

9608376

UND

Education Division Documents. No 46.

Vocational and Technical Education and Related Teacher Training in Namibia.



by Mats Hultin Craelius.



September 1989.

Education Division Documents. No 46.

Vocational and Technical Education and Related Teacher Training in Namibia.

by Mats Hultin Craelius.



September 1989.

1. The first part of the document is a list of the names of the members of the committee, which is headed by the Chairman, Mr. J. H. M. van der Meer. The list includes the names of the members of the committee, the names of the members of the committee, and the names of the members of the committee.

2. The second part of the document is a list of the names of the members of the committee, which is headed by the Chairman, Mr. J. H. M. van der Meer. The list includes the names of the members of the committee, the names of the members of the committee, and the names of the members of the committee.

PREFACE

This study on Vocational and Technical Education in Namibia was commissioned by the United Nations Institute for Namibia and SIDA on behalf of the Secretary for Education of SWAPO, Mr Nahas Angula in February 1989.

The study gives a description of Namibian vocational and technical education and its relation to the labour market.

The objective of the study was to make a survey of vocational training and related teacher training in Namibia through visits in the field. On the basis of the findings, the experts were to give recommendations for the development of teacher education in an independent Namibia.

The study, together with other studies on primary and secondary education and of specific school subjects such as English and other languages, Science, Mathematics and Vocational and Technical Training, was presented at a Conference on Teacher Education held at United Nations Institute for Namibia in Lusaka in September 1989. The objective of the conference was to thoroughly examine the teacher training, deployment and teacher professional development in Namibia and to propose strategies for the restructuring of the educational system in Namibia after Independence.

Stockholm, February 1990

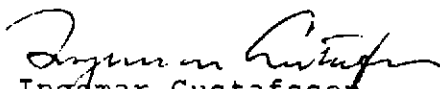

Ingemar Gustafsson
Head, Education Division

TABLE OF CONTENT

	<u>Page</u>
Terms of Reference	1
Methods of Work	1
Background	2
Manpower	3
Formal Secondary Vocational and Technical Education	4
Nonformal Vocational and Technical Education	7
Curricula and Learning Methods	8
Examinations and Tests	9
Physical Facilities and Equipment	11
Staffing and Management	12
Teacher Training	14
Conclusions and Summary	16

ANNEXES

1. List of meetings and visits to educational institutions in Namibia July 17th - August 3rd, 1989
2. Institutions and Persons related to manpower development in Namibia
3. List of vocational and technical schools and institutes at secondary level
4. College of Out of School Training Request for financial support

MAJOR BACKGROUND DOCUMENTS

1. Statistics of Schools 1985 - 1988
2. Manpower survey 1988
3. Career and Work opportunities in Namibia 1986 - 1990
4. Ongediva Training College in postindependent Namibia
5. Fanuel Tjingaete Paper on Education Spending
6. University of Namibia Yearbooks 1-7 1989
7. Rössing Central Training Directory
8. Katutura Career School
9. Namibia "Perspectives for National Reconstruction and Development"
10. Linné-Eriksen: Landanalys Namibia 1988
11. UNDP Rec. Mission to Namibia June 1989
12. Tjitendera: Education Policy for Independent Namibia
13. Nonformal Education in South West Africa/Namibia

VOCATIONAL AND TECHNICAL EDUCATION AND RELATED TEACHER
TRAINING IN NAMIBIA*

TERMS OF REFERENCE

- 1 In terms of reference of July 7th, 1989, regarding studies on teacher training in Namibia including vocational and technical education, it was stated that the following should be done:
 - 1.1 A survey of present vocational and technical education with relatively great attention to questions related to the labor market and the need for unskilled and skilled manpower and for technicians.
 - 1.2 A survey of existing teacher education in vocational and technical subjects.

It was furthermore requested that the findings of the survey should be presented in a paper with subsequent recommendations for vocational and technical education and teacher training. The financial implications of the recommendations should be stated.
- 2 The study should be carried out through an analysis of existing materials and through visits to a number of institutions. A report should be submitted to the U.N. Institute for Namibia (UNIN) no later than September 20th, 1989.
- 3 This paper constitutes the report of the study as requested with some financial implications in Annex.

METHODS OF WORK

- 4 The work in Namibia was proceeded by a study of materials available at SIDA in Stockholm - primarily the UNIN study "Namibia - Perspectives for National Reconstruction and Development". The main work was executed in Namibia through a 3 weeks long stay July 16th - August 3rd, 1989. Annex 1 lists the meetings and visits to various educational institutions and employers and Annex 2 lists various persons of relevance to the work of the mission.

* Vocational and technical education in this paper covers training in all major economic sectors; agriculture, industry including mining, transportation, communication, commerce, office work etc.

- 5 A large amount of discussions with employers, authorities and school and university staff was conducted. The complex administrative system with eleven autonomous education authorities, a considerable amount of training - formal and nonformal - conducted by non governmental organizations and enterprises (NGOs) and the physical size of Namibia - three times that of United Kingdom - with much time spent in cars and aeroplanes, made it difficult to arrive at a fully satisfactory knowledge of the vocational and technical education system and of the current and future labor market in three weeks. A publication by the Rössing foundation "Career and Work opportunities in Namibia 1986-1990" and various documents by the Departments of National Education and of Economic Affairs facilitated, however, the work (see list of Background documents).
- 6 The education statistics 1986-1990 were less useful for a survey of technical and vocational education. The statistics do not cover NGOs or tertiary and adult education. There are unsatisfactory statistics on enrollment ratios, on costs and financing of education, on student flows, on examination results and other data, essential in a country with such a fragmental education system as Namibias. The preface to the booklet on education statistics states that "much of this information is of a confidential nature and may not be published". This is an incomprehensive statement as long as it does not solely refer to the naming of individual students and their performance. The Department of National Education could fortunately provide some of the missing information including education costs and expenditures. The general knowledge of education budgets and expenditures was otherwise low, particularly at the school level.*
- 7 School visits, interviews and discussion meetings were with one exception easily set up with the help of very efficient liaison officers. The visits, interviews and discussions were conducted in a candid, forthcoming and pleasant atmosphere.

