioritized tasks for the TAPs and for management at the Moshi NVTC. Characteristically, as of 1990, it is reported that Swedish funds set aside for staff development at Moshi are not being spent.

Staff development through 'counterparting' often works poorly. Sometimes, one reason is lack of continuity on the 'learner' side in counterparting. This is a common complaint among donor agencies about local project staff - too many transfers out of key project positions. Has this been a major factor at Moshi? Trevor Coombe has in his background documentation for this Evaluation examined the local and TAP staffing in the different sections at Moshi during the 1984-89 period. During these five years, Moshi NVTC has had 2 principals but 4 project advisers. The most senior Tanzanian instructors have been remarkably stable in their job. Of the 13 regular trade training sections surveyed in March 1989, the continuity is nearly complete among the senior Tanzanians. Nine of them have remained in the same job all the time since early 1984, others have an equally long service at Moshi but have been redeployed (e.g., out of the now defunct supervisor training unit). More junior Tanzanian staff have a shorter Moshi track record. The overall picture is one of relatively high stability of staff and few promotions. The Swedish experts have changed much more than the senior Tanzanian staff in the sections, though some Swedes have returned to Moshi after a period away. Six sections have also had at least a year without a Swedish expert in place at all¹⁸. Thus, there has been considerably more Tanzanian than Swedish continuity in the counterpart pairs. *Lack of continuity in local staffing could not have been an important barrier to 'transfer of skills' from expatriates to locals at Moshi.* It is hard to assess whether greater continuity on the expert side would have been desirable, and if so, possible.

¹⁸e.g., Tool & Die Making, Machine Tool Repair, Patternmaking, Pipe Fitter/boiler Mechanics, Refrigeration and Airconditioning, Foundry.

The Swedish trade experts were hired as experienced vocational trainers, not as people with any special expertise or experience in transferring their skills to junior colleagues. If transfer of skill is desired, a master-apprentice role relationship is appropriate. There is then no doubt about the duties of the master, and it is no shame for the apprentice to act in the role of learner. But this has not been the planned relationship between the Swedish experts and senior staff in the Sections. The roles have been defined as cooperation, collegueship and not as a situation where one clearly was to be trained by the other.¹⁹ Quite to the contrary, The Swedes have often worked within a context in which the key successor person to train has been their formal boss - the Tanzanian head of section. It is not at all surprising that in such circumstances the experts deployed in the sections have not taken it upon themselves to work out a clear plan of 'transferring skills' to colleagues, and that they have felt it more natural to 'cooperate' in the shared task of building and running the section. But causing people of unequal competence to cooperate in a shared task is not a sufficient condition for transfer of skills.

The logistics requirements of some of the Moshi trades are such that a good foreign expert contributes not only expertise but also by being an active 'insider' in the backup system which the donor agency provides - ability to circumvent the long delays and many steps in official channels and directly line up needed supplies. Skill in doing this, and in getting away with it, is what builds reputation of 'advisers', 'experts' and project managers. This is a role which an equally competent local colleague cannot so easily play. It is much harder and riskier for a local section head to informally short-circuit official channels of communication in order to speed things up. Therefore, one should acknowledge that there may be advantages possessed by experts which are not simply a matter of competence (or even just access to funding), and which cannot be transferred as skills through staff development. There is an influence component which means that activity with which experts are associated benefits not only from extra funding but extra speed of attention from an underresourced central bureaucracy. There is therefore a value in good experts which cannot be replaced by the development of competence alone²⁰. Wider 'institutional learning' need to go hand in hand with staff development.

The management of Moshi NVTC, and their Swedish advisers, had - as of spring 1989 - not made much headway with such developments, neither with locally organized staff development as part of the counterpart 'pairs', nor wider 'institutional development'. But extensive use during these 6 years has been made of more conventional measures such as 'sending staff on courses' and especially 'calling in consultants'. The fact that the extensive TAP presence has continued without any reduction of scale - with plans only then in the making for systematic reduction - means that 'courses' combined with 'osmosis in the workshops' have been inadequate. Such large-scale, long-term presence of expensive TAP could be justified in cases of training high level, 'strategic' manpower, e.g, training teacher trainers or training managers. But it is very doubtful that it can be justified in the basic training of skilled workers. It would be easier to justify this expense if the external effectiveness of the distinctive Moshi trades is impressive - e.g, if the trainees in fact

¹⁹See Chapter 4.3 for discussion of how Swiss aid to Chang'ombe NVTC has developed instructor training as an extension of an instructor-trainee relationship, where the expatriate expert is directly involved in training his own successors.

²⁰Needless to say, not all 'experts' are competent.

become valued foundrymen, tool makers, machinetool repairmen who play a key role in refurbishing badly run down Tanzanian industry. Chapter 8 will examine this question, and the answer will on the whole be disappointing. Those trained in these distinctively specialist Moshi trades are deployed more broadly than their training intended.

7.7 Summary and Conclusion

The trainees coming to NVTCs for basic training, though a tiny proportion of Tanzania's youth, have not been selected by any mechanisms or criteria designed to pick up particular interest or aptitude for the trades they enter. Most are nominated as a spinoff from selection to secondary school and teacher education, without having expressed any interest in vocational training. Insofar as selection places a premium on any particular aptitude at all, it is proficiency in English.²¹ This could be misplaced because proficiency in English has very little bearing on how good practical skills trainees develop during basic training. It is the sons (and sometimes daughters) of the well educated (and well connected) who disproportionately enter to vocational training, presumably as something to fall back upon when they fail to get into Tanzania's narrowly select secondary school. But this is not to suggest that NVTCs suffer from lack of attraction. The queues to get in are long.

The short basic training period could be used better if trainees were asked to show up earlier. At Moshi many training days are lost because of late arrivals. But the percentage dropping out during the year or otherwise failing to complete the basic training course is low. The curriculum materials vary as to format and specificity. There is very little use of trade related books. Libraries, when they exist, are hardly used at all. Here, as in other countries, syllabus design needs to be better informed by what trainees actually learn (studies of the training process itself), and by studies of what they need and use after training.

There is now a need to reassess the contents and duration of most trade courses, given the policy to extend basic training to two years. There is thus a need to examine the whole curriculum structure within NVTC. This should also be an occasion for simplifying the curriculum structure since there are now a number of very closely related variants.

Trainees get the best grades (marks) in trade practical skills. But it is performance in the academic or theory subjects which are most strongly related to the trainee's overall results. This means that the summary letter grade which students receive is a poor measure of their practical skill.

It is doubtful whether the station system which is used at Moshi, will work well with Tanzanian staff, when Swedish TAP is withdrawn.

Capacity utilization should be improved at Moshi NVTC. Utilization is hampered by trades with entrance requirements which complicate admission. Such requirements are intrinsic to the Moshi NVTC concept.

²¹ At Moshi NVTC, most trainees enter after one year of earlier basic training at another VTC.

Feeding and housing trainees are a very major component of recurrent cost at Moshi, along with electricity and gas. There is a strong case for enrolling more day students in the NVTD system. Even when for equity reasons boarding is provided, all-day training capacity could be better utilized by adding day-students. At Moshi NVTC, most trainees seem to come from surrounding region. Even so, all trainees are boarded at great expense. The profile of expenses at Moshi dramatically illustrates the extremely low staff pay. Increasing staff pay and allowances at Moshi by 50% would add 13% to the recurrent budget. As also discussed in Chapter 6, the level of staff pay is pitifully low. It must drive instructors into moonlighting of various kinds, in order to survive. Teaching morale suffers. Teachers need incentives badly.

The technical assistance at Moshi has been very costly and has continued much longer and at a much greater scale than the initial plans and expectations. The strategy for training and developing local staff, so that costly Swedish TAP could be withdrawn, has been to send Tanzanian staff away for training and courses, and to have consultants give courses at Moshi. These measures have clearly not sufficed to prepare the ground for withdrawal of Swedish TAP. During the 6 years since training started, there has hardly been any organized centre-based efforts to make use of the Section-based TAPs for staff development of Tanzanians.

CHAPTER 8

EFFICIENCY AFTER BASIC TRAINING

In this chapter on we are able to take a short look, into placement in industry, but not into the longer working career of NVTC graduates. Strictly speaking, this will not show 'external effectiveness' of training (See Chapter 1), for 3 years of in-plant training is supposed to occur in combination with evening classes and lead to a Certificate of Apprenticeship after 3 or at least 2 tradetesting grades en route (See Chapter 2.2.3). Yet, 15 years after the Vocational Training Act, 'in-plant training' has not been implemented as an organized system. The NVTD is now making another effort to implement, with technical assistance from UNDP/ILO (See Chapter 4.6). As of 1986/87 NVTD reported that 74% of trainees completing basic training are 'placed' in an apprenticeship. But this exaggerates the effective placement.

Table 8.1 shows statistics for the class of 1986 based on official returns from the NVTCs, signed contracts returned from employers, and finally the number of Certificates of Apprenticeship issued in 1988. The latter does not necessarily refer to the actual class of 1986. In fact, they probably mostly belong to earlier classes and some will not have come up through NVTC at all - the figures therefore exaggerate progress towards the Certificate. But 1988 would be the time at which Certificates should be issued for this class, if they had progressed on schedule and completed trade test grade 2 that year.

The number 'placed' is 938, which amounts to 65% of the output. However, it could be that information is missing for those trades for which no placement is reported in Table 8.1. To allow for this possibility, these trades were subtracted from the output figure. Thus, excluding Fitter/Turner and Panel Beating the output would be 1,316. The placement rate would then be 71%. The looseness of this figure is shown by the low rate of contracts signed. Only 20% (183) of those 'placed' have their apprenticeship formalized by a contract. A miniscule proportion (5%) of those supposedly 'placed' could 2 years later have earned a Certificate of Apprenticeship. Or, compared to the output from basic training: only 3.8%. Even so, as noted above, these are upper estimates of the proportion that could have progressed to the Certificate. The true proportion will be lower.

For Moshi and Tanga NVTCs, we have some findings on the trade tests successfully passed by former trainees. As of February-March 1988, some 3+ years after they left basic training, only 39% had been successful at any level at the trade tests (Närman, 1988: 27). Only seven individuals out of the 195 who were traced, had been awarded a Grade I result.

Assuming that about 7% have dropped out during basic training, one could estimate these ratios for the class of 1986: *for every 100 trainees entering basic training, 93 complete the course, 66 are recorded as 'placed', 13 have a signed apprenticeship contract, and no more than 4 could two years later have been awarded the Certificate of Apprenticeship.* Chances are it takes more than two years for 'these 4' to obtain the Certificate, because the Certificate statistics do not necessarily refer to the class of 1986. Most trainees will probably not receive any formally organized further training in their trade. Effectively, their placement is in most cases a semi-skilled job.

**Table 8.1 In-plant training statistics related to class of 1986
as per 6th March 1989, according to NVTD records**

Trade	Output 1986	Placed 1986	Apprent. Contract*	Certificates of app.ship issued 1988
Motor veh. mechanics	89	54	17(-5)	2
Fitter/turner	100	-	-	-
Welding/fabrication	106	71	21	5
Plumbing/pipefitting	74	31	12	1
Carpentry/joinery	99	88	22	1
Masonry/bricklaying	122	110	31	1
Electrical install.	120	88	21	4
Tailoring	42	22	-	-
Shoe making	16	14	4(-4)	-
Fitter mechanics	145	138	21	22
Office machine mechan.	30	12	1	1
Printing/bookbinding	29	21	1	-
Blacksmith	65	48	7	-
Motor rewinding	24	1	-	-
Panel beating	30	-	-	-
Painting/signwriting	80	43	8(-3)	2
Refriger/air cond.	18	17	5	3
Industr. electricity	21	17	1	-
Electronics	28	22	-	-
Tool and die making	17	15	3	-
Pattern making	9	9	-	-
Foundry	22	9	2(-2)	2
Machinery fitting	39	29	-	2
Machine tool repair	14	13	-	1
Instrument mechanics	24	15	-	1
Road construction	23	2	1	2
Diesel eng. mechanics	24	24	3	-
Boiler mechanics	21	15	2	-
Laboratory assist.	15	10	-	-
Total	1446	938	183(-14)	50

*The first number refers to contracts initially signed and registered with the NVTD. The number in parentheses shows the number of cancellations of contracts during 1986-89. The 1988 Certificate figures are not necessarily the same cohort.

Source: Figures supplied by the NVTD

The importance of demand-driven training provisions has been stressed in Chapter 1. Ease of placement is one indicator of 'demand' in the trade. But it can also reflect the willingness of trainees to take up existing opportunities. With such small numbers, the ease of placement can fluctuate from year to year. Bearing this in mind, in 1986 the following trades had a strikingly low placement rate (below 60%):

Plumbing/Pipefitting, Office Machine Mechanics, Motor Rewinding, Tailoring, Foundry, Painting/Signwriting, and Road Construction.

How did the Moshi trades fare? The reported rate of placement of some of these trades were: *Refrigeration & Air Conditioning 17/18, Industrial Electricity 17/21, Electronics 22/28, Tool & Die Making 15/17, Pattern Making 9/9, Foundry 9/22, Machine Tool Repair 13/14, Instrument Mechanics 15/24, Diesel Engine Mechanics 24/24, and Boiler Mechanics 15/21.* Overall, the rate of placement in this group is 78%. Two problem trades stand out: Foundry and Instrument Mechanics which both have distinctly low rates. The other 'Moshi trades' had an average of 87%.

At first glance this is a somewhat encouraging result. But one also needs to look at the process of placement: What does 'placement' mean? How firm is it? Is the nature of work adequately related to the specialty of training?

8.1 The Process of Placing Trainees

It is difficult to place trainees. It is naturally harder when the number is great. It will also depend on the trade, and on the experience and connections of in-plant training officer.¹

The procedures have changed. Placement was until 1986 done centrally by NVTD headquarters. NVTD would through advertisements and contacts obtain places. Each NVTC would also canvas for places on behalf of the whole NVTD system, and supply headquarters with 'places'. Headquarters would then allocate trainees. The present system is a blend between decentralized and central allocation. Headquarter still plays a role with trainees whom have not been placed by their own NVTC, but the NVTCs shoulder most of the responsibility.

