

**Supply of Teaching Aid
to
Mekele College of Dryland
Agriculture
and Natural Resources

Mekele, Ethiopia**

A Report to NORAD

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Ås, November 1994

NORAGRIC
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Acknowledgement

The team wishes to express its sincere gratitude to the leadership and staff of the Mekele College of Dryland Agriculture and Natural Resources (MCDANR), particularly the Dean, the Assistant Dean and the Department Heads for their thoughtful co-operation and assistance. We were received cordially with adequate preparation and planning given the short notice and limited resources they had at their disposal. The task involved detailed work and was time consuming. Thanks to their devotion , we managed to accomplish the terms and conditions set out in the Terms of Reference.

The institutional and private hospitality we enjoyed in Mekele was incredible.

We are also very grateful to a number of individuals and institutions we visited outside the college. They were helpful and provided information and advice to facilitate the conduct of this consultancy.

It is our wish that the recommendations contained in this report would be accepted to meet the urgent needs and priorities. Through this constructive initiative, dedicated by NORAD, we hope that the spirit of partnership between MCDGNR and NORAGRIC will grow to achieve the intended objectives.

1.Executive Summary

As a reflection of the emerging co-operation for development aid between the Government of Norway and the Governments of Ethiopia and Eritrea, respectively, in the field of natural resource management, NORAD, in July 1994 offered assistance in the form of institution strengthening package to MCDANR. This college was assessed as having vital roles and responsibilities in the development of trained manpower required in agriculture especially natural resource management but seriously constrained by lack of educational infrastructure, particularly teaching aid. This was broadly defined to include textbooks, reference books, audio-visual aid, library equipment and facilities, laboratory equipment as well as means of transport to facilitate practical training in the field. The total amount of the grant earmarked for this one shot deal is about NOK 1.5 million.

NORAD awarded a contract to NORAGRIC to implement the provisions of the grant. The specific objective of the consultancy was to produce lists of textbooks, reference books, basic teaching aid and library materials among other things. The details including the conditions of implementation were specified in the Terms of Reference (TOR) as

presented in Annex 8.1. The agreement signed between NORAD and NORAGRIC to this effect is presented as Annex 8.2.

NORAGRIC assigned four of its staff (Liv Ellingsen, Aregay Waktola, Carl Grennes and Henning C. Svads) as team members, the latter to serve as project co-ordinator for the task. As per the agreement implementation of the Project started on 1 August, 1994. The initial tasks involved were:

(a) communication with the colleges to secure facts and figures relevant for the work including syllabi and related background information,

(b) gathering of current catalogues and information materials from potential suppliers of books and equipment,

(c) consultation with NORAGRIC staff and other relevant staff members at the Agricultural University of Norway (AUN).

These were accomplished before the departure of the team members to Ethiopia and Eritrea.

The team spent nearly 5 weeks to accomplish the mission in both countries. The time spent in Mekele was about one week (see Annex 8.3). The team was very impressed by the level of commitment and preparedness of the staff of MCDANR to receive the provisions of the grant. Discussions and selection of options were conducted in an atmosphere of mutual trust and understanding.

Obviously, there were more needs presented by each of the Departments reflecting their precarious situation. These had to be trimmed to comply with the proposed level of assistance. This was done by prioritising the needs at two levels, at College level reflecting needs for common use and at Departmental level, with emphasis on textbooks, reference books and some specialised equipment and materials. The rest were classified as second priority items for possible consideration by NORAD. It must be noted that particular attention was given to the need for strengthening library services as part of the College level needs. Table 1 presents summary of the priorities proposed for immediate purchase and delivery within the time frame of the grant period as well as the estimates for the second priority items. Annex 8.7.1 presents the lists showing the first priority needs while Annex 8.7.3 shows the second priority items.