BACKGROUND

- 8 Namibia has about 1,5 million inhabitants (estimates vary) of whom Ovambos comprise 49 %, Kavangos 9 %, whites 7 %, hereros 7 %, damaras 7 %, namas 5 %, capravis 4 %, mixed 4 % and other including reXoboths and bushmen 8 %. All whites are literate while the literacy rate for other ethnic groups is estimated at 30 %. The GNP/cap is given as 1100\$ which ranks Namibia among the richest countries in Africa. Of the GNP services and commerce contribute with 69 %, mining with 25 %, agriculture and fishery with 10 % and other industry than mining with

* Some requested information was never obtained.

6%. The income is very unevenly distributed with the white minority dominating commerce, mining and the most profitable part of agronomy (some 5 000 ranch owners with cattle and karakul sheep) while 140 000 African households primarily in the North make a meagre living in subsistence farming. Fishery used to be rich but serious overfishing particularly by South Africa and the Eastern Bloc has depleted the stock.

- 9 For an independent Namibia development of agriculture among the black population, continued mining, restoration of the fishery and establishment of a low cost industry appear to be the highest economic priorities. Vocational and technical education should reflect these priorities.

MANPOWER

- 10 A summary of the most recent manpower survey by the Department of Economic Affairs in 1988 shows

Table 1.

Middle level technicians in engineering and agriculture

	Current stock	Vacancies	Expected increase 1989	1991	1993
Engineering	850	160	90	50	60
Agriculture	400	90	20	30	40

Table 2

Skilled workers in agriculture, in equipment and engine operation and in production and construction

	Current stock	Vacancies	Expected increase 1989	1991	1993
Agriculture	38 400	350	250	150	150
Eq and eng	8 600	530	340	280	220
Production/ construction	18 600	1 050	900	600	600
(of which:					
mining	3 000	60	50	20	10
machinery	3 600	250	170	110	110
electricity	1 650	130	170	120	130
welding,					
plumbing	1 400	110	90	60	70
building,					
construction	4 400	320	240	190	200
others)	4 550	180	180	100	80

- 11 The tables may not reflect possible migration of labor to South Africa in connection with the independence of Namibia but expected increases in skilled manpower are, nevertheless, modest particularly if compared with estimates made by UNIN eleven years ago in 1978. They reflect too low expectations of future economic and social development of Namibia. Some figures do not even appear to reflect replacement of labor because of retirement, death etc. The projections in agriculture do not show the high priority need to develop current primitive farming among some ethnic groups in northern Namibia.
- 12 We are thus not inclined to suggest a development of vocational and technical education on existing manpower estimates. The projections have apparently not been grounded on any economic or social projections reflecting a progressive manpower policy of an independent Namibia.
- 13 Manpower surveys might otherwise be valuable to inform about manpower needs in various sectors of the economy particularly if they reflect effective demands rather than rough estimates. They provide, however, no information about how well the schools and other training institutions meet those needs. Tracer studies are the best means to provide such information. Through interviews with employers and vocational/technical school graduates, whether employed or not, some time after graduation information is collected about the employability of the graduates and about the quality and relevance of their education. This information is then fed back to those concerned in education for appropriate changes in quantity, quality and content of vocational and technical schooling.
- 14 No tracer studies have to our knowledge been conducted in Namibia. Tracer studies could be conducted at reasonable costs in the country given the comparatively small labor market and the few vocational/technical schools. They would form a good basis for both quantitative and qualitative technical/vocational education development.

FORMAL SECONDARY VOCATIONAL AND TECHNICAL EDUCATION

- 15 Namibia has a secondary school system (grades 7-12 or standards 5-10) which offers the students general academic education, diversified comprehensive education and vocational/technical education. Namibia has as already mentioned eleven education systems under their own authorities with different financial allocations per student, different enrollment ratios, drop out and pass rates as well as with different quality and content in facilities, equipment and staff. This is more a serious issue in primary and general secondary education than in the

small vocational/technical education system but has an impact on the intake, enrollment etc of those schools. We assume, however, that one of the first moves of a new government will be to unify education into one single system under one central authority. All discussions in the following are based on this assumption.

- 16 A technically or vocationally inclined Namibian secondary school student may in the current system chose a practical subject or course in a diversified comprehensive school or go to a vocational technical school. The practical subjects/courses in the diversified schools are those to be expected (business economics, electrician, electronics, woodwork, domestic science, agriculture, plumbing, plate metal, motor, fitting and turning, computer, accounting, technical drawing, TV and Radio, typing). The approximate distribution of students among courses was in 1988 in grades 10 and 12 as shown below in table 3.