The norm is to have an in-plant training officer who does the placing on top of other duties, usually as the head of a trade teaching section. This is the practice at DSM VTC (Chang'ombe), at Tanga, Dodoma and at Moshi. At small NVTCs (e.g., Iringa, Arusha) placement is done by the principal who makes use of his personal contacts with other principals and with employers. The success of small NVTCs in placing their trainees varies. Small centres usually start with construction trades. This is an advantage in placing; and the construction trades are so widespread that it is probably easier in these trades for trainees to find work on their own (See Table 8.3, below). Small centres are usually remote from industrial areas and placing from a distance is more difficult than doing it locally. In 1987, both Iringa and Arusha seem to have been quite successful, placing 36/45 and 26/31 respectively. But posting was moving more slowly with the class of 1988.

Effective placement demands much time and energy. The in-plant training officer has to canvas employers with letters and personal visits. He also needs to cultivate links with colleagues in other NVTCs, with whom he can 'trade favours'. Such lateral contacts seem to be more useful than relying on NVTD headquarters for help. Lack of time and transport

¹The impressions which in addition to available statistics provide the basis for this section are interviews at Iringa, Dodoma, Morogoro, Chang'ombe, Tanga, Arusha, Moshi and NVTD headquarters.

are important constraints. But the main perceived constraint is simply lack of interest among employers, at a time when industry is overmanned relative to output (See Chapter 3).

In dealing with employers an in-plant training officer can ill afford to lay down conditionalities. He could not possibly insist that the employer plan a training programme for the apprentice, because apart from generalities in the contract document, NVTID has not disseminated any training schemes in the different trades.²

The trainees themselves are in no position to insist on any rights. They can only 'vote with their feet'. Even at Moshi, where great energy seems to be expended on placement, the trainees are given no guidance about how to interpret the contract form which they carry to the employer. In fact many are unaware that their in-plant training is supposed to lead to any Certificate of Apprenticeship (Närman, 1989). The trainees too see placement as a posting in a job.

"A chance" is the term which trainees and in-plant training officers often use about an allocated place. This aptly conveys the uncertainty involved. With luck, a "chance" could turn into a semi-skilled job related to one's trade, with opportunity to learn from the natural flow of work. But sometimes the trainee is rejected when he shows up. He is not needed after all. Or, he will drift away after a while, out of frustration with the conditions. In the words of one in-plant training officer:

Many are refused after they arrive in a firm ... there are some communication problems. One company said they could not pay trainees ... other students are turned away because they look too young. Not all come back when they are turned down. Some get jobs through parents ... Some companies take on trainees but give them other chores than they are supposed to have.

It can also happen that a trainee fails to go to the allocated place, because it may be too remote and far from home. Living expenses can be too daunting in Dar es Salaam and some other towns:

They want to go where they know people, where they have families. Though we give many placements there, it is hard to place and make it stick in Dar es Salaam, Arusha and Mwanza unless they have relatives there. They cannot afford to go. One room is about 1000 a month, and they get only about 2000.³

When some in-plant training officers were asked to estimate the proportion of those officially 'placed' who actually 'got started', estimates with no claims to precision ranged from 2/3 to 3/4. If so, the overall effective placement rate into a semi-skilled job, of those who enter basic training, would be less than 50%. This estimate is close to what Espling *et al.* (1988:38) conclude about Moshi NVTC: that as of 1988, less than half of the

² Though in the early 1970s there was an ILO team in the Division which prepared a "lot of documents, including log books, but these have not been seen by the employers." It is interesting that a new UNDP/ILO team came in 1989, with a brief which must have overlapped with the one in the 70's (Cf. Chapter 4.6). Yet, neither in the NVTID nor in the present (1989) ILO team, is there much awareness of this historical repetition.

³ Actually, the pay given to in plant trainees can (as of spring 1989) be as low as 1700, according to the impressions of in plant training officers.

trainees who have gone through training at Moshi VTC receive an inplant placement. Chances are that it is harder to place trainees from NVTCs with a lesser reputation than Moshi.

Whilst some never turn up, or "run away" from the place which has been arranged for them, others who never were placed, trickle into jobs on their own. Espling *et al.* (1988:38-39) observe that many who had been posted in a company, had left.

Of those who were supposed to have been posted to the companies surveyed, they found 'in-place' only 33% of those who had been posted there. But, they also found in the same industries a greater number of former Moshi trainees who had not been posted to these companies at all! The proportion who had remained in the firms they had been posted decreased with time. But even among those within their first year away from Moshi NVTC, only 13/21 had remained in their allocated 'place'.

The impression is that most placement which is done by the NVTCs, winds up within 4 months after basic training. There is usually not much further effort. There is a sense that opportunities have been exhausted, and the market is then left to build up demand until next year's crop can be marketed. Athumani and Kombe (1989) have reported preliminary findings from their survey of former Tanga trainees in certain trades (after tracing 23% of the target group) that 70% were placed within 3 months of the basic course.⁴ At Moshi, where the trainees finish in December, 75% were placed already by January 1989. There, placing starts in October, and most of it is over by the end of December. The comments quoted below, Section 8.2.1, refer to mid February, well after placing has culminated.

VTCs in industrial locations are at an advantage. The Dar es Salaam Centre has the disadvantage of size (many trainees to place) but the crucial advantage of being a day centre in the most important industrial location. Trainees who already have accommodation can be placed locally with greater ease than those without family or connections locally. An experienced NVTD officer claimed that the DSM Centre at Chang'ombe never had any problems in placing trainees. However, Table 8.3, below, tells a different story today.

The ease of placing depends on the networks and experience of the officer responsible, and on local availability of places. In Dodoma, with a new officer, a fairly large VTC, and little local industry, out of 155 trainees with the Basic Certificate, only 50 (1/3) had been placed by end of January 1989, and of these 50, 13 had been placed internally either as apprentices at Dodoma itself or as trainees in further courses at Moshi NVTC. (These were trainees who had finished their basic course by the end of September 1988). Thus only 37 (24%) had been placed 'externally'. At Tanga, as of February 1989, only 89 trainees had been placed out of 263.

It is policy that employers must take trainees 'unseen' and without information as to marks on the Basic Certificate exam. But there will be pressure to accommodate the employer's wishes to look trainees over. Here are some statements from different in-plant training officers:

⁴ Since tracing was done through industry, it naturally overrepresents those who were effectively placed. Thus, 'all' in this sample were in apprenticeship or further studies.

At times we allow people to come here and select directly ... Some say they cannot take on without first looking a trainee over, but others do it.

Industry sometimes request to see the certificate, or marks obtained by the trainees, before they take them on.

Some employers don't want to sign a contract but take trainees on informally. Others keep a contract 6 months before they sign anything.

Prioritizing trainees for placement is done differently in the various NVTCs. Some centres say they place by the rank-order of performance in the Basic Training exams. But this varies. At Tanga, the in-plant training officer is simply handed a list by the principal. At Moshi: *"I mix the bad and good ones to send to companies ... but if you do not have any earlier contacts, then you send the best."* Officers at NVTD headquarters give conflicting versions of policy, thus implying that there is no clear policy so that it must be up to each NVTC in the absence of guidance from headquarters.

The drift of initiatives is to compensate for weak in-plant training by strengthening the basic training and 'surrogate' in-plant training in basic training. Efforts are made to arrange for 'apprenticeships' within the NVTCs by taking on workshop auxiliaries (Moshi), or employing former trainees in 'self reliance units' (Dodoma). Extending basic training to two years is similarly a response to slow progress in implementing genuine in-plant training. Not surprisingly, the trainees who have been traced in industry, strongly voice the view that one year is too short basic training when it is the only organized training that the vast majority in fact receive (Espling *et al*, 1988 on Moshi; Athuman and Kombe, 1989 on Tanga trainees).

8.2 Problems in Placing Girls

Especially in the distinctly male trades, it is difficult to place girls. Here is the experience of one in-plant training officer:

They come without knowing much, they have been selected to NVTC (rather than having applied on their own initiative). They need more information before they begin. It is very hard to place them unless you find people who have been to school with you and know you well. I can place ladies only because of my special relations with employers, and then only in government. Private companies never have taken girls over my 4 years' experience as an inplant training officer.

(X) is the single largest company in terms of placement. They wanted 150 people this year. But they will not take any girls. They take diesel people, electronics, industrial electricity, machinery fitters. Another large parastatal is (Y)..They will find reasons for not taking girls, but can take some..(Z) is part of the government and cannot refuse to take girls.

However, this statement does not hold in a locktight way throughout the NVTC system. Athuman and Kombe's (1989:7) tracer study of Tanga trainees in the highly 'male' fields of Motor Vehicle Mechanics, Fitting & Turning, Masonry, and Electrical Installation turned up only male trainees and no females in Government Departments. Five out of the 13 females traced were in fact in private companies.

A special study of girl trainees is needed. At present there is not much hard evidence to back up the impressions from interviews (But see Chapter 2.2.1). But it is likely that less than half of the girls who enter NVTCs succeed in finding work or in-plant training even broadly in their trade. The proportion could be very much less.

Espling et al.(1988:58), in their tracer report on the 1984-87 groups at Moshi NVTC, briefly note that they got 17 answers from girls. Eight of them were working in the trade they were trained for, one was working as a clerk, six were unemployed (5 of these had been in Mechanical Draughting), and 2 were at home with their children.

Tanzanian policy has favoured recruitment of girls through nominations from Regional Education Officers (See Chapter 7.1.1.3). SIDA has even more strongly, here as in all its programmes, shown strong interests in measures that promote better opportunities for women and girls. There are powerful equity reasons for such policies. But the reality of placement in many trades is such that efficiency of training can be ill served by these policies. Unless training leads to livelihood, it does not really serve equity goals either, and then time and money is wasted. We need more information on these issues than what we have been able to dig out. But it is likely that girls stand a better chance of finishing basic training (See Chapter 2.2, Table 2.2), and of converting it into a livelihood, if training is in the so-called 'soft trades' (service and commerce related) than in 'hard' trades.

The problem is aggravated by a depressed labour market. If trainees generally had been in short supply in such trades and quickly picked up by industry, girls would have had a chance. In today's labour market, however, it probably serves neither efficiency nor equity to send girls to take up e.g., foundry, fitter/turning or blacksmithing, because the cumulative 'wastage rate' along the way is likely to be very high. If it is judged that it is important to keep nominating girls for such trades in order to keep chipping away at stereotypes, then it should also be recognized that there is also a human cost by dropping out and by poor utilization of training.⁵

8.3 Problems of Placement in the Individual Trades.

To put some flesh on Table 8.1, comments from some placement officers will be cited, about the ease of posting trainees in the different trades. Along with Chapter 3, this is as close as we come in this Evaluation to portraying the effective demand for trainees in the labour market.

8.3.1 The 'Moshi trades'

The 'Moshi statements' below refer to those who finished in December 1988. The placement process begins in full earnest in October. The statements describe conditions as of mid February 1989, by which time most of the placing that will be done, has been done. Table 8.2 summarizes the views from Moshi and from the officer concerned at NVTD headquarters. Of these two sources, one can assume that the in-plant training officer at Moshi is the better informed one. Certain trades do have serious problems, notwithstanding the optimistic impression that NVTD has from a distance, e.g.,

⁵In framing policy, goals and principles need to be balanced against each other. It is not argued here that these trades should exclude girls. But neither should they be nominated into 'hard trades' when they have expressed no prior interest, because this leads to wastage of expensive training resources.

Pipefitting/Boiler Mechanics, Foundry, Mechanical Draughting. Electronics seems to be another problem trade but NVTD has no particular impression. In addition, there are some trades which are 'difficult', and which are recognized as such by NVTD: Blacksmith General and Instrument Mechanics.

At first glance, placement seems to be going well in 6 out of the 12 trades in Table 8.2. But in some of these trades placement is broader than the training speciality. Examples are Pattern making, Tool & Die Making, Industrial Electricity, Machine Tool Repair. In these trades it seems to be quite common to revert, during 'apprenticeship', to the broader trade of one's basic training before entering Moshi NVTC. Pattern makers working as carpenters is a glaring case. It is of course understandable that a Machine Tool Repairer can become recognized as a very good Fitter/Turner. After all, a good background in broader metalwork trades is needed before training as a tool maker. But it is doubtful that the expensive additional training is then adequately made use of. Placing in a kindred trade is also common in Boiler Mechanics, Blacksmithing, and probably also in Electronics.

There are really only two Moshi trades which seem to function well: the broad mechanical foundation of Machinery Fitters, and Diesel Engine Mechanics who depends on 'one big customer' - it has come to serve as a recruiting ground for the internal training scheme of the Railroad.

The problem of matching in-plant training with trade speciality is so great that the intended match is achieved way only for a small proportion of the Moshi trainees. The key idea behind Moshi has been to train skilled workers in specialist industrial trades, beyond the broader foundation trades. As noted in Chapter 7, it is this very concept of 'new specialties' which has necessitated the very long and large scale involvement of technical assistance at Moshi. This concept has not at all been vindicated by the connection between basic training and the subsequent 'apprenticeship' or job.

Table 8.2 Comments on how easy or difficult it is to place trainees in the 'Moshi trades'.

Placement said to function well

Machinery Fitters

Moshi: This trade is the easiest to place (it is also his own trade). 38 have been placed out of 40. The other 2-3 have poor character.

NVTD: Middle level of difficulty, but there are few to place.

Diesel Mechanics.

Moshi: I have placed 12 out of 16. Tanzanian railways want them (where they start as trainees in the railway training scheme). A few are placed as vehicle mechanics.

NVTD: This is a new trade but not so hard. Moshi says no problem

Not hard to place but often outside speciality

Machine Tool Repair.

Moshi: Placed 14 out 16 but cannot place them in the trade..they are placed as fitter mechanics. The employers don't know what machine tool mechanics is.

NVTD: Middle level of difficulty, but there are so few, they are absorbed

Pattern Making

Moshi: This year placed all 16. Earlier we could not place them at all or only 2 or 3. But now placing them as carpenters.

Industrial Electronics

Moshi: I placed 6 as industrial fitters, 8 as electrical fitters (out of 16).

NVTD: They don't have a problem. Only a few come here to be placed.