Table 1: Summary of allocations by priority items

Items	Amount for First Priority Items in NOK	Amount for Second Priority Items in NOK
1. Textbooks	111,560 (313 vols)	
2. Reference books	67,430 (191 vols)	
3. Lib. equipt. & supplies	78,970	80,020
4. TM prep. equipt. & supplies	282,000	
5. Audio-visual aid	207,370	
6. Lab. equipt. & supplies	587,470	2,675,860
7. Farm machinery	none	
8. Transport	294,380	
9. Contingency	71,890	137,794
Total	1,622,440	2,893,675

After having determined the above, the markets in Addis Ababa were explored to ascertain the availability of local suppliers for the items included in the priority lists. With the exception of textbooks and reference books, it was confirmed that these could be supplied locally. A visit to the Addis Ababa University Book Centre also revealed that some textbooks and reference books could be supplied by them. There was no objection to this possibility from the College. For the other items, the team was able to collect proforma invoices from potential suppliers while some others promised to send their quotations to Norway within the shortest possible time.

Regarding long term agreement between MCDANR and the Agricultural University of Norway (AUN)/NORAGRIC it was handled fearly well because the ground work had already been done as a result of reciprocal visits made by the leaders of the two institutions. So, to fulfil the condition laid out in the TOR, the Memorandum of Understanding shown in Annex 8.4 was signed.

The team also took time to visit some concerned institutions in Mekele and Addis Ababa to learn about current educational and technological policies affecting the provision of teaching aid covered under this grant. The institutions were also briefed about the spirit of co-operation and the long term trends reflected through this NORAD initiative. NORAD representative in Addis, NGOs, national and international institutions were also included in the visit to get general impressions about existing conditions as well as possibilities for future collaborations and linkages involving Ethiopian and Norwegian institutions.

2. Introduction

Following a visit made by Dr. Gustav Klem, Head, Natural Resources Division of NORAD, to Ethiopia and Eritrea, NORAD wished to offer assistance to three Colleges of agriculture (two in Ethiopia and one in Eritrea). This initiative was described as a fast and basic institution strengthening package designed to help the colleges to meet their basic needs and to stimulate further long term co-operation with AUN/NORAGRIC. It was understood that the level of development co-operation between the Government of Norway and the Governments of Ethiopia and Eritrea, was expanding especially in the field of natural resources management.

Based on the report and recommendation of Dr. Klem, the grant was specifically earmarked for the provision of teaching aid defined very broadly to include textbooks, reference books, audio-visual aid, equipment for teaching material preparation, laboratory and library equipment and supplies as well as transportation means to facilitate practical training and field experience. This was consistent with the urgent needs of the College. While the direct link between teaching and research was fully realised, the focus of the grant was on improving the quality of teaching through the provision of teaching aid.

The project was conceived as a one time emergency academic aid with the assumption that Norwegian assistance to Ethiopia would soon be upgraded through bilateral agreements in which case long term co-operation and assistance would be eminent.

NORAGRIC was appointed by NORAD as consultant to facilitate the implementation of the project in close co-operation with the college in question. The specific objective of the consultancy was to produce lists of textbooks, reference books and basic teaching aid and select suppliers using prices and other criteria as a basis of selection. The full text of the TOR of the consultancy is given in Annex 8.1.

Already, MCDANR and AUN/NORAGRIC were in the process of creating collaborative links when this opportunity arose. Furthermore, the latter was seeking assistance from NORAD for major long term co-operation. The present grant which amounted to about NOK 1.5 million, was proposed without any prejudice to the outcome of future decisions by NORAD.

The NORAGRIC team consisted of Aregay Waktola (Agriculturist) as team leader, Liv Ellingsen (Librarian) and Henning Svads (Agronomist), the latter to act as project co-ordinator based at the home office of NORAGRIC.

After having made the necessary preparations, as per the NORAD-NORAGRIC agreement, the team travelled to Ethiopia and Eritrea to conduct the detailed field work for a period of nearly five weeks (see Annex 8.3).