Table 3

Enrollment in major subject areas in grades 10 and 12 in 1988 by percentage

<u>Subject</u>	<u>Grade 10</u>	<u>Grade 12</u>
Academic	85	85
Agriculture	6	3
Domestic science	2	2
Industries	1	1
Commerce	<u>6</u>	<u>9</u>
Total	100 %	100 %

- 17 The enrollment ratio in senior secondary education is low in Namibia. Available official statistics do not show the ratios but they are said to vary with a factor of ten among ethnic groups. It would be expected that the percentage of students taking academic subjects would be comparatively high and the percentage taking practical subjects low as low enrollment ratios imply over representation of students from higher social economic strata with aspirations for "white collar jobs". But the current percentages of 3-6 % of the students in agricultural streams and 1 % in industrial streams are very low under any circumstances. They cannot possibly correspond to the real needs in Namibias agriculture, industry and mining.
- 18 The low percentages may either reflect insufficient career guidance or a student notion that the practical courses are irrelevant or a lack of facilities or staff. The mission visited a secondary school with a fairly large amount of students in

agriculture which was a completely theoretical subject as the school possessed no land for farming or horticulture. Those students would have been better advised not to take agriculture. If the situation is similar in other diversified secondary schools the low enrollments in practical subjects are understandable and justified. The experience of diversified secondary schools in developing countries is mixed. They are necessary in countries with high upper secondary education enrollment ratios. They make less sense in countries with low ratios as Namibia. The practical subjects in diversified schools have in those countries seldom achieved their objectives and have been very costly. The concerned policy makers in Namibia are advised to acquaint themselves with the research about diversified secondary schools published by the World Bank and other agencies.

19

Experiences of specialized technical vocational schools are more positive, although also they have encountered many problems in less developed countries. These schools are few in Namibia and the statistics are incomplete and contradictory. A recent report list seven schools and 1 155 students. This would imply that only 0,3 % of all students in formal education are enrolled in vocational/technical schools. The percentage would increase to 6 % if we only compare with enrollments in senior secondary education. Statistics should be treated with prudence and comparisons with highly industrialized countries should be made with care but table 4 is, nevertheless, illuminating.

Table 4

Students in vocational/technical education in Sweden and in Namibia

	<u>Sweden</u>	<u>Namibia</u>
Percent of all formal education students	18 %	0,3 %
Percent of senior secondary education students only	70 %	6,0 %

The Namibian figures do not include students taking practical subjects in diversified schools but the Swedish figures include also only students in some type of full technical/vocational education. The figures are therefore largely comparable. The Namibian percentages would if practical subject students in diversified schools were included only increase to 1,1 % and 20 % respectively. The differences in vocational/technical education enrollment are striking also considering that Sweden and Namibia differ in almost every other respect as well.

NONFORMAL VOCATIONAL AND TECHNICAL EDUCATION

- 20 It is fortunate that several industries and private and parastatal organizations conduct vocational/technical training in Namibia often in a nonformal manner. This compensates somewhat for the low enrollment in formal vocational/technical education.
- 21 The major mining companies, the transport and power enterprises, many construction firms organize various types of training for their employees ranging from literacy programs to advanced management courses.* The duration of the courses and training may vary from a few days to a year or more. One company was in fact said to allocate considerably more for human resources development as a percentage of its budget than is generally done by companies in Europe. Such allocations reflect urgent training needs and are expected to give a good rate of return. There is nothing wrong in this expectation as long as the employee himself will also benefit from the training, economically and socially.
- 22 Many economists would claim that training as provided by the employer almost by definition will be more cost effective than most training provided by a school. This would particularly be true for industrial and related training. Agronomy should also be taught closely connected to real production work on a farm. The possible exception to this enterprise related teaching is business and commerce. Formal schools have been found to teach secretarial work, accounting, computer technology, well.
- 23 The conclusion of above discussion in para 22 is, that a future Namibian government should as fully as possible utilize and further develop current system of "in house training" in industry, mining, agriculture, transport etc as found in several enterprises. It might even consider a tax system as found in Latin America which encourages enterprises to jointly set up pre-service and in-service training. A close cooperation should also be established between the formal vocational and technical schools and the agencies and enterprises which conduct non-formal training. There might be exchange of staff, joint discussions of curricula and learning methods and needs, conduct of tracer studies, etc. There would be less need for enterprises and other NGOs to conduct business and commerce education.

* Not covered by the education statistics

CURRICULA AND LEARNING METHODS

- 24 A one-man mission in technical vocational education like ours can not possess the expert knowledge to review more than a few of the curricula of a technical vocational school. Current curricula, syllabi and learning materials are produced in South Africa and reflect South African training needs. They appear as such up to date as would be expected. School authorities have had few opportunities to adjust them to local needs and conditions. One of the first tasks of the future Namibian Ministry of Education will be to review content and relevance of existing curricula, syllabi and learning materials in Namibia and amend them when necessary.
- 25 Several of those interviewed emphasized that the vocational technical schools in Namibia should not only teach particular skills but also pay much attention to management and foreman-supervisory training. Maintenance training was also mentioned. These needs might be real but it should, while teaching management, be realized that management styles are culturally related and management as being taught in European and North American business schools, might be alien to Namibian culture where e.g. decision making might be a joint venture in contrast to the situation in many enterprises in northern countries. It could also be claimed that students in vocational/technical schools are too young for management training. It is, however, nothing which prevents the schools from setting up management and supervision courses on spare time for adults. This might in fact be a way to utilize facilities and staff better.
- 26 Education cum production is a method to improve both teaching and economy of a vocational school. There are some good examples of this in Namibia and those which so far don't do it should follow suit. It means that students in wood work produce furniture for sale, that students in the motor vehicle course work on cars and trucks given to the school for repair or service by their owners, that students in building construction participates in real construction work, that agricultural students produce crops and vegetables for sale etc. The funds which in this way may be gained should remain in the school to be used at the principal's discretion according to rules set by the central authorities. They would primarily be for purchase of consumables and teaching materials. They might also occasionally be used to top up salaries as a staff incentive.
- 27 Education cum production implies also that students under the guidance and supervision of teachers conduct maintenance, construction and other work on their own premises. It is discouraging to see, as sometimes happens, outside contractors do e.g. electrical installations in a school which is supposed to teach electricity.