Tool&Die Makers

Moshi: We place all. 12-16 come out. I placed at least half as tool and die makers and half as machinery fitters or fitter turners.

NVTD: Very marketable. Quickly placed. They move around a lot in industry

Pipefitting & Boiler Mechanics

Moshi: 6 out of 16 are placed. They are working as fitters, plumbers and boiler mechanics.

NVTD: Moshi does the placing itself. Sometimes we get a few. They are not hard to place.

Hard to place.

Blacksmith General

Moshi: 8 placed out of 16-20. The problem is that people outside don't know what Blacksmithing General is. So I place them as welders. I am now trying to educate employers.

NVTD: It is difficult. Centres request NVTD to help, but vacancies are hard to get. Few are needed by industry. Umangu Farm Implements is the only one, they take a few. The trade is competing with Foundry.

Electronics

Moshi: We placed 6 last year out of 16. The problem is that some don't have Form 4. Companies want form 4. Only those with Form 4 are taken. It is also difficult to place girls.

NVTD: No special impression.

Foundry

Moshi: 6 out of 20 have been placed. Most of them in the railways.

NVTD: OK this year

Instrument Mechanics

Moshi: 8 out of 16 have been placed. There are only two industries taking them. The problem is that the trainees don't take up the place, none of them went to Nyanza salt mine because it is so remote.

NVTD: Last year Moshi placed 12 out of 18.

Refrigeration/air Conditioning

Moshi: 3 or 4 have been placed. The problem is too many girls. Only the government takes them.

Mechanical Draughting

Moshi: The hardest trade is Mechanical Drafting..We have placed 1 out of 20 (after 2 months). if they came with Form 4 could have placed better.

NVTD: Only Moshi and DSM have this trade. Don't think there is a problem any more.

Findings in the tracer study of Moshi trainees, directed by Närman, point towards the same general conclusion, though the numbers in each trade are small. Espling (1988:57) concludes that:

Many of the students are not working within the trade they were trained for at Moshi VTC. In some cases they are working within a totally different field, but quite often within a related, but much less specialized trade: Pipe fitters & boiler mechanics frequently work as plumbers, Diesel engine mechanics are in many cases working as motor vehicle mechanics. Tool & die makers work as fitters and turners to a great extent, and many blacksmiths work as welders. Only a few trained within Electronics seem to actually be working within this trade, most of them are always, or partly, dealing with electrical installations. Some pattern makers are working as carpenters.

It is very interesting to note how close the description of the inplant training officer at Moshi (Table 8.2) matched these conclusions from surveys of several cohorts of Moshi trainees. This underscores the value of experienced in-plant training officers as a source of information about what happens to those whom they are trying to place.

These pessimistic but important conclusions concerning most of the specialist Moshi trades are admittedly based on impressions from people 'close to the ground' and on relatively small samples of trainee's reached in the tracer study. To probe further, Anders Närman and his research students from Gothenburg are in 1990 seeking to describe in more concrete terms the nature of work done by trainees from these specialist trades.

8.3.2 Problems of Placing Trainees at Other Centres

Table 8.3 summarizes the observations made about placement in trades taught at other NVTCs. Most of the comments are from Dar es Salaam NVTC at Chang'ombe (DSM, in the Table). This is by far the largest centre with about 1/3 of the enrolments. There are also some observations from Dodoma.⁶ But the NVTD observations refer also to some trades which are taught at other centres. The comments are grouped within 3 rough categories according to ease of placement. In this long list there are very few examples of trades in which no particular problems of placement are noted. The common problems are that (a) it is simply hard for trainees to find a place, (b) if they get a place, it is merely short term cheap labour; and the employer is unwilling to make any commitment at all, (c) the nature of the work is different from their trade of basic training.

⁶Though the view expressed by the placement officer at Dodoma, in Table 8.3, is that some trades are 'easy', there were in fact great difficulties in 1989 and it was quite a struggle to place the class of 1988. 49 had been placed by end of January 1989 out of a class of 155 who had left in September 1988. Masonry/bricklaying stood out as the only trade in which more than 40% had been placed after 4 months.

Table 8.3 Comments on how easy or difficult it is to place trainees in trades at other NVTCs than Moshi.

S a i d t o b e e a s y t o p l a c e

Mechanical Draughting

DES*: We are able to place them here.
(As shown in Table 8.2, this is problem trade at Moshi)

Truck Vehicle Mechanics

DES: So far we have had no problem in placing trainees.

Fitter Mechanics

Dodoma: Easy
NVTD: No problem

Fitter Turner

DES: We have no problem with placement. They are easy to place
NVTD: No problems

S o m e p r o b l e m s i n p l a c i n g

Carpentry and Joinery

DES: It's very easy. We get a lot of requests. It has been easy since 1982. We have so many offers we ask other centres to help.
Dodoma: Easy
NVTD: It is easier to place them now, no problem. The centres are placing them directly. There have even been extra vacancies. But the problem here is that employers use them as cheap labour. Few contracts are signed in this trade. Some are moving themselves.

Civil Draughting

DES: We have no problem in placing.
Dodoma: Hard to place
NVTD: DSM has no problem placing from 2 year course. It is made easier because there are only a few to place.

Electrical Installation

DES: It is OK. We receive many many requests from companies. We want to extend the training period.
Dodoma: Easy
NVTD: It is not too hard. I guess we place at least 75%. The problem is they end up in other jobs. This is a problem in many trades, except in carpentry and masonry.

Laboratory assistants

DES: None has left without a job.
NVTD: This is a new trade. Some employers don't know what to do, and actually put them to work as laboratory assistants, not as trainees.

Masonry and Bricklaying

DES: They are in great demand. But our section has been losing tools and has no equipment.
Dodoma: Easy
NVTD: There are no problems finding places, but they won't sign any contracts.

Motor Vehicle Mechanics

NVTD: This is very marketable (taught at Tanga, Mwanza, Songea). But they don't sign contracts..Many are Asian employers.

Panel Beating

DES: We placed only 2 this year. The problem is that they are not officially placed. But many of them end of picking up contracts for small jobs and learn informally.
NVTD: No problem except that contracts are not signed

Plumbing and Pipefitting

DES: No big problem
Dodoma: Easy
NVTD: No problem, but they don't sign contract

(Continued next page)

(Table 8.3 - Continued)

Tailoring

DES: There are very few problems officially. People come asking for trainees..but trainees don't always like to go where they are placed because of poor conditions.
NVTD: No problem placing, but they won't sign contracts

Welding and Fabrication

DES: They are in demand.
NVTD: No problems placing, but they don't sign contracts

Printing and bookbinding (only at Tanga)

NVTD: Tanga is not coming here for vacancies. The records show it is OK. There are only few of them.

S e v e r e p r o b l e m s i n p l a c i n g

Blacksmith

DES: Problem is no demand, employers don't ask for it. They tend to be absorbed into welding and fabrication...and not really improving upon traditional skills. (As shown in Table 8.2, this also a problem at Moshi and thought to be generally so by the NVTD)

Motor Rewinding

DES: This is a big problem. We have never placed any apprentices.
NVTD: Difficult, partly because the industrial structure here is small workshops.

Office Machinery Mechanics

DES: We still have a placement problem. There are very few requests from employers. We have placed 8 out of 35.
NVTD: No problem...there are few big companies

Road construction

DES: It is very critical - a big problem. When they do go to work...they seem to have too little skill, they don't feel OK, poor equipment.
NVTD: When placed, they are not in their trade but doing masonry work.

Painting and Decorating

DES: They are very difficult to place. There is null placement. The employers don't want girls. Boys can find their own way.
NVTD: Hard to place women. Many subcontractors...short term jobs.

Shoemaking

DES: There is a problem. There are few official placements. It is possible they still find their way not small scale self-employment and local industries.
NVTD: There are only 13-15 trainees. But they are hard to place.

*DES: Dar es Salaam NVTC, at Chang'ombe

In some trades the problems have been so severe that the NVTD has discontinued the course (Radio Servicing, Auto Electrical, Drainlaying). Willingness to 'cut losses' is a prerequisite for 'flexible response' in training provisions. But it should occur after a careful diagnosis and some remedial attempt, not merely because placement is very difficult. Some trades taught at present have very severe problems. A number of these (Blacksmithing, Shoemaking, Painting & Decorating, Motor Rewinding) seem to be part of the highly fragmented informal sector, outside the 'regular wage' economy. The problems need not mean that there is low demand. It could be that demand for people *through an 'open route' and with this particular background* is low. For example, as single person ventures or family-based trades these activities could still be thriving. On the other hand, Office Machine Mechanics could be an area in which suppliers run their own servicing, and their own internal training. The 'demand' could be there, but the route through an NVTC may not provide access. This highlights the importance of not only mapping demand for skilled labour but also the routes of access to different occupations, as emphasized in Chapter 1.

Under 'Some problems' there are some trades in which it is not hard to find places, but a 'place' can be akin to casual labour. Any training would then be incidental. Whether there would be much incidental training would then depend on the variety of tasks and the quality of the supervisors. Carpentry and Masonry could be examples of this.

The trades which seem to work best are the basic metalwork trades, which are both 'broad' at the same time as there are work organisations which are firmly within the 'modern sector', in which placement can be formally arranged.

8.4 Trade, Placement, Work, Evening Classes -

The Loose Connections

Whenever we asked about the training programmes during in-plant training, we were typically told about the evening classes at the NVTCs. Athuman and Kombe (1989:12) in their tracer study of Tanga trainees asked the trainees whether they had learnt any further skills in industry other than those acquired during basic training. Only 15 out of 154 graduates traced said they had learnt any such further skills in their trade. Nonetheless, most graduates said, when asked about it, that their employers assisted them in 'developing themselves' in one way or other, probably by e.g., allowing them to attend evening classes.

There is hardly any awareness of company-based training that would be deliberately organized for the trainees, except in the big parastatals (Railroads, Waterworks, Ministry of Works). But precisely because the big parastatals run their own training schemes with their own selection, they are hard to penetrate by NVTC placement. The success of Diesel Engine Mechanics at Moshi is very much an exception.

When parastatals do take trainees, they will commonly have Manpower Development Officers who are open to the argument that their company has a social responsibility for training. One in-plant training officer observed:

A few companies are beginning to appreciate the need for inplant training in an organized way, but many don't. Local companies don't want to commit themselves. We find it easier to work with parastatals.⁷

There has not been much systematic knowledge within the NVTD system about what occurs during 'in-plant training'. There has been no provision, only regulations, to keep in touch with trainees. If they sign an apprenticeship contract (most don't, Cf. Table 8.1), companies are supposed to submit reports on the progress of trainees. They rarely submit such reports.

⁷The parastatals have the reputation of inefficiency. Ironically, it is the absence of a pressure for lean staffing, in spite of very low capacity utilization (Cf Chapter 3) which makes it easier for them to take on trainees. It could be that this also makes them less dynamic training environments than private companies. On the other hand, sweatshop exploitation of trainees may be more common in private companies.

There has been no effort to visit trainees in the companies. It is formally the duty of each in-plant training officer to look after trainees in local industry, regardless of where these trainees received basic training. But this is not carried out.

The one point of contact with NVTCs is evening classes. Most evening classes attenders probably mostly never went to basic training (Chapter 2.2.4), but the classes should also serve an important purpose for the trainees coming from basic training. Dar es Salaam has two-thirds of all evening-class enrolments, and a much greater number than its enrolment in basic training. Conversely, Moshi's evening class enrolment is less than its total basic training enrolment.

For those trained in the specialist Moshi trades who *are* able to continue with directly related work after basic training, there is no opportunity of attending supplementary evening classes in these trades except in Moshi itself. In fact, the great majority of trainees from Moshi are placed in other regions and have no possibility of attending evening classes at Moshi. Table 8.4, which is a compilation of various Tables in Espling *et al.* (1988:39-46) shows the geographical spread of former trainees from various years.

We see that according to placement records (the lists), only about 1/4 of the trainees were placed in Moshi. The proportion actually found there is roughly the same. Even though the tracing is not complete yet, one can safely conclude that the vast majority of Moshi trainees are placed in locations - or end up in locations - where there is no opportunity to attend an evening class in their trade.

Table 8.4 Geographical location of former Moshi trainees

Location	N. of trainees according to lists	Trainees found:		
		Listed	Not listed	Total found
Moshi	93	34	25	59
Arusha	54	26	2	28
Mwanza	12	7	4	11
Dar es Salaam	176	43	34	77
Tanga	9	6	14	20
Morogoro	0	0	25	25
Dodoma	3	0	2	2
Total	347	116	106	222

Table 8.4 illustrates the great geographical fluidity after 'placement'. Nearly as many 'not listed' trainees as 'listed' ones were found in the companies in these locations.⁸ Many trainees do not start in their placement; others 'run away' after a while. Among those who do find work, not only is the connection between type of work and training very loose, *the*

⁸Athuman and Kombe's (1989) study does not make this distinction between 'listed' and 'unlisted' trainees in industries; therefore comparable data on Tanga are not reported.

connection between where they 'were placed' and 'where they end up working' is extremely loose too.

Also the former Moshi trainees who are placed in Moshi or who 'end up there' (60% come themselves from the Kilimanjaro region), have a restricted fare of available evening classes. Since 1988, a trainee is supposed to show a certificate of attendance at evening class before he can register for a trades test. There is a stipulation that at least 10 persons must be enrolled in an evening class. In 1988 most of the distinctive Moshi trades were not on offer in the evening class programme at Moshi NVTC - in spite of attempts to combine closely related trades in the courses.

Table 8.5 shows the enrolment in 1988. These trades appear to be missing in 1988: Diesel Engine Mechanics, Instrument Mechanics, Foundry, Industrial Electricity, Mechanical Draughting, Pattern Making, Tool and Die Making. On the other hand, there are much higher enrolments in the more commonly found trades which Moshi does not teach: Motor Vehicle Mechanics, Carpentry and Electrical Installation.

It is very clear that a very small proportion of the trainees who leave Moshi NVTC each year have had access to evening classes in their trade. In early 1989, Moshi NVTC was planning with support from SIDA to make arrangements for evening classes in some of the trades which had been missing earlier so that tuition could also be offered to e.g. Diesel Mechanics.