Several formal meetings were held with the Dean, the Assistant Deans and Department Heads as well as relevant persons in other government and nongovernment institutions. The latter included the Embassy of Norway in Addis, The Norwegian Church Aid (NCA), Redd Barna-Ethiopia, the Addis Ababa University (AAU) Library; the School of Information Studies for Africa (SISA), the Ethiopian Science and Technology Commission (ESTC); the Institute of Agricultural Research (IAR); and the International Livestock Centre for Africa (ILCA) as well as the Regional Bureaux of Agriculture and Natural Resources in Mekele.

Most of the time and efforts, however, were devoted to activities within MCDANR. These included intensive discussions and observations of college facilities and management. The exchange of views and interactions with Department Heads were more detailed and included visits of classrooms, library, laboratories and field activities. Facts and figures were provided with supportive documents which simplified the work for all concerned. Lists had to be revised several times to comply with the proposed level of assistance. Finally, the priority lists thus prepared were endorsed by the Academic Commission of the College. Those items that are not included in the first priority lists are taken as second priority needs and included in this report.

The remaining portion of this report presents brief accounts of the needs and priorities. A brief introductory background on the College is given to serve as a frame of reference. This is followed by comments on the rationale for the choice of particular categories of items. Annex 8.7.1 presents the first priority needs while Annex 8.7.3 shows the second priority items.

3. General background

Mekele College of Dryland Agriculture and Natural Resources (MCDANR) was started in 1993. In a way it could be considered as an extension of the College of Arid Zone Agriculture at the University of Asmara which was started in 1986/87. Because of the war, the Asmara programmes were moved to different locations in Ethiopia. The agricultural programme was first located in Agarfa Southeast Ethiopia and then moved to Alemaya University of Agriculture where the programme phased out after the students in the pipeline graduated.

After some consideration concerning the need for continued training in dryland agriculture as recommended by a technical Task Force, the Transitional Government of Ethiopia (TGE) decided to establish the College in Mekele, the capital of Tigray Region. It is located about 800 kms. from Addis Ababa in Northeast Ethiopia.

The objective of this College remained almost similar to its predecessor with a focus on arid and semi-arid zones. It is envisaged that this College would grow to a university college with expanded educational and research activities. Students come from all parts of the country as recruited and placed by the Ministry of Education.

In its present form, the College is under the umbrella of the Ministry of Education and the academic programmes are structured into the following Division and Departments:

- (a). Division of Natural and Social Sciences.
- (b). Department of Soil and Water Conservation.
- (c). Department of Crop Science.
- (d). Department of Animal and Range Science
- (e). Continuing Education Programme.

There is a plan to start a Department of Agricultural and Natural Resources Economics.

The Division of Natural and Social Sciences (DNSS) is responsible for the basic courses offered at the Freshman and Sophomore years. Otherwise, all the other Departments offer programmes leading to a Bachelor of Science (BSc) degree with the exception of the Continuing Education Programme which offers a three years diploma programme in Soil and Water Conservation and Computer Literacy for non-regular students. Also periodic inservice training activities are carried out to

extension agents and farmers with the purpose of upgrading their skills and knowledge.

The College has about 350 hectares of land for research and field practicals. The development of laboratory, library and computing facilities are underway. These have to be urgently completed if the present students are to complete the requirements of the degree programmes on time which includes field practical attachments of six months duration.

The total number of the academic staff is 23 which is expected to rise in the coming few years. Table 2 presents the composition of the academic staff by qualification and academic rank.

Table 2: Distribution of the teaching staff and the Library staff by qualification at MCDANR

Dept	Diploma	BSc	MSc	PhD	Total
DNSS*	1	6	3	---	10
S&W Con	---	3	1	1	5
Crop Sc	1	2	3	---	6
Animal & Range Sc	---	1	1	---	2
Library	1	1	---	---	2
Total	3	13	8	1	25

*DNSS = Division of Natural and Social Sciences

During the 1993/94 academic year there were only first year students numbering 45 of which 5 were female. The planned annual intake is 60 to have a total enrolment of about 240 students. Attrition rate account for nearly 30%, reportedly due to the low standards of incoming students as well as the poverty of the teaching facilities.