- 28 It should be underscored that education cum production is not only financially justified but even more so educationally. It teaches the students the standards and qualities required by the open market and by buyers and consumers of goods and services. The school should, however, remain a school and not become a factory!
- 29 Root learning was seen as a serious issue by some teaching staff in Namibia. This is a common problem in many LDCs and in Namibia probably reinforced by the heavy emphasis on examination as will be discussed in the following. We would, nevertheless, be less concerned about this at this stage of technical/vocational education development in Namibia. Other issues are more burning.
- 30 A common observation in vocational/technical schools in many developing countries is that theory classrooms are filled with students and that there is plenty of "chalk and talk" education with the help of the black board. At the same time workshops are underutilized and even empty, where according to the curriculum the students and teachers are supposed to spend most of their time. Many workshops are underutilized in Namibian vocational/technical schools. But this is because of under enrollment rather than because of overemphasis on classroom teaching. Workshops appeared to be in regular use in the schools visited. The Namibian situation compares therefore rather well with the situation in many other African, Asian and Latin American countries.
- 31 It is generally not a custom to single out individual schools as examples in papers of this type, but the mission would, nevertheless, like to mention the vocational training centre in Windhoek run by the Otto Bennis Foundation because of its innovative learning methods, workshop design, enrollment policies etc. It uses an improved ILO modular teaching method and has a healthy attitude against an overemphasis on formalistic examinations. Their centre might in cooperation with the university serve as a research centre and student-teacher auscultation and practice school in the future.

EXAMINATION AND TESTS

- 32 There was a continuous reference to examinations and apprentice tests during the vocational education discussions in Namibia. Official, from the top administered examinations may in some societies and at some time be the best way to arrive at what appears to be a fair, objective and incorrupt assessment of a student's knowledge and skills. But the submission to examinations, certificates and diplomas has gone to an extreme in Namibia and must have become counterproductive. The examinations steal valuable learning time from students and what is worse - support apartheid.

- 33 It is easier and less expensive to construct and execute theoretical tests than practical skill tests. This has often implied that theory has been tested when practical tests should have been used. It has implied that employers may have received workers to their lathes and other machines who are less interested and less suitable for such practical work.
- 34 The testing system of the type applied in Namibia, easily becomes discriminating against particular ethnic groups or against students with a less fortunate socio economic family background. This is so because also tests in practical skills require good knowledge in the language of instruction and in science and mathematics - subject areas where family and ethnic background play important roles - not at least in Namibia with its eleven "nationalities".
- 35 Some vocational schools in Namibia have not been able to fill all available places because of "unsatisfactory" examination results of the applicants. The applicants might have had the right aptitude and attitudes but it has not been possible to accept them because of unsatisfactory performance in mathematics, science or language of instruction. Such situation should not be allowed to occur. Those applicants should be accepted and be given preparatory courses in the relevant subjects and then be allowed to enter the regular courses. A vocational school student place is at least twice as expensive as a place in an academic school. There is therefore essential to ascertain that workshops and laboratories are well utilized and filled with students particularly as the country is short of skilled workers and technicians. The mission visited in fact a workshop in a school with only three students and the instructor - a serious waste of labor and money.
- 36 The mission was also informed that the agricultural school in Ogongwa had recently closed. One reason as given for the closure was lack of qualified applicants. This is again a situation which should not be allowed to occur in a country where the sector which this school was supposed to support is central for the country's economic development.
- 37 It might appear impertinent to recall that major countries in important economic sectors have done away with this type of vocational examinations and apprenticeship systems without any losses in productivity, rather the other way around.
- 38 Standardized tests to analyse the performance of a class, or a school, or a system, but not used to pass or fail an individual student are well justified and should be supported together with aptitude and attitude tests.

- 39 The Namibian Government is thus advised to carefully review and simplify the current examination and apprenticeship system in vocational technical education. It is discriminating and does not guarantee that the employer get the most suitable and able skilled worker and technician.
- 40 Examination pass rates appear low at all levels of education in Namibia. One diversified secondary school reported only 10 % passrates in 1987 and in 1988. The university in Windhoek had only accepted three applicants last year from the North where a large part of the country's population lives. The examination system may have to be reviewed in all parts of the education systems. The vocational technical education system should anyhow become less formalized and examination dominated. A close cooperation is again suggested between the authorities and some centres and training institutions which are already applying a more progressive approach to the assessment of student performance.