Table 8.5 Enrolment in evening classes at Moshi NVTC in 1988

	Grade		
	III	II	I
Motor Vehicle Mechanics	45	14	-
Electrical Installation	18	7	3
Electronics	17	-	-
Refrigeration and Air-conditioning	14	-	-
Carpentry	10	9	-
Machinery Fitter/Fitter & Turner	25	15	9
Welding/Blacksmith General	15	4	-
Plumbing/Pipefitting and Boiler Mech.	7	4	-
Machine Tool Repair	12	-	-
(Mweka wildlife) Motor Vehicle	8	-	-
Total	171	53	12

Source: NVTD records, March-August enrolment⁹

But in a number of the 'Moshi trades' there were no evening class enrolments at all, by the beginning of the session. At any rate, evening classes teach only trade theory. Though they are nearly always held in venues with workshops (NVTCs, technical schools,

⁹The February figures were 163 (grade III), 55 (grade II) and 12 (grade I), suggesting fairly stable enrolment register.

industry), and at a time when these workshops usually are idle and could be used for evening class teaching, the only practical activity during evening class is at most demonstration work by the instructor.¹⁰ Further practical skills training is 'left to the employer'.

The complaints which are most commonly voiced by ex-trainees about their 'in-plant training' is *not* that there is no organized training in the workplace. Such training is apparently not really expected by the trainees. They think of it as a semi-skilled job, and the hope of progress lies in evening classes and incidental learning on-the-job. Espling *et al.* (1988:50) pointedly conclude that many of the trainees do not realize that the in-plant period is a part of their training. Many expressed satisfaction with their posting. When they do complain, it is typically about accommodation which they can ill afford on their meagre pay when they are posted away from home and relatives. They also complain about the total lack of contact with Moshi. The trainees feel there is nobody to turn to when things go wrong in their job. What goes wrong can be that they are not given work related to their training but casual, menial labour; or that they are not allowed time off to attend evening classes or sit for trade tests; or that their employer will not let them use tools from work for trades tests.

In such circumstances, it is understandable that many trainees would not receive the preparation which would enable them to pass trades tests. The vast majority will have no coaching at work, no syllabus, no evening classes (at least in the Moshi trades). Even the questions from earlier years, which could have served as a makeshift syllabus for the isolated ex-trainee, are not released.

Nonetheless, some do prevail. Under these circumstances, the number who do so is impressive, though it also shows that inplant training is disasterously inadequate as a provision for seeing training through to its intended completion. Table 8.6 summarizes various tables from Espling *et al.* (1988:63-65).

Table 8.6 Successful trade tests performed by early Moshi classes, by early 1988.

Class	Size of class	Trade test grade			No trade*	
		I	II	III	test	%
1984	195	7	17	53	118	(60%)
1985	168	1	15	48	104	(62%)
1986	250		1	51	198	(80%)

*This group consists both of those who have not attempted a trades test and those who have tried but failed.

Of the class of 1984, about 40% had by early 1988 passed at least Grade III. The intention of the scheme (Cf. Appendix 5) is that all should have passed Grade I by that

¹⁰One of the arguments used against practical skills training during evening classes is that 'tools would then walk away' because the participants are less easily controlled (they are not confined to quarters at the NVTC but come and go through the gate), and because some of them have acquired the cunning ways of adult survival in a harsh world.

time. Only 7 have achieved this. The results for the class of 1985 are similar. The 1986 group had not yet been long enough in the field to have had a go at Grade I, but even here there are 20% who had reached Grade III. However, Espling *et al.* (1988:67) also note that these passes are the result of a larger pool of candidates. They estimate for the test years of 1984, 1985 and 1986 a pass rate between 49 and 64% at these exams, as "*percentage of students participating who passed the test.*" Similarly, Athuman and Kombe's (1989) tracer study of Tanga trainees reports pass rates of 56-63% in the different trades, with small numbers of candidates (19-32) in each trade -well above the national average of about 40% in these trades tests.

A low pass rate implies that the number of trainees who actually tried out for the trades tests would be much higher than those who passed. Working backwards from Espling's figures, we will now loosely estimate the proportion who must have tried a trades test. If we cautiously estimate a failure rate of only 40% at Moshi (60% passing), the number who sat for at least one trades test would have been, for the class of 1984: 128 (65% of the graduates); and for the class of 1985: 107 (63%). If this is a correct inference from Espling's figures, it would mean that most Moshi graduates do try for a trades test¹¹, in spite of the adverse circumstances we have stressed earlier: loose connection between work (if they get work) and trade specialty, and that very few could possibly make it to any evening classes in their trade. It is not surprising they fail.

Finally, both Espling *et al.*, and Athumani and Kombe have located only few trainees who are clearly 'unemployed' or merely 'staying with their family'. Self-employment is also rare. But this is not surprising given that trainees have been traced through visits to industry. One would need to reach very high rates of the target group, before the extent of NVTC-leaver unemployment can be mapped with any certainty.¹²

8.5 The View from Industry

Espling *et al.* briefly note that when the tracer team spoke with employers, they received the impression that employers thought fairly highly of Moshi NVTC, though some complained about inadequate practical preparation of the trainees. It seemed as if most company spokesmen felt the high trainee turnover was due to low pay, problems of accommodation and irregularities of production. Better liaison between companies and Moshi NVTC was recommended in the report.

Närman (1989) studied industry in Kilimanjaro (Moshi) and Arusha regions in depth. Shortage of skilled manpower was not among the constraints on productivity spontaneously volunteered by company managers during the interviews. Nonetheless, on probing, it was often said that "*It is hard to get skilled labour.*" A priority by many employers was skilled workers who could be trusted. Some evidence of honesty and reliability is often valued more than skills certificates. Perhaps especially in parastatals, it is hard to hold on to and motivate competent and reliable skilled workers.

¹¹Espling herself has, however, some doubt about the accuracy of her base data for Table 8.6, so not too much importance should be attached to the implications which follow from these data.

¹²Närman says that more recent tracing data, not using 'tracing through industry' shows similarly very low unemployment.

Närman infers that in these regions which are Moshi NVTC's immediate environs, knowledge about Moshi NVTC and its objectives was fairly low among many industrialists. Often Moshi NVTC was used as some kind of service workshop by companies who would not think of going there for trainees. Perhaps this simply mirrors the situation of many companies: they are overstaffed relative to capacity utilization, but they lack spare parts. Närman's employer survey also confirmed that many employers (like the trainees themselves) regarded basic training as if it pretended to be job-readiness training, and regarded in-plant training as normal employment.

A difference between parastatal directors and private directors was noted: the former had faith in trades tests, the latter did not. The former often also have more faith in institutionalized training, and are more likely to espouse the view that the company has a social responsibility to contribute to the wider training effort. Conversely, many private employers have disdain for outside training: *"We never recruit craftsmen. We make them."* *"Could take on trainees, but would still need to train them our way."* *"Our own training is enough."* Others were more positive. In any event, though trainees placed by NVTCs may not be singled out for much systematic training within companies, it should be recognized that training is carried out in the companies, on industry's own terms, for employees whose new tasks are deemed to require training.

Many companies suggested that Moshi NVTC should provide more specialized short courses.

A main conclusion of Närman's survey is that an active dialogue is needed between Moshi NVTC and industry. It is important for Moshi NVTC actively to reach out around the placement of trainees, and to provide the staffing time and transport to make this possible. But dialogue is more than that: it would mean seeking to meet the training needs of industry, on industry's own terms, by short or long courses, rather than looking to industry as a source of 'places' for trainees. As noted in Chapter 1, 'Responsiveness' and 'flexibility' are at present international buzz words in this highly 'demand driven' rather than 'supply driven' view of training. Such a dialogue, demanding as it would be, would probably also help to make industry take 'in plant training' more seriously. It has been noted in Chapter 6 that this twin emphasis on 'dialogue' and 'flexibility' requires more time and skill from management of training. It could also be a more expensive approach.

8.6 A Social Rate of Return Analysis - Lovén's Study

Lovén (1989), a student in Närman's fieldwork team, wrote a paper in which he sets out to calculate a social rate of return to the investments in Moshi NVTC. There are many problems with such calculations, as he would be the first to admit. A major controversy is whether income is a valid measure of the economic benefit which society reaps from labour. Earlier figures and discussions in Chapters 7 and 6 have stressed the enormous gap between Tanzanian pay levels and the cost of developing and running Moshi NVTC - even when the cost of technical assistance is not taken into account. When the cost of TAP is also added (as Lovén does), it is not surprising that adapting internal rate of return formulas to Tanzanian income streams and Moshi costs, yields a negative social rate of return - Lovén's estimate is minus 2.6%. But he also showed that the result is not much affected by his sensitivity tests: the result does not change dramatically even if a longer life-span of investments is supposed (40 rather than 20 years), nor if benefits are adjusted upwards (estimated earnings are raised by 50%). In none of the sensitivity tests did the estimated

social rate of return exceed plus 1.5%, a rate which would hardly make sense as an adequate return on an investment. Lovén points to some obvious external explanations for the poor result: industrial decline which have eroded wages by more than 50% in the 1980s, and devaluations of the TSHS which have sent the cost of Swedish assistance skyrocketing when expressed in local currency.

However, if one regards the project from Tanzania's point of view, without attributing direct or indirect cost to Swedish assistance, Lovén concludes that annual social benefits, indicated by income streams, would exceed Tanzanian social costs by far. That would be an uncomfortable view from a development aid perspective, for it would not consider aid as investment at all. Lovén's cautious bottom line is that *"the project is beneficial for the recipient, but that the benefits are far too small to meet the demands we normally have, or at least should have, on public investments."* One would infer that if income of skilled workers in Tanzania did not grossly understate the value of their contribution to the economy, then the investment in Moshi has been a very poor one. But that if is still a big one.

Quite apart from the controversy about the link between pay and productivity, some observers would consider rate-of-return calculations which include as costs, foreign grants under dramatic currency devaluations, to be frivolous. But others could reasonably conclude that the negative social rate of return coming out of Lovén's calculations highlights the need to justify investments of these magnitudes as **strategic investments**, the results of which should have important ramifications beyond the immediate impact so that further development would crucially depend upon them. Otherwise, these massive investments are hard to justify. Examples of strategic development in vocational training would be training of instructors. The vision of Moshi NVTC was that it would play such a strategic part in the development of Tanzanian industry. Moshi was to very directly serve industry with 'needed' skills in key areas. Instead we now find that in these very skill areas, it is difficult to place trainees for apprenticeship! So far Moshi NVTC has hardly lived up to the vision of serving 'strategic needs' - partly because of the collapse of the industrial strategy which inspired the concept of Moshi to begin with, and because of some common weaknesses in the 'manpower planning' approach to training (See Chapter 1.2.1).

8.7 Conclusion

It is clear that placing trainees is a demanding task which requires much energy and dedication, much mutual help among those responsible, and much active canvassing of industry. To place girls is especially hard in the most distinctly 'male' trades. Private companies are allegedly harder to appeal to than parastatals. It is not a situation where an in-plant training officer has the needed power to impose any conditionalities on industries who take trainees. Rather, unless industry want trainees for sweatshop conditions (this happens too), then it is under present labour market conditions usually industry which is doing the school a favour, not the other way around. There is much movement after the formal 'placement'. Therefore placement statistics do not describe reality adequately. Some employers change their mind. So do some trainees. Some trainees are later pushed out, others 'run away'. Many find their way into a 'job' without the help of the NVTC. Are they still *trainees*?

In fact the placement usually is at best a chance to pick up a semi-skilled job in one's trade. There is very little awareness of a training obligation, and employers who take

contracts seriously often refuse to sign one. The training that does occur on the job is usually merely incidental to the natural flow of work. If a trainee is lucky, the work into which he has been placed or which he has obtained by his own effort, will be at least broadly within his trade. There has, before this Evaluation, been no real follow up from the NVTC or from the Divisional headquarters.

Under these circumstances it is natural that those who are trained in small, highly specialist trades, often end up in more broadly based work. The most glaringly clear example: first you are supposed to have had Carpentry in order to enter Pattern Making at Moshi NVTC, but afterwards the only job you find is as a carpenter. The trades at Moshi NVTC very often suffers from poor connection between specialism and later work. For many, it is indeed back to earlier basics.

The analysis of labour market absorption shows differences among the trades, at Moshi NVTC and elsewhere. Some are in great demand, others lead nowhere. NVTD should be ready to cut its losses with those which lead nowhere, after careful consideration of what the reasons are and whether improvement is likely.

The highly specialist Moshi trades were originally envisaged to be filled in close contact with industry. This has not happened. This is one reason why they often do not lead to sufficiently closely related work. If these trades are to be kept, they must be based on very close links with industry. Those links are now too weak, in spite of energetic and experienced placement work done at Moshi. Even in the Kilimanjaro and Arusha regions, there is relatively low awareness among industrialists about training at Moshi NVTC.

Given these loose connections among training, placement, eventual activity, and given the lack of deliberately organized training of apprentices in companies, it is not surprising that many fail to present themselves for trades tests, and that when they do, many fail. Evening classes should be systematically strengthened to reinforce preparation for trades tests - it is an illusion to leave 'practical training to industry' at least for those evening class attenders who come from NVTCs. Again, the problem with small and specialist trades is that they do not lend themselves to evening class teaching. The trainees are too few and too scattered.

Any attempt to calculate the social rate of return to the total investment made at Moshi NVTC (TAP included) is bound to lead to a discouraging result. Taking such calculations with a big pinch of salt one is nevertheless induced to look to Moshi for a strategic role in vocational training in order to justify the expenses. So far Moshi NVTC has not plaid that role.

CHAPTER 9

CONCLUSIONS AND RECOMMENDATIONS

Numerous suggestions and recommendations have been made in the earlier chapters. They will not all be repeated in this Chapter, which summarizes only the *main* observations and recommendations, concerning the future development of vocational training in Tanzania, and the role of Swedish assistance within that larger task.

9.1 Limitations

Most of us who have been involved in the Evaluation are outsiders both to NVTD and to SIDA field operations. Outsiders can probe into conditions which insiders take as granted, thereby providing a fresh view of how a training system operates. But the inside view will have close-up nuances and an awareness of constraints, which outsiders often lack. All 'outsiders' in this Evaluation recognize that it takes more than recommendations from short term consultants to produce sound proposals. It is also recognized that it is easy to recommend and harder to implement.