At the moment, instructional materials are in short supply. Textbooks are literally missing. So are laboratory equipment and transportation facilities. The college has a small poorly equipped library. These aspects are further highlighted in the next section.

4. Teaching aid priorities

The focus was on common needs except for textbooks. The need for a means of transport is considered as an urgent priority followed by the other priority items which are briefly indicated below.

As noted above, priority items identified by the Departments include only textbooks, reference books, and other minor teaching aid listed in Annex 8.7.2. Books for some of the courses as well as models and permanent slides could not be specified for lack of appropriate catalogues. Hence the Academic Commission suggested that the team make appropriate choices in consultation with the staff at the AUN.

5. Comments on major categories of teaching aid

5.1 Textbooks.

Textbooks are the most important needs expressed by the various departments. Following the guidelines of the TOR, a textbook was selected for each course, with one copy for three students.

5.2. Reference books.

Comparatively few titles are selected to supplement the order of books which had already been dispatched through the World Bank. The lists had been checked to avoid unintentional overlap of titles.

5.3 Equipment

5.3.1. *Library and audio-visual centre*

The College has plans to make its library as a centre of information that can be accessed by its community as well as people from and outside the region. The need for strengthening the library with essential facilities and audio-visual materials is given high priority. Our observation and opinion on the overall library situation is as follows.

The present staff of the library, both professional and technical staff, gave a very good impression of being dedicated and hardworking. The Head Librarian is a member of the academic committee, and communication between the College management and the library seem to be close. In order to implement the ambitions of developing into a regional information centre, the staff will however need to be strengthened quantitatively.

Regarding the book collection, it is very limited in numbers, and some of the books received as donations are said to be of less relevance. Through World Bank funds and the present NORAD grant, the book stock will

probably be sufficient to form a basis for a relatively good agricultural library. The existing collections include 2802 volumes obtained through local purchases (1827) and donations (975). Furthermore 8924 library books are ordered using IDA (World Bank) loan.

Networking and exchange of publications is seen as a way of strengthening available information resources. Apart from some newsletters received through networking efforts, there are no current journals' subscriptions.

No tools for cataloguing or indexing are found in the library. Cataloguing is done "freestyle", and preparation for computerisation has been taken into consideration since the start of the library/college. The Head Librarian is a resource person in the College concerning computer issues, and is also familiar with the software package selected for the housekeeping routines. Cataloguing and classification tools (handbooks) are needed as soon as possible.

A PC with CD-ROM drive and appropriate software for cataloguing is seen as essential to handle the big number of books which will enter the library from two major grants (WB and NORAD).

Supply of some stationary for processing books and preparing a card catalogue is needed.

Since the library will be seen as the College's information centre, audiovisuals and some teaching aid were included in the library equipment list.

Binding material and equipment both for preparation of handouts and for book maintenance and repair was also included in the library's list.

The building, though newly constructed, will soon show shortage of a lack of space for collections, possibly reading space will also be too limited as student intake increases.

5.3.2. Laboratory equipment and chemical supplies

At present the College has no laboratory equipment. Through the loan it obtained from the World Bank the College has prepared a list of laboratory equipment and forwarded the same through the Ministry of Education for appropriate purchases. However, taking into account the long bureaucratic procedures involved, the College does not expect these to come before 1996. Laboratory practicals will suffer in the mean time. Therefore, it was decided to use some of the NORAD grant to purchase very essential equipment and chemicals especially needed for the first and second year courses. Emphasis is given to the purchase of basic equipment and chemicals for soil and biology laboratories.

5.3.3. Equipment and supplies for the preparation of teaching material

Most of the textbooks and reference books do not reflect Ethiopian realities besides being expensive. To overcome these limitations, the College encourages its staff members to prepare relevant teaching materials. Items such as duplicating machines, photocopiers, computers, printers, paper, etc. are required.