PHYSICAL FACILITIES AND EQUIPMENT

- 41 Some 18 education and training institutions were visited by the mission in Namibia. The physical facilities were with few exceptions good by any standards. The equipment in the workshops was also good. Two of the institutions had a considerable amount of personal computers to allow for the teaching of computer technology and dataprocessing. Such teaching is a must also in less developed societies if the gap to the most advanced countries is not to further increase. This touches on a serious dilemma in vocational/technical education. To run a computer, repair a truck, or handle a turning lathe requires the same skill training everywhere but the computer, the truck repair equipment and the lathe are at least ten times as expensive in Namibia as e.g. in Sweden if related to the GNP/capita and available domestic funds.
- 42 Less attention appeared to be given to the science laboratories in some of the schools visited. One school did not use its laboratories because of lack of equipment and materials. Science is an important foundation for the teaching of technical subjects and should be given high priority in a vocational school.
- 43 Some principals mentioned a scarcity of funds for materials and consumables and for maintenance. This is unfortunately a common problem in many countries and often a main reason for the low use of workshops and laboratories and their poor shape. A future Ministry of Education may consider the erection of a special maintenance and spare parts service for the technical/vocational education workshops and laboratories. Such central service would help to keep workshops and laboratories in good working order.

- 44 Experience shows that a traditional day vocational school in an LDC should allocate at least one third of its budget to learning materials, consumables and maintenance to function efficiently.* It is easier in a time of financial constraints to cut that part of the school budget than the salary part. It should not be allowed as such cut is in fact an uneconomic "saving".

45 Students

There was little time available to conduct interviews with vocational/technical education students, although such interviews would have been desirable. The suggested tracer study would include such interviews and meet the need. It could, nevertheless, be said already at this stage, that students in vocational/technical education should be given generous stipends as the private rate of return of such education is comparatively low in Africa. They should also after graduation from school have an opportunity and stimulus to start their own economic activities with the aid of Government sponsored or guaranteed loans. It is a poor economy to train a technician or a skilled worker without giving him or her a good chance to practice the skills in all parts of the labor market (and not only in the Government's service or in big enterprises).

STAFFING AND MANAGEMENT

- 46 The current low use ratios of facilities and staff have been mentioned. The nominal student-staff ratios of 10:1 to 15:1 in workshops and in laboratories and of 30:1 in classroom are, however, educationally and economically acceptable. The necessity to supervise students carefully (if for no other reason so for safety) in workshops and laboratories requires small student groups while classes may be as large as 40 in classrooms without seriously jeopardizing the quality of the teaching. Staff weekly workloads in Namibia are acceptable and appear rather above than below the international average.
- 47 The vocational/technical schools have a fairly large administration (and support) staff. A student:administrative staff ratio of 10:1 was reported in some cases. A major reason would be that many schools work below enrollment capacity. We noticed in this context that a school library was closed because there was no "qualified" librarian. A school library may well be handled by a teacher and does not require a specialist.
- 48 The school principals in Namibia are given insufficient responsibility in the management of their schools. They have little opportunity to influence the budget of their school and know

* Department of National Education budget percentage is 30.

very little of its context. This is not the way it should be if a secondary school is to be economically and efficiently managed. The principal should each year prepare his school budget and after appropriate approval by the higher authorities be in charge of it according to set rules. This implies that he would be in charge of purchase and some other spending for maintenance etc. He should also be allowed to use possible savings under one budget post for spending in other posts to the benefit of the school. The principal should also have a larger say than is now the case in hiring and using school staff, in student intake and enrollment, etc. The increase in the responsibilities of the school principal would increase school efficiency and is a "risk" worth taking. The schools should under any circumstances be exposed to regular audits as in any other enterprise.

- 49 The national school budget has so far not allowed a payment of vocational/technical school teachers which would be comparable with those in the open market. A vocational/technical school teacher was claimed to have a salary of perhaps 1 800 R/month against 3 000 R/month for a comparable job in industry. As a consequence many of the vocational/technical teachers lack the necessary practical industrial experience and many have gone more or less directly from school and teacher training to their teaching assignments. The training centres run by the enterprises are in a better position and use as mentioned their own already employed staff as instructors who thus are well experienced.
- 50 There is no easy solution to this problem. One way has already been indicated; to use education cum production profits to top up salaries. Another way for the school is to cooperate closely with industry and allow instructors to share time between school and enterprises and in this way augment their remunerations. There is also an educational advantage in the latter arrangement. It helps the school keep programs, curricula and equipment up-to-date as there would be staff with a foot in each camp. The provision of inexpensive staff housing is also a way to render the teaching career more attractive.
- 51 A recent study by the Department of National education reports some shortage of technical/vocational teachers. It must, nevertheless, be said that the teacher situation in Namibia's vocational/technical schools is reasonably good in comparison with the situation in most other countries at the same level of development and income. The vocational schools are furthermore few and their enrollment will also in the future be fairly small in absolute numbers. It should therefore be possible to meet an increased teacher demand at a reasonable cost also after an improvement of their conditions.

- 52 The mission will return to a discussion of teacher training for vocational/technical education but will prior to doing so discuss another general managerial arrangement. The link between a vocational/technical school and the employers of its graduates is very important as already emphasized. An efficient way to establish such a linkage is to erect local advisory boards for each school with representatives for the local employers, labor market and possibly trade unions. The advisory boards would meet a few times each year at the school. They would discuss local manpower needs, quality and quantity of intake, enrollment and outputs, curricula, physical facilities, equipment and staffing. They would not necessarily have administrative or managerial power but should convey to the school management their views about the school, the graduates and their employability. Experiences of such advisory boards are positive and they help the school to keep its training relevant.