Most enrolment in vocational training is not the operational responsibility of the National Vocational Training Division of the Ministry of Labour, Culture and Social Welfare (Cf Table 2.6). This is especially true for training serving agriculture or the informal sector. With few exceptions, the Evaluation fieldwork has looked at training for modern sector work. Our knowledge base for advice on the non-formal training and the informal economic sector is weak.

9.2 Achievements of the NVTD System

It is commonplace to say that it is difficult to develop effective and efficient vocational training systems. There is a long string of well known problems (Cf Chapter 1.3.2) which are especially daunting in developing countries. In view of these difficulties, the achievement of the National Vocational Training Division in Tanzania merits respect. There is no dearth of applicants to its courses. Rather, the problem is to select in an equitable way from a great many applicants those who are most suited for vocational training. Instructor turnover is low. The National Vocational Training Centres equip youth with basic trade skills, with relatively little drop out during the basic course. Unless a centre is assisted by donors, there will be great scarcity of basic teaching materials and consumables; but there is also considerable self-help effort, e.g. using building craft courses in order to renovate or build facilities. The utilization of scarce instructors, equipment and facilities should be improved but it is as good as in most other developing countries. Though the match after basic training with 'apprenticeship' or jobs is loose, it appears that trainees usually end up employed - though not necessarily in the trade in which they trained, in spite of the queues of school leavers in the labour market and overstaffing in industry. It is true the scale of basic training has grown very slowly, from the pre-Independence start (See Chapter 2.1.1). But it is likely that the faster expansion (which was planned) would have led to labour market absorption problems (See Chapter 3). The present policy of consolidation in order to maintain and improve quality of training, rather than building new centres, is well justified. In terms of operational efficiency, what has

been developed by NVTB is no mean achievement in a badly depressed economy. The top leadership of NVTB has played no small part in bringing this achievement about, also in attracting support from donor agencies, though there are common complaints that this leadership fails to delegate in a consistent manner and that it takes a long time for basic managerial business to be expedited.

9.3 Recommendations on Vocational Training in Tanzania

9.3.1 General Observations of Relevance for International Debate on Training

The Tanzanian experience supports the claim (See Chapter 1) that institutionalized vocational training works best when it occurs in specialized training institutions, not in vocational streams within secondary schools, and when it is under a specialized vocational training authority rather than administered jointly with general education. In spite of its weaknesses, there is no doubt that NVTB is the premier agency of vocational training in Tanzania, not the Ministry of Education.

The Tanzanian model seeks to combine institutionalized training and apprenticeship. It is the institutionalized part - basic training in NVTCs, which works best. The extension of training into industry does not work well. Usually training in industry is only incidental to the natural flow of work without any special provisions. It is important to stress this point, for there is internationally much disillusionment with institutional training and much optimism about the training potential of industry. It is indeed important to exploit the training potential of industry, but this is a more demanding organizational task than developing institutionalized training.

A third finding is that it is the broad trades which have the best connections with later work. Specialized training preparing for small niches of economic activity - whether 'advanced' like Pattern Making, or more simple, like Electric Motor Rewinding - does not connect as well with work. It is especially the specialized trades which require close relations with industry. More so than other trades, they need to recruit persons who already have relevant industrial experience, and who have a fair chance of returning to the industries in which they have worked. It is also very difficult to organize supplementary evening classes in the narrow specialties, after trainees leave NVTC and are dispersed geographically. Basic vocational training should beware of narrow specialties preparing for occupations in which few are economically active.

A fourth main finding is that the planning of training must respond to effective labour market demand. This means short-term planning rather than targets derived from unrealistic long-term development plans. A variety of indicators are needed: labour market monitoring, the ease with which trainees in different trades are placed in apprenticeship, tracing of trainees (which should ideally be conducted by the training centres themselves and connected with out-reach supervision of in-plant trainees), and studies of 'target occupations' to ascertain how they recruit skilled workers, what training such workers in fact have received, and strengths and weaknesses in that training. Hard statistical information is valuable, but much valuable information can also be gained by systematic collection of the views and impressions which training staff who are close to the placement process have of labour market prospects, and by encouraging former trainees to stay in touch with their

training institution.¹ It is not enough that such impressions 'are there', they need to be systematically collected. The central administration is not automatically necessarily informed of the valid 'impressions' and 'hunches' which key local staff can have.

Also in Tanzania, the experience is that the management demands of vocational training are unusually great. As the activities of NVTD has expanded, so have the strains on its management capacity. Recruitment of competent staff in adequate numbers, with sufficient job stability and clear lines of responsibility and effective delegation remain important. At present too much decision making is concentrated in too few hands, leading to unacceptable delays in expediting basic administrative functions, such as answering letters and deciding sufficiently long in advance on whether contracts of technical assistance staff should be renewed or not. The fact that two top officials are now nearing retirement further accentuates the need for effective delegation and grooming potential successors. 'Institutional development' measures should be considered at NVTD headquarters to ensure broader sharing of information and responsibility. Sending staff on courses abroad is valuable but does not obviate the need for greater institutional development efforts based in the NVTD itself.

9.3.2 Closer Relations with Industry

Involving industry at high levels in framing NVTD priorities and in curriculum design is valuable but not sufficient. The links with each NVTC are very important and should be strengthened. This agrees with Tanzanian policy of converting the National centres into Regional ones, with a Regional Board of Governors that should have strong industrial representation. A two-way exchange of services between industry and the NVTCs is the ideal. NVTCs in collaboration with individual firms could design short skill-upgrading courses for employees. This is especially important in the present labour market when industry has more need to make present staff more productive than to hire new staff. At Moshi NVTC, links with industry entails some production of spare parts and other services. Such contact is an opportunity to gauge skill demand in industry and to prepare the ground for placing trainees. This opportunity should be better exploited. At present, there are industrial managers in the Arusha - Kilimanjaro regions which are well aware of Moshi NVTC's 'service center' activities, but who have only hazy ideas of the vocational training programme there.

Short courses for industry require credibility with employers and hence demonstrated training competence. Short courses demand more entrepreneurial management than do regular courses. They need more cost recovery, for they will tend to have a higher unit cost than regular courses, just like industrial tailormade 'batch production' will have higher unit cost than continuous process. Short courses need to be aggressively marketed, and the markets are often small and shifting. Local demand can be quickly exhausted, so that there

¹This may not be so difficult. Techniques of tracer studies could usefully be demystified. The training institution could promise, before trainees leave, that if trainees in one year's time send information about "*What you are doing*" and "*Where you are*", they would be sent a class picture, or a newsletter about what "*everyone is doing*". An alumni club could be formed, with reunions at the training centre. Such simple measures are also signals to the trainees that the institution cares about their future. They are really part of wider efforts to build a sense of community among trainees and former trainees, which is valuable both for training and for trade networks. The placement officer should use every opportunity to get second-hand information about former trainees. Placement officers could be given a short course in how to conduct such tracing. Tracing data can also be used as inputs into syllabus revision: e.g., "*In preparing for your job as a _____, what was missing in your training?*" "*What skills have been of little use to you?*"

is a need to 'go national' in order to follow up a local success. They require more management and teaching skills, and the incentives to develop such skills and take on the extra work involved. If training is combined with production for markets, especially good business management skills are required.

The vision of an entrepreneurial training institution is attractive as an ideal. But in setting actual goals, it is important in any country to strike a realistic balance between the demands of responsiveness and 'flexibility', on the one hand, and what is feasible. What can be done will vary among the NVTCs and will also depend on the trade. Policy should be to encourage experimentation, whether it means starting new courses for production supervisors (Moshi NVTC had one which lapsed), encouraging short skill-upgrading courses for workers, canvassing industry more actively to recruit more sponsored trainees for the regular courses in advanced industrial specialities, or experiments with 'self-reliance' production units. Donors should support such experiments, but if technical assistance is a prerequisite, an early hard look is needed on what the prospects are after TAPs will be withdrawn. It is no good to invest in entrepreneurial activity in order to achieve cost recovery, if it collapses after an expensive expert leaves. Enterprise is risky - in training as in business. It is also difficult to recruit competent technical assistance of this type. Any cost recovery or profit making proposal of the 'self-reliance' type should be subjected to a hard-nosed scrutiny as if it were a small business venture, before any outside finance is offered.

9.3.3 Instructor Training, Staff Development and Incentives

The new Vocational Teacher Training College at Morogoro is a strategic investment. It is very important to get it right. As of 1989, the facilities at Morogoro were clearly underutilized. It had proven difficult to recruit enough instructor trainees. This could be a recurring problem, for the VTTC was based on the 20-Year Plan for vocational training which been shown to be unrealistically ambitious as to scale of training (See Chapter 5.5). To be fully utilized, the VTTC should take on other and more 'entrepreneurial' functions than just regular instructor training courses. This wider role is also appropriate for a teacher training college. It requires great care in recruiting local staff with some potential of personal dynamism. No amount of overseas training can compensate for staff of low potential when such a strategic role is to be filled. The NVTD should check that the staff which has been placed there meets this requirement, and if they don't measure up, they should be replaced. There should be similar readiness to replace expatriate experts at the VTTC if they fail to measure up to high expectations. The unit recurrent cost of the VTTC is bound to be dramatically high, it must therefore measure up to demands as a strategic investment.

In selecting instructor trainees, NVTD looks for prior industrial experience. In Tanzania, like nearly all other developing countries, this requirement is extremely difficult to meet.² There is then a risk that those with industrial experience will be the 'second sortings' from industry who fail to make a career there, rather than the proficient and experienced craftsmen one would like to recruit. Chapter 4.3 discusses the failure of earlier attempts in Tanzania to recruit into instructor training persons with sound industrial experience. One should therefore recognize the value of 'quasi-industrial or surrogate industrial experience' as an alternative, e.g., good performance as auxiliaries at a NVTC, construction brigade

²One exception is Kenya, where instructors in technical training schools are recruited from polytechnics, and where you need to be sponsored by industry in order to get access to polytechnics education in the first place (Lauglo, 1985b).

members (Moshi), or in industry-like production units (Dodoma). If persons with experience who are now within the NVTD system, are told that to become instructors they must 'first join industry', chances are they will remain in industry. It would be better to recruit such persons to instructor training directly, if they show promise. *Neither 'X years in industry' nor technician certificates should categorically outweigh conscientiousness, craft skill, and ability to guide and instruct others - if this has been demonstrated and is known to the NVTD.*

It is a weakness of the VTCC that opportunities for local practice-teaching hardly exist in Morogoro and that workshop facilities cover only a restricted range of trades. The VTTC should have been built close to a major training centre. It should be firmly recognized that instructor trainees need skill improvement in their trade, and that pedagogy must not be taught in the abstract but requires direct contact with practical application. VTTC lecturers must be deeply involved in supervision of practice teaching.³ There is otherwise great risk that the lecturers at the VTTC will be too detached from the practice for which they should prepare, so that they will teach 'education theory courses' in lofty isolation from the realities of skills teaching. A very direct relationship among theory, teaching practice, and trade skill is essential in the didactics of practical skills teaching. This is especially true in the Tanzanian situation where the trade skills are weak.

Instructor training and curriculum planning should be closely related since they draw on similar and mutually reinforcing skills. VTTC staff should therefore be actively involved in revising the trade syllabuses.

It is important for NVTD to give staff throughout the system scope for staff development, a sense that there are career rewards for good performance, and that they matter as human beings. More open flow of information and a more participatory style of management are desirable, at headquarters as well as in each NVTC. Provision of staff housing is an important fringe benefit. Incentives from 'regularized' self-reliance production/services at the NVTCs can also boost morale. Donor-financed study tours abroad have a morale boosting value, beyond the value of the skills acquired. There is also a need for local and national meetings, short courses, and seminars that bring together staff with similar tasks and strengthen the sense of professional community. Morogoro VTTC should take a lead in organizing national events of this kind, and in providing outreach support for local events. Long term technical assistance should be requested at the VTTC, and with such 'extended tasks' in mind.

9.3.4 The Planning and Utilization of NVTCs

The present NVTD policy of consolidating and building quality rather than quantitative expansion is well justified. New provisions should only be planned if supported by all available information about effective labour demand. Even so, a new trade is bound to be a leap in the dark, and should then be aggressively marketed by e.g., special advertisement in newspapers so as to become visible to employers.

At Moshi NVTC, feeding and accommodating trainees in 1989 cost 40% more than the entire wages and salaries bill for local staff. Efficiency implications are clear: day-centres

³Others can of course also be involved, but care should be taken to recruit for this function persons of experience and unusually strong teaching competence.

should be prioritized over boarding facilities in any expansion of the NVTCs. If equity considerations override this priority, then the recurrent cost of boarding should be clearly on the table, in internal councils as well as in negotiations with donors.

To promote efficiency, centres should be built in locations around which there is economic activity related to the trades taught. It is better to develop a smaller number of fairly large institutions with depth of resourcing, than to spread equipment and scarce staff thinly. Developing a new centre by converting existing facilities makes little sense *unless the location is right*. It can be a short-term gain to get training established quickly in existing facilities, but it is a long-term problem to be physically isolated from the industries with which you need to have close links - or to be inconveniently located for connections with needed public utilities. The NVTD recognized this in seeking to move the printing trades from Tanga to Dar es Salaam, but seemingly not when construction trades are to be taught in the midsts of farmlands at Arusha and Morogoro NVTCs.

Resources can be better utilized. Centres which have libraries hardly use them at all. Workshops and equipment now are idle too many hours during the workday. Experimentation with the double shift system in the modern, donor financed facilities should be expanded. There is considerable variation in trainee-instructor ratios among trades and NVTCs, indicating room for improvement. Boarding centres should also take on day students if they do not already do so (Moshi does not), to make better use of capacity.

Much training time is now lost because trainees arrive late in the teaching year. This is certainly true at Moshi, and it should be remedied.