There was an expressed need for the purchase of PCs and software's for desktop publishing to produce handouts and transparencies.

Heavy duty photocopier supplied with a smaller one for minor copy work, photocopying from books and copying of transparencies was given high priority, as was simple binding equipment. The same material will at a later stage facilitate production of the college's own publications.

Supply of paper, transparencies, pens etc. is also essential.

5.4 Transport

MCDANR attaches significance to practical training conducted on campus as well as in the field. Furthermore, at the end of their third year, students will be attached to various projects of government and nongovernment organisations for one cropping season (six months) to expose them to problems of production systems including soil and water conservation among other things. During this period, students will be supervised by the College staff as well as the collaborating institutions. To accomplish such tasks, the availability of means of transport is a determining factor. The College strongly recommended that the purchase of a bus be given high priority.

6. Other sources of funds for teaching aid

It was reported that the major source of external assistance comes from the World Bank. A number of promising contacts are made by the College but none had materialised at the time of this writing.

7. Institutional agreements

As noted previously, it was easy to draw up a Memorandum of Understanding between MCDANR and NORAGRIC because of the ground work developed earlier. It may be noted here that there is a good relationship between this College and the Relief Society of Tigray (REST) which has been receiving considerable assistance from NORAD through Norwegian NGOs. The Memorandum of Understanding signed between MCDANR and NORAGRIC is attached as Annex 8.4.

8. Annexes

TERMS OF REFERENCE
for
A CONSULTANCY TO SUPPLY TEACHING AIDS
to
**THE MAKALLE COLLEGE OF DRYLAND AGRICULTURE AND
NATURAL RESOURCES**

1. Background

The Governments of Ethiopia and Norway have agreed to cooperate within the field of natural resources management, with an emphasis on strengthening of relevant Ethiopian institutions. One such institution is the Makalle College of Dryland Agriculture and Natural Resources (MCDANR).

MCDANR is most fortunate in having an increasing number of dedicated teachers, and highly motivated students, but the teaching suffers from of a lack of basic textbooks and teaching aids.

MCDANR urgently needs relevant textbooks for its students and the teachers are in equal need of up to date reference books. The teachers further need teaching aids in the form of overhead projectors, slide projectors and demonstration material and proper means of producing handouts. Furthermore, MCDANR needs means of transport in order to carry out field practicals and basic equipment for laboratory and practical classes.

The items to be provided as a result of this consultancy is meant as a fast and basic institution strengthening package. Other support needed by MCDANR may result from cooperation of a more long term nature with a Norwegian institution.

2. Objective

To produce lists of textbooks, reference books and basic teaching aids, and to secure purchase, delivery and facilities for storage and use of such items.

3. Scope of work

In all matters mentioned below it is assumed that the consultant cooperates closely with MCDANR to ascertain MCDANR' priorities. The MCDANR syllabi for the various courses shall form the basis for the work.

- 3.1 Produce prioritized lists of the most relevant textbooks (3-5) for students in each of the two diploma years and for students in each of the four B.Sc. years according to Standards for African Universitits and the UNESCO

Standard. These books are to be purchased in class sets, i.e. one copy per two-three students.

- 3.2 Produce prioritized lists of the most relevant textbooks/reference books (10-15) in each of the subjects taught. These books are meant to serve as the individual teachers "hand library".
- 3.3 List the extra equipment needed by the College Library for proper cataloguing, storage and lending of the above books.
- 3.4 Produce a list of the most urgently required, and relatively simple, equipment and material which will enable the teachers to produce notes and handouts for the students.
- 3.5 Produce lists of an appropriate amount of suitable teaching aids such as overhead projectors and slide projectors with the necessary accessories, including demonstration material in the form of slide series etc.
- 3.6 Produce lists of the most basic equipment missing for proper teaching of laboratory and practical classes.
- 3.7 Present concrete proposals on additional items for the institution strengthening package not indicated above, suitable for quick disbursement and not of the type which may be included in a possible long-term agreement on institutional cooperation.