TEACHER TRAINING

- 53 Official statistics lists as mentioned only seven technical and vocational schools with 1 155 students. The 1988 manpower survey reports 468 vacancies in the total education sector and an increase of 949, 1 697 and 2 035 staff in 1989, 1991 and 1993 respectively. The survey does not identify the need by teacher categories but reports as regards "instructors" nine vacancies and a future need of six, one and four respectively for 1989, 1991 and 1993. If "instructors" refer to all teachers in the vocational/technical schools the estimated needs in an independant Namibia appear too low as was the case for other jobs listed in Tables 1 and 2 in para 10. But it should, nevertheless, as already stated in para 51, be no serious problem to meet the needs. It should therefore be possible to train enough instructors in available post secondary institutions without major new investments.
- 54 The mission visited the faculty of education at the university and the related institutions; Technicon and the College for Out of School Training (Cost) in Windhoek. Their physical facilities are good. Their teacher training includes pedagogy, auscultation and practice teaching. The training is, however, too theoretical and academic. Insufficient time and inputs are given to auscultation and practice teaching. They have, so far no regular and systematic training of teachers for vocational/technical school although apparently for the time being ten student teachers are enrolled at the academy who aspire for jobs as instructors in vocational/technical schools.
- 55 The most suitable institutions for auscultation and practice teaching outside Cost and Technicon for the student teacher in technical vocational education might be the Otto Bennecke Foundation Training Centre, the Rössing training centre in Brakwater and Komasdal, the Katutura Career Development Centre

and the Augustinium Diversified Secondary School, all close to Windhoek. Such auscultation and practice training would be fairly easily organized in addition to what is already being done. We assume that the institutions would be willing to co-operate. The Otto Bennecke Foundation plans to start teacher training under any circumstances.

- 56 It should be emphasized that auscultation and practice teaching for student teachers in vocational/technical education should focus on the instruction in laboratories, workshops and computer rooms. It should, furthermore, be realized that there nowadays exists pedagogical aids particularly developed for workshop teaching, including various types of simulators, computers and data equipment. We make this point as we noticed that several of those we met in Namibia, probably because of the South African isolation were unaware of these trends in workshop training. In fact, a majority of the teaching equipment shown at the most recent world education exhibition (World Didac Singapore May 1989) related to vocational and technical education, a sector which teaching material producers in the past largely neglected. Those in charge of vocational technical teacher training at Cost, Technicon and the cooperating institutions are strongly advised to familiarize themselves with these development, best through visits to forthcoming World Didac exhibits (in Basel, Switzerland, etc) and to vocational technical schools in Japan, USA and Europe. They should thereafter in due course suggest necessary additions in equipment to the workshops which should be used for auscultation and teaching practice at the institutions previously named. Their requests should include information of necessary funding.

- 57 The need to train teachers/instructors for technical vocational schools in Namibia is thus no larger than it may be covered by existing institutions in Windhoek after some expansion and improvements of facilities and staff. There is no need to start new technical/vocational teacher training institutions. The future Ministry of Education should produce regularly 5 years plans about the training need (including teacher for adult nonformal training and the upgrading of current stock of vocational/technical teachers and instructors) and provide the training institutions with necessary funds (capital and recurrent) based on estimates by those institutions. The initial needs would thus include funds for some buildings at Cost and perhaps at Technicon but mainly funds for equipment of the type referred to in para 56. Cost produced, at the request of the mission, an estimate on its needs in facility and funds to improve its training including the training of teachers (Annex 4).

- 58 The structure and duration of vocational/technical school teacher training should be carefully reviewed. It is necessary to keep it within realistic frames. Based on experience in other countries and as general guidelines a teacher in a technical vocational secondary school might have 9 years of general and 3-4 years of technical/vocational education, a university degree in engineering, agriculture etc, 1 year of education training and at least 3-5 years in industry. A workshop instructor might have 9 years of general education, 3-4 years in a vocational school, 5 years industry practice and 1 year of pedagogical training. We feel that those figures form a realistic base for discussions. The tendency to over emphasize the academic/theoretical side of teacher training should be counteracted.

CONCLUSIONS AND SUMMARY

- 59 This paper has discussed a number of issues in vocational and technical education in Namibia, which should be dealt with soonest possible if the desirable technical and economical development of the country is to take place. A UNDP/Unesco mission conducted simultaneously with our UNIN mission an education sector survey presumably also covering parts of technical/vocational education. The full content of their survey is not known to us but we feel confident that their findings will not differ much from ours. We feel thus that the Namibian Government might undertake the following actions based on our observations in vocational/technical education.
- 60 A survey should be undertaken of facilities and equipment in presumable vocational/technical teacher training institutions, in existing vocational/technical schools and in diversified secondary schools offering major vocational/technical subjects. The survey should also identify facility and equipment needs and the necessary funding. This survey should be undertaken by an experienced school building architect and by technical/vocational education experts who should assess the situation in at least 7 major sectors; agriculture, mechanical engineering, electricity/electronics, building construction, mining, fishery and commerce. They should preferably have international experience. Their work should be based on the findings of this and of the UNDP/Unesco mission referred to in para 59.
- 61 A tracer study and a curriculum review of technical/vocational education should be undertaken simultaneously and its findings matched with the findings of the facilities survey. This study should also cover the current examination and apprenticeship system which should be simplified to arrive at a system which is fair to all concerned and does not discriminate ethnically or otherwise. The curriculum review should lead to curricula fully relevant to the needs of an independant Namibia. The vocational/technical education system should in this way become more cost effective and with a high rate of return.