9.3.5 Selection of Trainees

The biases (parental background, region) noted in Chapter 7.1 should be squarely faced, no matter how 'sensitive' they be, and they should be examined with a view to remedy - taking care not to detract from training efficiency when remedies are designed. Training institutions are demoralized by rumors of admission by favouritism. The system is rife with rumours about such petty corruption. It is therefore important that the process of admission be open to public scrutiny, and that NVTCs have some notice by NVTD about the background of the trainees who are coming, not merely their name. But the prime concern in a training programme of this type should be efficiency, not equity.

NVTCs enrol such a small proportion of the age group that equal opportunity would in any case mean minute opportunity for any group. For vocational training the overriding concern should be to recruit persons with some strength of interest and aptitude for the trade concerned, so that they can become competent skilled workers. One must have very powerful political reasons to take equity measures which would conflict with this prime consideration; but this is no defense for favouritism by backdoor admission by the well-connected.

The present policy stresses nominations by primary school leavers by Regional Education Officers. Unless it could be combined with some tests of practical skill, this selection method prioritizes neither strong interest in the trade - many don't know what they are going to - nor aptitude for practical trades. What it prioritizes is some English language proficiency.

Nevertheless, at Moshi NVTC, both staff and trainees thought that the trainees' main weakness is English, Maths and Science. This weakness can be an argument in favour of recruiting students from secondary school (Form 2 or Form 4). But such extra general education is a long and costly addition. It could also reduce external effectiveness by giving trainees stronger wishes and wings with which to flee the trade. If dearth of general skills is the problem, then it would be more cost-effective to add, for those who have been admitted, a fairly short preparatory course in key general education subjects. But it could also be that general education deficiencies are not noticed so much at NVTCs where there is no need to communicate with expatriate trade experts - who after all, are supposed to be working in the NVTCs only temporarily. In the NVTCs own marking at the Certificate of Basic Training (Table 7.5), the marks in Science and Maths seem weaker than in English, but all these marks are weakly correlated with marks in the key subject of practical trade skills. This suggests that screening by skills in English does not do much to ensure good practical aptitude among the trainees. There is a case for screening directly on practical aptitude.

There is a rough and ready way to find out whether tests of practical aptitude really have anything to offer. Such tests are now being used for admission to the Swiss supported trades at Dar es Salaam NVTC, and also at Leguruki VTC (a private community school associated with the Lutheran Church). Administer both of these tests, or some other adapted test to all new trainees at some NVTCs. Then simply measure the correlation between these initial test scores and the marks in practical trade skills which trainees obtain at the end of basic training, one year later. The higher the correlation, the better the test will be as a screening device on practical ability. Donors could offer the services of military testing expertise in this area.

We were unable to compare the performance during and after NVTC of groups admitted under different modes at present: those who are nominated by REOs, those who come in by 'traditional applications', and those sponsored by industry. Such comparisons should not be hard to make and could be a basis for judging which of the present selection methods works best. One would expect sponsorship to have advantages. Is this true? If so, more active canvassing of industry for sponsorship is needed because sponsorship now fails by far fill its assigned quota.

9.3.6 Curriculum and Teaching Materials

There is excessive proliferation of closely related trades. The range of trades should be simplified. A fresh look at structure is now needed because of the plan to extend basic training to 2 years. Extending the duration will inevitably increase unit cost and reduce output, even if resources are better utilized. The plans should be appraised and costed.

There is no educational reason why basic training in all trades must be of the same length. The NVTD should consider varied duration of basic training, depending on trade (in principle, this exists now), e.g., basic one-year courses, basic two-year courses, or a one-year course followed by alternative one-year variants, or by half-year courses. In connection with structural revision, syllabuses should be examined and the need for revision appraised. In revision work, one should aim at close links between trade theory and trade practicals to ensure that these two aspects of trade reinforce each other. In general, the curriculum and inspection work needs to be further strengthened at NVTD headquarters, in close association with the VTTC at Morogoro. Further technical assistance is needed here.

The dissemination of existing syllabuses throughout the NVTCs is uneven, and the syllabuses in use vary as to format and specificity.

There is great shortage of teaching materials and resource books for instructors in trade theory. Donors should be approached for assistance here. As noted above, Morogoro VTTC should take a lead and develop a 'teachers centre' function in connection with in-service activity for instructors, stressing active use of available source material also in its regular courses.

9.3.7 Evening Classes - Part Time Courses

For NVTCs, evening classes are an important point of contact with former trainees who are now in industry, and with a much greater number of persons who never went to NVTC but who are preparing for a trades test. This opportunity for contact with industry and with workers hoping to pass trades tests should be better exploited. Employers should be informed about how their employees are doing in these classes. This now rarely happens. At evening classes, trainees should also be asked about conditions in their in-plant training, and reports should be made to the NVTD.

For the trades tests, most candidates have no syllabus other than the evening classes. There is a case for using evening classes to teach more than trade theory - they should also be used to teach some practical skill, though one recognizes that the time available is now limited. The time could be extended, on an experimental basis, for some groups. In Dar es Salaam, where 2/3 of the evening class enrolments are found, it should be possible to extend some evening classes so that they could effectively serve as a part-time 'adult training' programme. There are several advantages: since workshops are not now used in the afternoons, capacity would be better utilized. Trainees would be more likely to already be working in the trade concerned and have relevant work experience upon which teaching could draw. The great numbers who seek to take trade tests and the difficulty in passing, indicate that there would be a great demand for such 'evening classes with practicals' or part-time courses.

9.3.8 In-plant Training

Here training schemes and log books are needed, and more canvassing and proselytizing among employers. But, especially if one tries to shift some real training responsibility onto employers, it is unrealistic to expect that they will sign contracts with trainees whom they have had no chance to see and appraise, and who have no previous experience of industrial work. This reluctance to sign (See Table 8.1) is understandable inasmuch as employers often feel they cannot trust even their regular employees (See Närman, 1989). If NVTD wants to regularize in-plant training, turning it from semi-skilled work into training according to contract, then it should recognize that employers need some time to look trainees over before they can firmly commit themselves.

NVTCs should inform trainees better about inplant training. At present many receive no briefing from their NVTC about their rights and obligations according to the apprenticeship contract.⁴ Often, they seem to have no expectation that any training will be organized for them in the workplace. NVTCs should follow up trainees to monitor progress and

⁴The contract document uses terminology which must be quite inaccessible to the trainees.

supervise generally. Now there is no contact, except by chance encounter. It might be worth inviting the trainee supervisors in industry, to a short course/seminar, starting with the largest firms.

9.3.9 Simplify the Trades Testing Structure

The complexity of trades testing is daunting (See Appendix 5), the expense is considerable, and the failure rate is shockingly high. The system should be reformed. Industrialized countries with a trades test system usually have one basic level, the journeyman's test, that certifies a completed apprenticeship. The NVTD should consider simplifying the structure by coalescing Level III and II into one basic trade certification, leaving the more rarely attempted Level I as a crowning achievement for the few. It should also consider whether the range of tests on offer should be reduced. A simpler structure should make the testing system more effective, less dauntingly complex, and less costly.

Since candidates usually take trades tests without any other coaching than evening classes, which cover only theory, it is not surprising they fail⁵. In addition to establishing practical skills training in evening classes, the NVTD should give more guidance to the candidates about the kind of tasks which they will face during the trades test. Releasing old test papers is one way to do this. When no other syllabus is effectively in place, it becomes even more important to make the exams publicly available so that people have a chance to judge if they are up to the task and so that they can better prepare themselves. Openness about past test questions can also help build public confidence in the integrity of the tests. Quality of public service is promoted by public scrutiny, not by secrecy.

9.3.10 Cooperation among the Major Donors and the NVTD

It is important that NVTDs recent initiatives to strengthen cooperation among donors should be further developed, to ensure complementarity and prevent damaging rivalries. This is especially important for aid activities which are intended to have system wide impact.

9.4 Recommendations for SIDA

9.4.1 The Achievements of Swedish Assistance

In collaboration with NVTD, Swedish assistance has successfully developed a modern vocational training centre at Moshi, pioneering basic vocational training in a number of trades which are new to Tanzania. Moshi NVTC has been built and equipped in a severely depressed Tanzanian economy which has delayed construction and procurement of supplies. SIDA has taken great pains to establish the training programme on a sound footing, with required facilities and equipment, training-fellowships for Tanzanian staff, technical assistance on a large scale and over a long period, with equipment, supplies and a very great (excessive?) number of consultancies. Moshi NVTC is well equipped; and the standard of basic vocational training there has a high reputation among the NVTCs in Tanzania. This is a major achievement of Swedish development aid to vocational training in developing countries. But it has been achieved at great expense, and with continued

⁵Though those who have come through NVTCs fail also too often, as shown in Table 8.5 .

dependence on very costly technical assistance. An enduring flaw is the poor connection which many trades have with relevant placement in industry, and lack of NVTD follow-up during in-plant training. Only a minority of trainees from Moshi has an opportunity to attend evening classes in their trade, during in-plant training. It is suggested that there were flaws in the assumptions behind the concept upon which Moshi NVTC was based, and that the task of Swedish TAP should have been clearly defined to also include placement and follow-up of in-plant trainees, and industry liaisons generally.

The desire to work through the NVTD system to a greater extent than some other donors, without a clear project manager role at Moshi, has added to the burden of the programme officer in Development Cooperation Office at the Swedish Embassy, causing that role to take on informally a number of project management functions, with lack of clarity in the actual lines of responsibility within the Moshi project. Nonetheless, the relationship with the leadership of NVTD has been close but with a major breakdown during 1988-89. Good relations have now been restored between DCO and NVTD.

A major collaboration with DANIDA to strengthen the work of NVTD headquarters by means of technical assistance had little effect, considering the expense and workyears incurred.

The effectiveness of support for rehabilitation work at Tanga and Mwanza, and of support to Morogoro VTTC cannot yet be evaluated, since these projects are new.

9.4.2 Support for NVTD headquarters

Along with other donors (UNDP/ILO and DANIDA), SIDA has supported the work of NVTD headquarters. In spite of the poor record of earlier TAP assistance at NVTD, there should be continued readiness to give such support because of the obvious importance for the entire training system of good planning, management, and professional support capacity at NVTD. Support for NVTD should be designed in close collaboration not only with NVTD itself but also with the other donors. It could therefore be that some of the recommendations below will be implemented by other donors. Complementarity should be the aim, and unnecessary overlap must be avoided, especially since experience has shown that 'overload' of TAP presence in NVTD headquarters can be a problem (See Chapter 5.2).

TAP assistance in NVTD headquarters requires very clear terms of reference, agreed well in advance with NVTD, which leave no doubt about tasks and channels of reporting. Needless to say, special care is needed in the recruitment to ensure good quality of TAPs, and needed resources for their work should be agreed and arranged in advance.

SIDA should make available support for the development of a computerized management information system at NVTD, that could improve management by better monitoring of expenditures, procurement, utilization of facilities and staff, performance and promotion readiness of staff, and records on trainees from their selection, their performance at NVTC, to their progress during in-plant training in the various trades, and finally trades tests. NVTD also needs to improve its general capacity for project planning and management, its procedures for selecting trainees, its curriculum development and inspection work, its evening class programme, its and trades testing. SIDA should be ready to offer support to such improvement, in collaboration with other donors.

9.4.3 Support to Moshi NVTC

SIDA should scale down its TAP support to Moshi NVTC and concentrate on two long-term contributions: support for recurrent expenses relating to equipment, spare parts, and imported consumables; and technical assistance backed up by related resources in order to develop much closer links with industry. Since experience has been that it has proven very difficult to get a real commitment to withdrawal of TAPs, from all the parties locally involved - including DCO, there should be a firmly agreed plan for sharp scaling down of TAPs at Moshi. This plan should specify the role of TAPs in clear terms. As full-time TAPs in the trade departments are withdrawn, there should be readiness to put in short term consultancy visits, for 'stocktaking' and advice at intervals. One should try to enlist consultants with technical assistance experience from Moshi, in this activity.

It is very clear that many of the 'advanced' highly specialized trades at Moshi have so weak external effectiveness that they cannot be justified as they now operate. Trainees are deployed or find jobs in broader trade areas than what the concept behind Moshi assumed. There should be working parties to propose remedial action for these trades. More involvement of industry is crucial, especially more trainees sponsored by industry. Later, SIDA should support redeployment of training resources for training in more broadly based trades, in those 'Moshi trades' which in spite of remedial action remain poorly connected with relevant in-plant training and which need to be closed down. There should be a timetable for these painful decisions as to whether one should 'cut losses'. To give a stark example: Pattern Making should be discontinued unless trainees find relevant placement in industry. Or should it be tried as a short course for company employees? One can expect great resistance from many quarters against the closing down of trades in which so much has been invested and with which many Tanzanians and Swedes have strong personal commitments. There will therefore be some wishful thinking about 'ease of remedy'. Both SIDA and NVTDC therefore will need to be genuinely willing to 'cut losses' and to reallocate training resources.

9.4.4 Support for Rehabilitation and Quality Improvement in Other NVTCs

SIDA should welcome requests for extension of this activity, also to other NVTCs, drawing on the experience from Tanga and Mwanza. Where appropriate, SIDA should support extending the capacity of existing centres. But priority should be given to quality improvement and better utilization of existing facilities. This Evaluation raises some questions about the appropriateness of station-system pedagogy as a general model to be encouraged in Tanzania (See Chapter 7.2.2). This criticism should be discussed among SIDA, NVTDC and the centres concerned. Even if the station system concept is vindicated in these discussions, the staff development component in the 'rehabilitation' work should be wider than support for a station system pedagogy. It would be desirable to increasingly involve the VTTC at Morogoro as a base in out-reach staff development. But Swedish TAPs whose special task it is to lead the rehabilitation and quality improvement work should be based at the NVTCs concerned.

NVTDC has requested major DANIDA support for rehabilitation and quality improvement in a number of centres, with a steering unit located in NVTDC headquarters. It is important that SIDA supported activity liaise closely with DANIDA supported work, to ensure

complementarity and to share ideas and experience. Similarly, close relations should be maintained with Swiss technical assistance staff at Dar es Salaam NVTC.