When making up the lists, due consideration shall be given to possible contributions from other donors.

All lists specified above shall contain exact numbers of each item, purchase costs of each item and freight costs from the supplier to Makalle.

All suggested purchases shall be based on tenders or fixed list prices and preference shall be given to suppliers in Ethiopia, in the Region and outside the Region, in that order, unless the prices delivered Makalle indicate otherwise.

4. Team members, mode of work

- 4.1 The team shall consist of two persons from NORAGRIC/The Agricultural University of Norway, one with teaching experience and a general understanding of agriculture/aquatic science in the tropics and one being a professional librarian with a specialization in tropical agriculture/aquatic science. In addition, NORAGRIC shall draw upon the experiences of a selected group of teachers at the Agricultural University of Norway.

- 4.2 In Makalle, the team shall work in close collaboration with representatives from and appointed by MCDANR. The Dean of MCDANR, the different department Heads and the Chief Librarian of the College are obvious resource persons.
- 4.3 The work shall start in Norway with the team seeking information on the MCDANR syllabi, gathering catalogues and making tentative lists.
- 4.4 At a suitable time after relevant catalogues and tentative lists have been received by MCDANR, the team shall travel to Makalle for detailed discussions with MCDANR. These discussions shall lead to the detailed lists indicated above.
- 4.5 The final lists, with titles, descriptions, prices, names of suppliers and details concerning shipment and necessary arrangements in Makalle, together with a copy of the signed institutional agreement between MCDANR and NORAGRIC (Agricultural University of Norway), shall be presented to NORAD/Oslo not later than four weeks after the team has returned to Norway.
- 4.6 The total cost of the proposed institution strengthening package, excluding the cost of the consultancy, shall not exceed a sum of approximately NOK 1,5 mill.
- 4.7 A precondition for the assistance indicated is that MCDANR enters into an agreement on institutional cooperation with NORAGRIC (The Agricultural University of Norway).
- 4.8 Implementation of purchases and other NORAD financed inputs in relation to this institution strengthening package depends on the final approval of the Royal Norwegian Ministry of Foreign Affairs and will, if approved, be entrusted to NORAGRIC, based on a contract between NORAGRIC and NORAD.

Oslo, 5. juli 1994


Gustav S. Klem

Head

Natural Resources Management Division
Norwegian Agency for Development Cooperation



NORAD

DIREKTORATET FOR
UTVIKLINGSHJELP
NORWEGIAN AGENCY FOR
DEVELOPMENT COOPERATION

Annex 8.2

NORAGRIC
Postboks 5002
1432 ÅS

Deres ref.:
Your ref.:

Vår ref.:
Our ref.:

Dato:
Date:

5. juli 1994

OPPDRAK I ERITREA OG ETIOPIA

Det vises til tidligere kontakter om saken.

Vedlagt følger kopier av brev til tre institusjoner for høyere landbruksutdanning, en i Eritrea og to i Etiopia. Brevene er vedlagt Terms of Reference som i hovedsak er like for alle institusjonene.

NORAD ber NORAGRIC om å påta seg de oppdragene som er skissert i brevene innenfor disse rammene:

1. Hvert av de tre oppdragene, beskrevet i de tre TOR, skal kun starte etter skriftlig anmodning fra vedkommende institusjon.
2. Konsulentgruppen skal bestå av to personer slik som indikert i para 4.1 i TOR. Gruppen, eventuelt forsterket av sekretær/koordinator, skal arbeide tilsammen inntil 150 timer før utreise, gruppen på to skal arbeide inntil 2x25 dager i Etiopia og Eritrea og gruppen, eventuelt igjen med sekretær/koordinator, inntil 100 timer etter hjemkomst. I tillegg tilståes NORAGRIC inntil 150 timer for assistanse fra en prosjektgruppe rundt konsulentgruppen.
3. Hvis ikke alle tre oppdragene blir å gjennomføre, vil nye tidsrammer bli avtalt.