- 62 The number of technical/vocational schools may have to increase and their courses may change as an outcome of above surveys but a first priority should be to fully utilize existing schools. The schools should organize preparatory courses for applicants needing such courses for entrance rather than having under-utilized facilities and staff. Some schools may run in multiple shifts and provide boarding to ascertain maximum use of their expensive facilities.
- 63 Education cum production should be encouraged.
- 64 Particular attention should in the future be paid to maintenance and to funds for materials and consumables and the school principles should be given increased responsibility for those and other aspects of the management at the schools including the budget and its use.
- 65 The training activities run by private, parastatal and public enterprises should be supported and encouraged also in the future. The Latin American type of financial support might be considered. They guarantee relevant and cost effective training and manpower development although they can not meet all societal needs of vocational and technical education. The major responsibility for technical/vocational education rests with the Government.
- 66 The need for training of teachers in vocational and technical education in Namibia is limited and could be handled by the existing institutions in Windhoek (Academy, Technicon, Cost and the training centres as listed in para 55). They may need some additional facilities and equipment and staff upgrading (see e.g. Annex 4). The meeting of those needs as basically identified and prepared in official 5 years plans would constitute suitable projects for bilateral or multilateral. Some projects could be initiated without much delay e.g. study trips to USA, Europe and Japan for teacher trainers, curriculum and facility staff.
- 67 Technical and vocational instructors are underpaid in Namibia if compared with the salaries the same persons would receive in industry. There is no easy solution to this problem but cooperation between schools and enterprises and education cum production could lead to some financial improvements for vocational technical school staff. Vocational and technical student teachers should receive bursaries during their time in training.

- 68 The mission would finally also like to suggest a revision, amendment and improvement of current education statistics in Namibia. The current statistics are incomplete and largely irrelevant to the needs in education evaluation, management and planning.

VISITS AND MEETINGS

- July 17**
Monday
Program discussion with counterparts and liaison offices and mission members (Monica Koep, Len Le Roux, Dick Chamberlain, J L Cunnington, Hugh Africa)
- July 18**
Tuesday
Flight to Owambo and visit to
1. Ungwediva Teacher Training College
 2. Mweshipandeka Diversified Senior Secondary School
 3. Ondangwa Agriculture Centre.
- July 19**
Wednesday
1. Discussion about education in Namibia with representatives of education authorities, colleges and employees (Department of National Education, College for Out of School Training - Cost - Technicon, Rössing Foundation and Otto Bennecke Foundation)
2. University of Namibia - Professor Fanuel Tjingaete
- July 20**
Thursday
1. Private Sector Foundation
2. Transnamibian LTD (National Transport Corporation)
 3. Rehoboth Vocational Training Centre (Technical Industry School) Komasdal, Windhoek.
- July 21**
Friday
1. University of Namibia (Academy)
2. Technicon
 3. College for out of School Training (Cost)
 4. Department of Manpower and Labor
 5. Institute of Management and Leadership training.
- July 22**
Saturday
Otto Bennecke Foundation - Training Centre
- July 23**
Sunday
By car to Swakopmund
- July 24**
Monday
1. Rössing Uranium Plant and Apprentice Training centre
2. Arandis school and training centre

- July 25**
Tuesday
1. Department National Education
 2. Katutura Career Development Centre
 3. Augustinium Diversified Secondary School
 4. Okahandja Div Sen Secondary School
- July 26**
Wednesday
- Herero Okakarara Technical Institute
- July 27**
Thursday
1. SWAWEK (South West Africa Power)
 2. SWE (South West English Ltd)
 3. UNDP/Unesco
- July 28**
Friday
1. Administration for Whites - Higher Technical School Windhoek
 2. Transnib Gamans Training Centre
- July 29**
Saturday
- Rössing Agrigultural Training Centre, Brakwater
- July 30**
Sunday
1. Meeting on Science teaching
 2. Meeting UNIN and UNDP/Unesco mission
- July 31**
Monday
1. Discussions about a major domestic sector review
 2. Briefing and Program discussion on primary and secondary education with mission members
- August 1**
Tuesday
- Flight Oranjemund
CDM Vocational Training Centre
- August 2**
Wednesday
1. Flight Khorixas Braunfels Agricultural School
 2. UNDP discussion
- August 3**
Thursday
1. Discussion CDM
 2. Debriefing of counterparts etc
 3. Academy Faculty of Education
 4. Debriefing Swedish Office

VOCATIONAL TECHNICAL SECONDARY LEVEL SCHOOLS IN NAMIBIA
IN AGRICULTURE AND ENGINEERING

Career dev school, Windhoek

Karibir

Khorixas

Neudam

Okakarara

Otjozundu

Otto Benecke

Ogungo (closed)

Rehoboth Windhoek

Tsumis

Valambolo

CDM centres

Rössing centres

Tsumeb

Eleven secondary schools are furthermore said to offer commercial courses.

Available statistics is contradictory and incomplete. One and the same school may also be named differently depending on the source of information.

The Education Division at SIDA initiates and implements a large number of studies regarding education and training, especially in SIDA's programme countries.

A selection of these studies is published in the series "Education Division Documents". Copies can be ordered from the Scandinavian Institute of African Studies, P O Box 1703, S-751 47 Uppsala, Sweden.