9.4.5 Support for the VTTC at Morogoro

The strategic importance of the VTTC and the role it should aim to play are discussed above (9.3.3). SIDA should continue support for the Vocational Teachers Training Centre and welcome requests for long term TAPs, drawing on experience from support to such institutions in other countries (e.g. Zambia). For the VTTC to play a leading role and make use of its capacity, SIDA should welcome requests to support a diversification of the VTTC's work, into short courses, materials development and dissemination, and curriculum development, and out-reach institutional development work in the NVTCs. In view of the Moshi experience, SIDA should seriously consider the need for a clearly designated project manager with executive responsibility at the VTTC, notwithstanding the desire to work 'within the system'. At present (July 1990), SIDA has great problems in recruiting a suitable person to serve as a principal of the VTTC. Needless to say, it is urgently important to solve this problem.

9.4.6 Support for Vocational Training outside the NVTD

The NVTD is not an appropriate conduit for other assistance than instructor training (including short upgrading courses), curriculum advice, and general professional advice (inspection) to training institutions outside the Ministry of Labour, Culture and Social Welfare. But SIDA could prioritize assistance to these 'possible' outreach services that the NVTD can give to other institutions, especially instructor training and in-service courses at Morogoro with linked curriculum and teaching materials help, in order to achieve some concentration of effort.

A wider clientele than NVTD trainees can also be assisted through enriched NVTC evening class offerings and improved trades testing. SIDA should offer assistance here. But, trying to use NVTD, as a conduit for needs analysis, or planning of facilities, or equipment and tools to training institutions for which it has no operational responsibility will be ineffective - partly because of the crossing of bureaucratic lines and partly because the NVTD's capacity to service effectively its own operations (which naturally will receive its first priority) is badly strained.

Mission trade schools and to company training of employees were indicated as promising areas for effective assistance in Chapter 2.5. Apart from the services mentioned above, this would require other delivery systems than the NVTD - working through the NGOs connected with the mission schools, and through the companies concerned. SIDA has experience here, from Tanzania and from other countries, which should be used. We have not been able to examine such support fully enough in this Evaluation to recommend specific projects.

9.4.7 Reaching Women and Girls

This is a general SIDA priority. But our findings indicate that in many trades taught by the NVTCs it is not in the interest of training efficiency actively to promote recruitment

of girls.⁶ If there is high drop out, or if training fails to lead to relevant work, there is in the end no equity gain either - only waste of resources. SIDA's operations should recognize this, and rather than exerting influence for recruiting more girls accross the range of trades, it should offer special support to those trades in which girls have a good chance of converting training into a livelihood - the 'soft trades' in NVTD parlance. Trades should be carefully monitored with this objective in mind.

9.4.8 Labour Market Statistics

NVTD needs data on labour market trends. So does Tanzania for wider purposes than the needs of NVTD. Reliable basic statistics are now lacking. SIDA has considerable experience from support to the Bureau of Statistics, both with the Census and the commodity production statistics. It should consider giving assistance outside the NVTD but within the same Ministry, to better labour market statistics and the quick reporting of these, so that training policy can be made more responsive to shifting labour market demands and their spatial distribution.

⁶This should not be taken to mean that we recommend exclusion of girls from these trades.

APPENDIX 1. TERMS OF REFERENCE

EVALUATION OF THE VOCATIONAL TRAINING SECTOR IN TANZANIA AND IN PARTICULAR SWEDISH ASSISTANCE TO THE SECTOR

1. Background

The Vocational Training System used during the colonial times was drastically changed in 1968 when the Trade Schools were converted to Technical Secondary Schools. Vocational Training in its present format was then started as a basic four-year apprenticeship training system with a three-level trades skill testing to decide the level of competence among the apprentices. The system was soon supplemented by a one-year institution based skills training course, and with evening courses for theory lessons during the apprenticeship period.

SIDA, which has supported the programme since 1972/73, has been the longest and by far the most comprehensive supporter to vocational training. A joint *Survey of Vocational Training and Technical Education* in Tanzania was made in 1978 by NVTB, SIDA, DANIDA and GTZ. A report was published the same year. In 1982 a joint NVTB, SIDA and DANIDA team published a *Report on the National Vocational Training System*. Both reports contained a number of recommendations on the improvement of the present system. Although the above mentioned studies have been made, no in-depth study on the impact of foreign aid to vocational training, its consequences and shortcomings has been made. It is also important to evaluate and assess the mode of vocational training provision as this is still a debatable subject in many developing countries today.

2. Objectives

The main objectives of the evaluation are:

- to evaluate and assess the mode of vocational training provision in Tanzania.
- to summarize experiences from cooperation between Tanzania and Sweden during the years 1978-88.
- to summarize experiences from the development of vocational training and make recommendations on future consolidation and expansion of the system, including the possible role of development cooperation.

3. Scope and Focus of the Study

The scope of the evaluation is to study the development and changes in policies for vocational training in Tanzania during the last ten years. Study the policy making process involved in the change and the role of the various actors including the Ministry and SIDA.

Make an assessment of achievements in relation to policies of the vocational training sector, for which the Ministry of Labour and Manpower Development is responsible. Within this framework conduct a more detailed follow-up study of Moshi and Tanga VTCs.

The study shall conclude and recommend on possible development of the sector and especially on future donors support and cooperation.

This study shall especially:

- Identify and describe main trends of employment generation in Tanzania, within the formal and informal sectors over the past ten years in a broad socio-economic perspective.
- Analyze how the vocational training system has been planned and actually changed in response to the needs for training within the country.
- Assess on the basis of existing information and interviews with key persons the work of the system of National Vocational Training Centres paying special attention to conditions affecting implementation and the roles of institutionalized and apprenticeship training.
- Assess the process of development cooperation in the sector. What are the benefits? Are there conflicts among the cooperating parties or other shortcomings which have adversely affected the implementation of the programme?
- Assess Swedish assistance to Vocational training in the light of the general aims and objectives of vocational training. The assessment shall focus on an in-depth study of Moshi VTC to include:
 - a) Project organization
 - b) Project implementation
 - c) Cost analysis
 - d) Internal efficiency and pedagogy/curriculum process
 - e) External efficiency
 - f) Follow-up of trainees at the centre
 - g) Transfer of knowledge/staff development issues
 - h) Extension activities
- A similar in-depth study should also be conducted of Tanga VTC.
- Examine the direct cost of Vocational Training Centres as compared to other types of education and training institutions.
- Discuss the future role of vocational training within a broad framework of present economic and educational policies in Tanzania. Make recommendations as to the focus of continued assistance in this field.

APPENDIX 3. REFERENCES

Apart from the reports written specifically for the Evaluation (in Appendix 2), a main source was the Annual Reviews and Agreed Minutes for Swedish-Tanzanian development cooperation, and the annual reports from NVTD. The references below are mostly international research/writing on vocational training, as discussed in Chapter 1.

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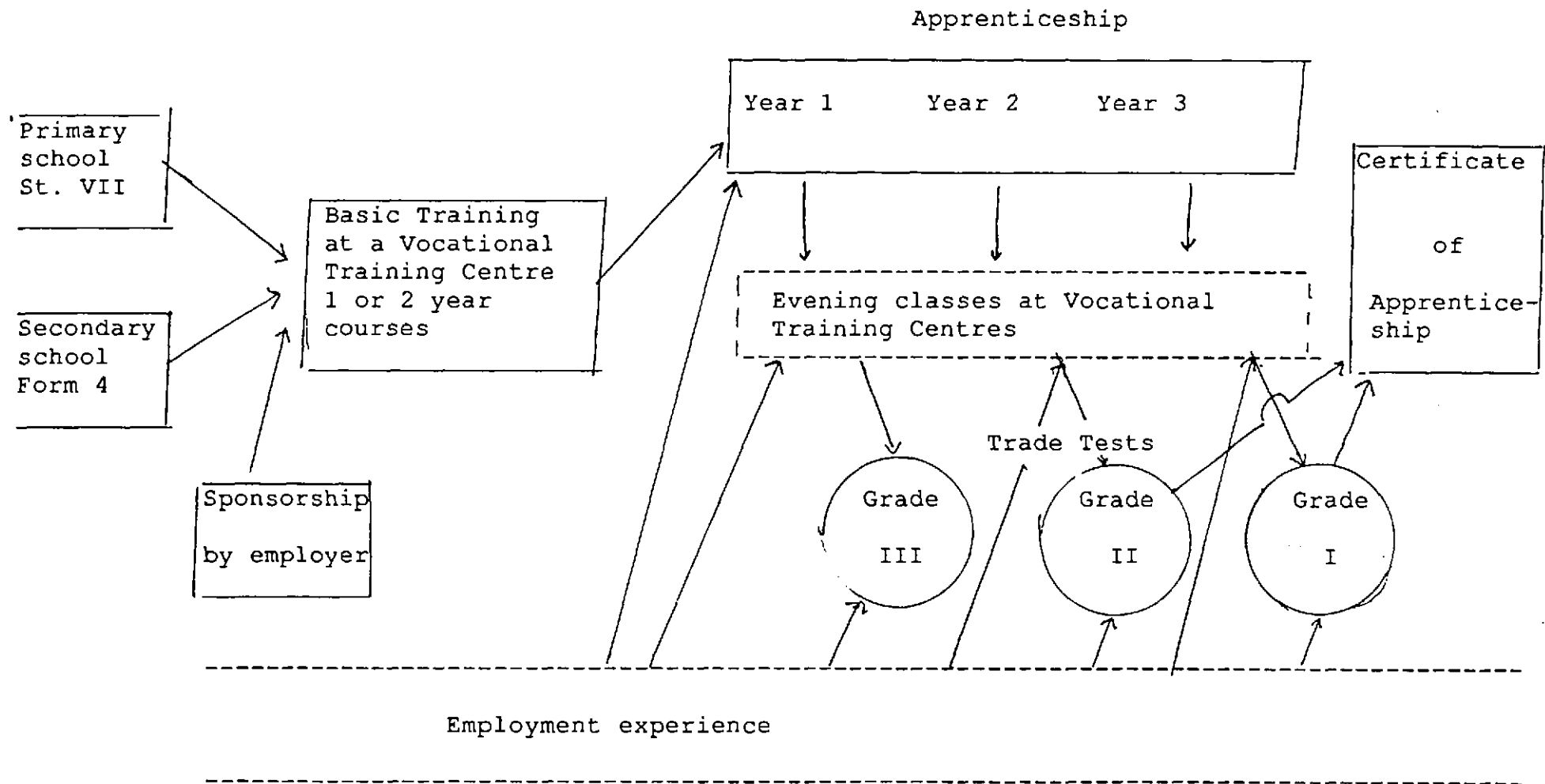
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APPENDIX 4. DIAGRAMME OF THE INTENDED TRAINING SYSTEM



APPENDIX 5. TRADE TEST RESULTS BY TRADE AND GRADE, 1987/88
(from NVTD Annual Report 1987/88)

GRADE THREE

No.	TRADE	Pass	Fail	% Pass	ABS	NULP
1.	M.V. MECHANICS	741	1131	36.5	165	159
2.	AUTO ELECTRICAL	37	45	39.4	19	12
3.	MOTOR DRIVER	35	33	41.2	20	4
4.	PLANT OPERATOR	9	15	36	3	1
5.	PLANT MECHANICS	20	21	46.5	4	2
6.	PANEL BEATING	18	18	50	7	3
7.	MOTOR CYCLE MECHANICS	1	1	33.3	0	1
8.	FITTER MECHANICS	129	157	40.7	34	31
9.	FITTER TURNER	92	180	33.3	40	4
10.	WELDING FABRICATION	165	282	34	59	38
11.	FOUNDRY	19	23	44.2	4	1
12.	BLACKSMITH	16	36	83.6	2	2
13.	OFFICE MACHINE MECHANIC	15	17	42.9	3	3
14.	PATTERN MAKING	3	3	50	0	0
15.	MECHANICAL DRAUGHTING	2	2	50	1	0
16.	INSTRUMENT MECHANICS	3	12	25	2	0
17.	DIESEL ENG. FITTER	35	27	54.7	7	2
18.	CARPENTRY	413	792	33.6	158	26
19.	MASONRY	237	598	27.3	92	32
20.	PLUMBING	140	254	33.7	66	20
21.	PAINTING	69	59	52.3	21	4
22.	SPRAYING	1	1	33.3	0	1
23.	CIVIL DRAUGHTING	22	42	33.3	9	2
24.	ROAD CONSTRUCTION	13	6	81.3	5	3
25.	STEEL FIXING	1	0	50	0	1
26.	CABINET MAKING	13	11	54.2	0	0
27.	PUMP MECHANICS	3	3	50	1	0
28.	Sheet Metal	4	4	50	2	0
29.	FITI TRADES	4	4	50	13	0
30.	SAWYER	3	3	50	3	0
31.	LOGGERS	1	3	33.3	4	0
32.	ELECTRICAL INSTAL.	365	606	35.6	117	55
33.	ARMATURE MOTOR REWINDING	22	29	43.1	6	0
34.	REF. & AIR CONDITION	22	20	50	5	2
35.	RADIO SERVICE	2	2	50	1	0
36.	INDUSTRIAL ELECTRICAL	1	1	50	0	0
37.	ELECTRONICS	2	0	100	2	0
38.	TAILORING	129	404	22.1	30	50
39.	SHOE MAKING	18	13	48.7	1	6
40.	HAND COMPOSING	7	1	63.6	0	4
41.	LABORATORY ASSISTANT	3	5	33.3	1	1
42.	GRAPHIC REPRODUCTION	2	0	100	1	6
43.	LITHOGRAPHIC PRINTING	5	0	62.5	0	3
44.	BOOK BINDING	10	3	66.7	0	2
45.	TEXTILE TECHNOLOGY	31	15	64.6	7	2
T O T A L		2983	4885		1065	425
TOTAL %		35.2	52%	35.4	11.5	5%