Postadresse/Postal address:
P.B. 8034 Dep., 0030 Oslo, Norway
Kontoradresse/Office address:
Tollbugaten 21, Oslo

Bankgiro/Bank account:
6054 05 03012
Postgiro/Postal account:
0804 5172903

Telefon/Telephone:
+47 22 31 44 00
Telex: 76548 NORAD-N
Telefax: +47 22 31 44 01

4. All honorering og refusjon av utgifter skal skje ifølge samarbeidsavtalen mellom NORAD og NORAGRIC datert februar 1994.

Vennlig hilsen,



Gustav S. Klem
kontorsjef

Kontor for naturressursforvaltning

cc. NORAD/AFR

cc. NORAD/Addis Ababa

8.3. Itinerary

Departed from Oslo/Fornebu on 29 August 1994 at 1700

Arrived at Addis Ababa/Bole on 30 August 1994 at 0915

Travelled to Awassa on 31 August 1994

Returned to Addis Ababa on 6 September 1994

Travelled to Mekele on 12 September 1994 at 1200 noon

Travelled to Asmara from Mekele by road on 18 September

Returned to Addis Ababa from Asmara on 25 September 1994

Liv Ellingsen returned to Norway on 1 October 1994 at 2200

Aregay Waktola returned to Norway on 10 October 1994

MEMORANDUM OF AGREEMENT

The Agricultural University of Norway and Mekele College of Dryland Agriculture and Natural Resources wishing to intensify the existing cooperative relations between the two Institutions, especially to develop the academic and scientific research interchange between the two institutions through mutual assistance in the areas of education, research and publication and others, agree as follows:

PART I

SCOPE OF THE COOPERATION

The areas of cooperation include, subject to mutual consent, any program offered at either Institution as felt desirable and feasible in either side and that both sides will contribute to the fostering and development of the cooperative relationships between the two institutions.

The assistance to be provided by each of the contracting parties will be scientific research, exchange of faculty members, students, etc., as deemed beneficial by the two institutions.

PART II

AREAS OF COOPERATION

Assistance shall be carried out, subject to availability of funds and the approval of the two institutions through such activities or programs as:

1. Exchange of faculty members
2. Exchange of students
3. Joint scientific research
4. Participation in seminars and academic meetings
5. Exchange of academic materials and other information
6. Special short-term academic programs

Memorandum Agreement, P.2.

The terms of such mutual assistance and necessary budget for each program and activity shall be mutually discussed and agreed upon in writing by both parties prior to the initiation of the particular program or activity and such programs and activities shall be negotiated on an annual basis. Each institution will designate a Liaison Officer to develop specific activities or programs.

PART III

EFFECTIVE DATE AND LENGTH OF AGREEMENT

This Memorandum of Agreement will remain in force for a period of five years and any amendment and/or modification of the agreement requires a written approval of the two signatories and shall be appended hereto. After the initial five year period this Memorandum of Agreement may be renewed by mutual consent.

Either party reserves the right to terminate this Memorandum of Agreement upon six (6) months' written notice to the other.

This Memorandum of Agreement shall take effect on the date indicated below:

FOR AGRICULTURAL UNIVERSITY OF
NORWAY

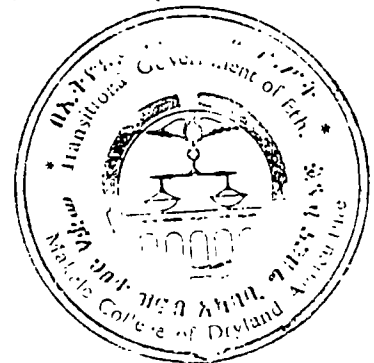
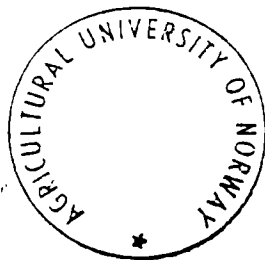
FOR MEKELLE COLLEGE OF
DRYLAND AGRICULTURE AND
NATURAL RESOURCES