Included in this series:

- No. 1: *) "Education and Training in Sri Lanka" by O. Engquist, L. Jiven, K. Nyström
- No. 2: *) "Education and Training in Botswana 1974-80" by J.O. Agrell, I. Fägerlind, I. Gustafsson
- No. 3: *) "The Indian Non-Formal Education Programme" by O. Österling, J. Persson
- No. 4: *) "Education and Training in Bangladesh" by A. Gorham, J.I. Löfstedt
- No. 5: *) "Education in Guinea-Bissau 1978-81" by R. Carr-Hill, G. Rosengart
- No. 6: *) "Institutional Co-operation between the University of Zambia and the University of Luleå 1976-82" by K. Chitumbo, S. Ray
- No. 7: *) "Mobile Vocational Training Units" by K. Larsson
- No. 8: *) "Technical and vocational Teachers College, Luanshya, Zambia" by O. Eklöf, M. de Beer, J. Fischer, K. Ruuth-Bäcker
- No. 9: *) "Adult Education in Tanzania" by A.I. Johnsson, K. Nyström, R. Sundén
- No. 10: *) "Evaluation of the Activities of the Southern African Team for Employment Promotion (SATEP) by B. Karlström, A. Read
- No. 11: *) "Education in Ethiopia 1974-82" by P. Gumbel, K. Nyström, R. Samuelsson
- No. 12: *) "Education in Zambia. Past Achievements and Future Trends" by I. Fägerlind, J. Valdelin
- No. 13: *) "Non-Formal Training Programmes for Rural Skill-Development" by Alex Gorham. First Published November 1980
- No. 14: *) "The Indian Non-Formal Education Programme". An evaluation by G. Mellbring, O. Österling, J. Persson
- No. 15: *) "Education in Mocambique 1975-84". A review prepared by A. Johnston
- No. 16: *) "Primary Education in Tanzania". A review prepared by R. Carr-Hill
- No. 17: *) "Report on Teaching of Technical and Science Subjects in Sri Lanka" by A. Dock, S. Salomonson
- No. 18: "Swedish Folk Development Education and Developing Countries" by J. Norbeck, F. Albinson, T. Holgersson, R. Sundén
- No. 19: "The Indian Non-Formal Education Programme". A Follow-up/Evaluation and Feasibility Study by O. Österling, G. Mellbring, U. Winblad
- No. 20: "Practical Subjects in Kenyan Academic Secondary Schools". General Report by J. Lauglo
- No. 21: "Practical Subjects in Kenyan Academic Secondary Schools". Tracer Study by A. Närman
- No. 22: "Practical Subjects in Kenyan Academic Secondary Schools". Background Papers by K. Lillis, C. Cumming, M. Davies, Ben Nyaga
- No. 23: "Public Service Training, Needs and Resources in Zimbabwe" by a joint TMB-SIDA mission, N. Maphosa, E. Manuimo, G. Andersson, K-A Larsson, B. Odén
- No. 24: "Human Resources Development in Sri Lanka". An Analysis of Education and Training J.I. Löfstedt, S. Jayweera, A. Little
- No. 25: "Skill Development for Self-Reliance. Regional Project in Eastern and Southern Africa, ILO/SIDA". Evaluation Report by M. Hultin
- No. 26: "Technical Secondary Schools in Kenya". An Assessment by J. Lauglo
- No. 27: "O Desafio da Alfabetização" by A. Lind with a summary in English
- No. 28: "Study on Fishery Training in Angola" by A. Lubbock, S. Larsson
- No. 29: "Zimbabwe Foundation for Education with Production. ZIMFEP" - A follow-up Study by I. Gustafsson
- No. 30: "Educação em Moçambique 1975-84". Uma resenha preparada por A. Johnston
- No. 31: "A Pilot Study of Effects of Primary Schooling in a Rural Community of Ethiopia" by R. Sjöström
- No. 32: "Adult Literacy in the Third World". A review of objectives and strategies by A. Lind, A. Johnston
- No. 33: "Education in Zanzibar" by U. Göransson
- No. 34: "Vocational Education in Developing Countries". A review of studies and project experiences by M. Hultin
- No. 35: "Education in Botswana 1981-86 with Swedish Support". Evaluation and ideas for future support by J. Lauglo, M. PT Marope
- No. 36: "Adult Education in a Village in Tanzania" by A. N. Kweka
- No. 37: "Primary School Textbooks in Tanzania". An Evaluation of their quality by Department of Education, University of Dar es Salaam
- No. 38: "Education and economic crisis - the cases of Mozambique and Zambia" by A. Johnston, H. Kaluba, M. Karlsson, K. Nyström
- No. 39: "Practical Subjects in Kenyan Academic Secondary Schools". Tracer Study II Industrial Education by A. Närman
- No. 40: "Teaching Teachers through Distance Methods". An Evaluation of a Sri Lankan Programme by A. W. Dock, W. A. Duncan, E. M. Kotalawala
- No. 41: "The Development of Competence in three industrial rehabilitation projects in Mozambique" by C. Norrbin, B. Wallberg, L. Wohlgemuth
- No. 42: "O Desenvolvimento de Conhecimentos no Conceito de Empresas Irmãs" by C. Norrbin, B. Wallberg, L. Wohlgemuth
- No. 43: "Swedish Public Administration Assistance in Tanzania" a Study by J. Samoff, M. Wuyts, B. Mothander and K. Flodman
- No. 44: "Supporting Zambian Education in Times of Economic Adversity" by C. McNab, A. Idemalm, I. Fägerlind, B. Mweene, S. Chidumayo
- No. 45: "Teaching and Teacher Training in Namibia: Today and Tomorrow" by S. Callewaert, D. Kallós
- No. 46: "Vocational and Technical Education and Related Teacher Training in Namibia", by M. Hultin Craelius

*) out of stock



Swedish International Development Authority (SIDA)
Education Division
S-105 25 STOCKHOLM

Cover Photo:
Ndahafa Mavulu, Namibia

Tryckt på miljövänligt papper
Produktion Libergraf AB
ALLF 171 0 046
Graphic Systems, Stockholm 1990.