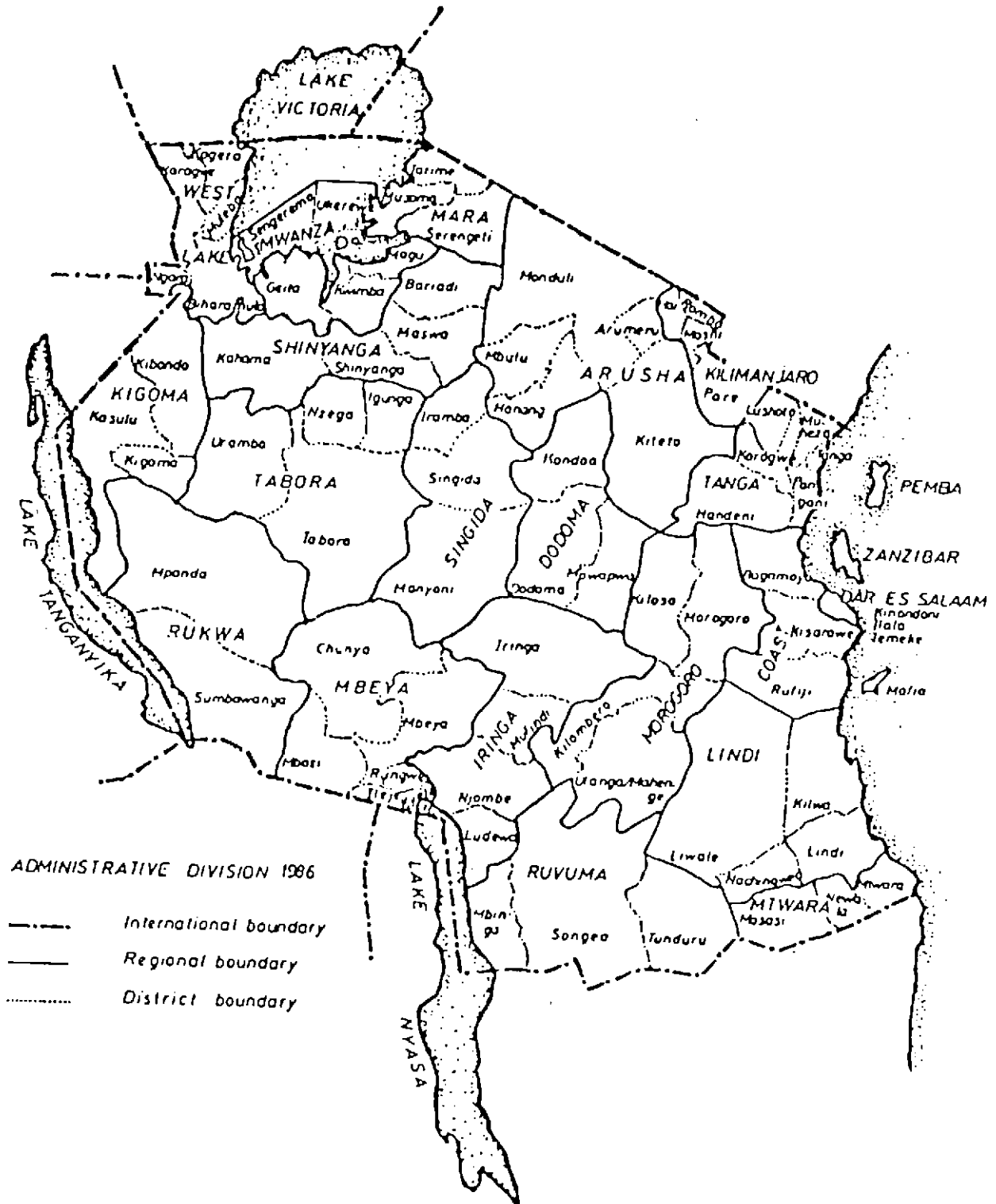
GRADE TWO

NO.	TRADE	PASS	FAIL	%PASS	ABS	NULF
1.	M.V. MECHANICS	231	400	36.6	69	60
2.	AUTO ELECTRICAL	8	27	21.1	2	3
3.	MOTOR DRIVER	18	29	30	5	6
4.	PLANT OPERATOR	6	3	66.7	1	0
5.	PLANT MECHANICS	13	14	48.2	1	0
6.	PANEL BEATING	7	13	33.3	3	1
7.	M/CYCLE MECHANICS	0	1	0	0	1
8.	FITTER TURNER	43	17	32.1	13	14
9.	FITTER MECHANICS	46	73	33.8	16	14
10.	WELDING FABRICATION	62	104	33.5	23	19
11.	FOUNDRY	7	7	46.7	0	1
12.	BLACKSMITH	2	7	22.2	1	0
13.	PATTERN MAKING	3	1	75	0	0
14.	MECHANICAL DRAUGHTING	12	19	38.7	0	0
15.	OFFICE MACHINE MECH.	5	7	71.4	1	0
16.	INSTRUMENT MECHANICS	2	3	66.7	0	0
17.	CARPENTRY/JOINERY	143	162	43.9	47	21
18.	MASONRY	103	142	45.4	55	12
19.	PLUMBING	69	78	43.7	16	11
20.	PAINTING	19	28	38.8	8	2
21.	GRAY PAINTING	2	1	66.7	0	0
22.	SIGNWRITING	0	4	0	0	0
23.	CIVIL DRAUGHTING	19	22	46.3	1	0
24.	ROAD CONSTRUCTION	7	9	43.8	1	0
25.	CABINET MAKING	13	15	46.4	0	0
26.	PUMP MECHANICS	4	2	66.7	0	0
27.	SHOE METAL	1	1	33.3	1	1
28.	ELECTRICIAN	129	280	29	53	35
29.	A/MOTOR REWINDER	17	12	56.7	5	1
30.	REFRIGERATION	15	12	51.7	5	2
31.	RADIO SERVICE	1	1	50	1	0
32.	TAILORING	24	37	33.3	5	11
33.	SHOT MAKING	3	4	25	2	5
34.	LAB. ASSISTANT	17	1	85	0	2
35.	HAND COMPOSING	8	0	50	1	8
36.	LITHOGRAPHIC PRINT	7	2	58.3	0	3
37.	LETTER PRESS PRINT	2	3	33.3	0	1
38.	GRAPHIC REPRODUCTION	2	0	100	1	0
39.	BOOK BINDING	9	2	81.8	0	0
40.	TEXTILE TECHNOLOGY	12	2	44.4	0	9
TOTAL:		1105	1575		345	236

GRADE ONE

No.	TRADE	PASS	FAIL	%PASS	ABS	NULF
1.	M.V. MECHANICS	66	141	29.5	27	17
2.	AUTO ELECTRICAL	4	23	12.1	6	6
3.	MOTOR DRIVER	8	7	44.4	4	3
4.	PLANT OPERATOR	1	1	33.3	1	1
5.	PLANT MECHANICS	0	11	0	0	1
6.	PANEL BEATING	0	3	0	0	0
7.	FILTER TURNER	44	77	33.6	13	10
8.	FILTER MECHANICS	58	47	32.3	15	13
9.	WELDING FABRICATION	37	43	63.7	11	11
10.	FOUNDRY	3	7	25	0	2
11.	BLACK SMITH	2	2	40	0	1
12.	PATTERN MAKING	2	1	50	0	1
13.	MECHANICAL DRAUGHTING	0	6	0	2	1
14.	OFFICE MACHINE MECH.	1	0	50	1	1
15.	CARPENTRY	43	49	39.5	20	9
16.	MASCHERY	48	61	42.5	21	4
17.	PLUMBING	22	39	32.8	6	6
18.	PAINTING	10	10	45.5	0	2
19.	SIGNWRITING	1	0	50	0	1
20.	SPRAYING	1	1	50	0	0
21.	R. CONSTRUCTION	3	1	75	0	0
22.	CABINET MAKING	2	1	66.6	1	0
23.	CIVIL DRAUGHTING	4	4	44.4	3	1
24.	SAFETY	0	1	0	0	0
25.	ELECTRICAL INSTALLATION	57	145	26	39	17
26.	A/MOTOR REWINDING	8	6	47.1	0	3
27.	REF. & AIR CONDITIONING	5	3	55.6	2	1
28.	RADIO SERVICE	1	0	100	0	0
29.	TAILORING	7	18	25	0	3
30.	SHOE MAKING	0	1	0	1	2
31.	HAND COMPOSING	3	0	100	0	0
32.	LABORATORY ASSISTANT	0	1	0	0	2
33.	GRAPHIC REPRODUCTION	4	0	100	0	0
34.	LITHO GRAPHIC	5	2	71.4	0	0
35.	LETTER PRESSES	4	0	100	0	0
36.	BOOK BINDING	9	1	90	0	0
37.	TEXTILE TECHNOLOGY	10	4	71.4	1	0
	TOTAL	473	718		174	128

APPENDIX 6. REGIONS AND DISTRICTS OF TANZANIA¹

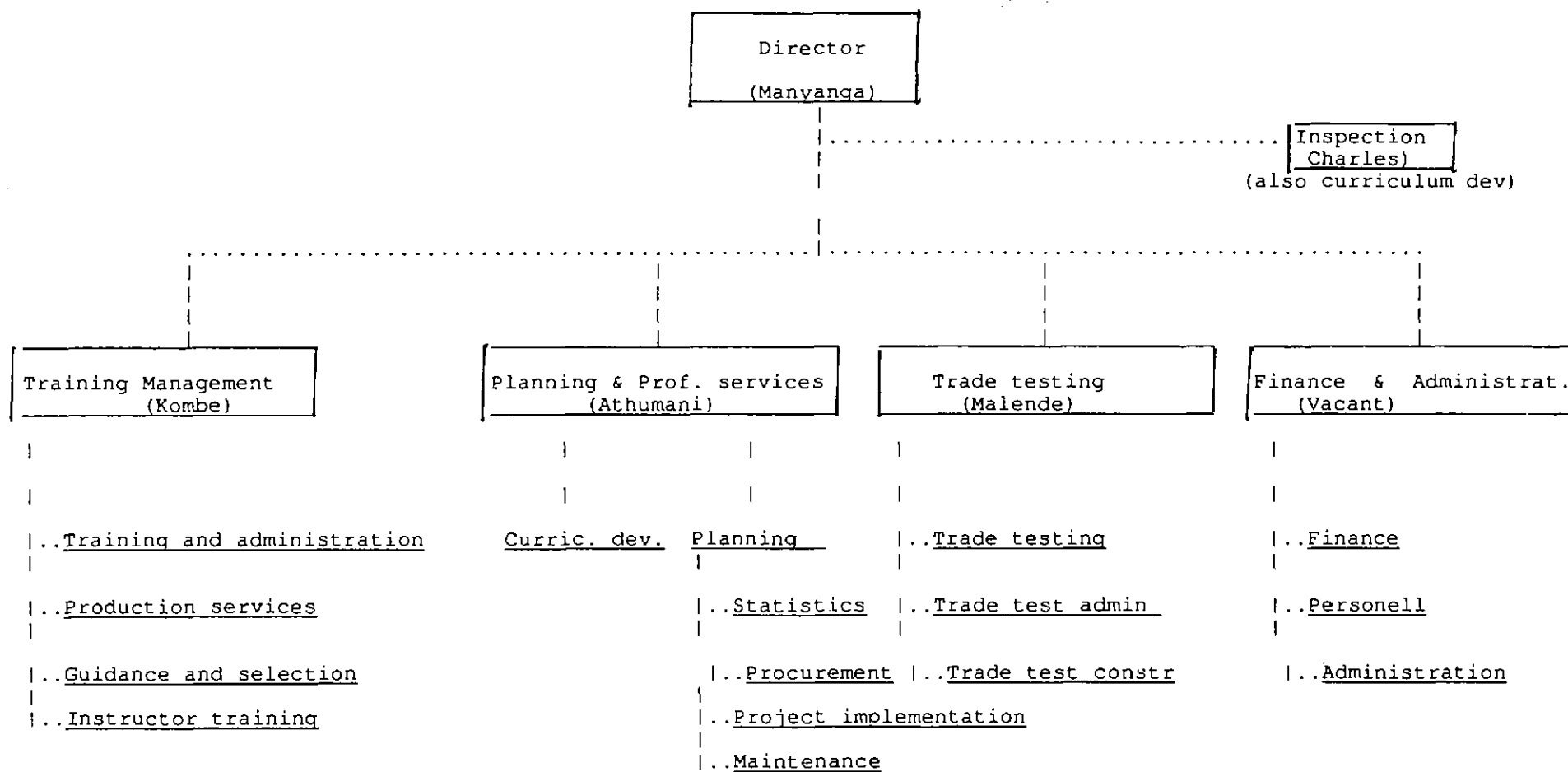


¹Source: K. J. Havnevik, F. Kjørby, R. Meena; and U. Vuorela, *Tanzania. Country Study and Norwegian Aid Review*. Bergen: University of Bergen, Centre for Development Studies, 1988.

APPENDIX 7. LIST OF ABBREVIATIONS AND ACRONYMS

BIS	Basic Industries Strategy
DANIDA	Danish International Development Agency
DES	Dar es Salaam
ERP	Economic Recovery Programme
FDC	Folk Development College
IDA	International Development Agency (World Bank)
ILO	International Labour Organization
IMF	International Monetary Fund
MES	Modules of Employable Skills (an ILO project)
NGO	Non-Government Organization
NVTD	National Vocational Training Division, of the Ministry of Labour, Culture and Social Welfare (before 1989: Labour and Manpower Development)
NVTC	National Vocational Training Centre
PTTC	Post Primary Technical Centre
SIDA	Swedish International Development Authority
SRU	Self Reliance Unit (a unit at an NVTC that sells services or products)
TAP	Technical Assistance Personnel
UNDP	United Nations Development Programme
USAID	United States Aid for International Development
VA	Value Added
VTTC	Vocational Teachers Training Centre (or College)
VTC	Vocational Training Centre

**APPENDIX 8. ORGANOGRAMME OF NATIONAL VOCATIONAL TRAINING DIVISION,
MINISTRY OF LABOUR, CULTURE AND SOCIAL WELFARE**



As per spring 1989. Director and Department Heads indicated by names

APPENDIX 9. CURRENCY EXCHANGE RATES

Selling rates in T. shillings
As at 1. January each budget year

Year	US Dollar	Swedish Krone
1978	7.9586	
1979	8.3140	
1980	8.23784	
1981	9.4069	1.5835
1982	8.3347	1.4686
1983	9.71061	1.3149
1984	12.6157	1.5417
1985	18.2652	2.0204
1986	17.3891	2.04986
1987	51.8663	7.70551
1988	84.1363	14.4154
1989	129.5808	20.6207
1990	about	31.-

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