Signed: *Fredrik Rasmussen*

Signed: *Wiltiku Hailu* ^{Ph.D.}
Dean

Date: 01-11-94

Date: 7/09/94



8.5 Institutions/persons visited.

School of Information Studies for Africa. Addis Ababa University.
Getachew Birru, Dean

Addis Ababa University Library
Adhana Mengsteab, Chief Librarian

Norwegian Embassy/NORAD representation Norwegian
Embassy/NORAD representation
Knut Kayser, Gudrun Landbø, Inger Dybdahl, Per Amund Gulden

Awassa College of Agriculture (ACA)
Assefa Gebre-Amlak, Dean
Zinabu Gebre-Mariam, Assistant Dean for Academic Affairs
Mogessie Ashenafi, Assistant Dean for Research and Extension
Fekadu Beyene, Dept. of Animal Production and Range Management
Gulilat Dessi, Basic Sciences Dept.
Endalkawach Woldemeskel, Dept. of Plant Production and Dryland
Farming
Befakadu Wolde, Dept. of Agricultural Engineering and Mechanization
Assefach Hailu, Dept. of Home Science and Technology
Woubshet Wakie, Intermediate Library Assistant

Ethiopian Science and Technology Commission (ESTC)
Beyene Kebede, Head of Agricultural Dept.
Mulugeta Libse, Head of Computer Centre
Eshetu Alemu, Head of National Scientific and Technological
Information Centre
Akale Selassie, ESTC Library

International Livestock Centre for Africa (ILCA)
Pramod Kumar Sinha, Head of Information Dept.
Paul J.H. Neate, Head of Publications Dept.

Institute of Agricultural Research (IAR)
Gashaw Kebede, Head of Library and Documentation Section,
Information Services.

Relief Society for Tigray, Addis Ababa (REST)

Norwegian Church Aid
Kjell Solberg, Resident Representative

Hoechst Ethiopia Pvt. Ltd. Co.
Michael Seyoum, General Manager

Mekele College of Dryland Agriculture and Natural Resources
(MCDANR)

Mitiku Haile, Dean

Tilahun Abebe, Assistant Dean

Fassil Kebede, Dept. of Soil and Water Conservation

Mekonnen Yohannes, Dean of Students

Seyoum Gebre-Hiwot, Librarian

Girmay Tesfay, Dept. of Crop Production

Tigray Education Bureau

Teklehaimanot Haileselassie, Head of the Bureau

Relief Society of Tigray (REST)

Solomon Inquai

Tigray Agricultural Bureau

Berhane Hailu

Tigray Region Natural Resources Development and Environmental
Protection Bureau

Belete Tafere, Deputy Head of the Bureau

PC-House Integrated Computer Services, Addis Ababa

Zak A. Salman, Marketing Manager

Munir Abdulahi, Technical Manager

Computer Professionals United (CPU)

Adisu Engda, General Manager

TELCO Pvt. Ltd. Co

Tessema Getahun, Managing Director

Allene Molla, Sales Engineer

The Motor And Engineering Company of Ethiopia Ltd. (MOENCO)

Addis Ababa University

- Book Centre
- Bookbinding Section
- Printing Press

Ethiopian Nutrition Institute

Sherif & Sons Light Industrial Products Importer & Distributor
A.A. Sherif, General Manager

A number of small shops and companies for market information and prices.

8.6. Library Situation

There is very little documentation available on the library situation at the college at present. Since library development is seen as an important part of the institution fabric, the team found a need for giving a description of the situation as well as some general comments based on the team members' opinion which can be of help to further institutional cooperation.

The descriptions are not very detailed, since time did not permit to go in dept, but it is our belief that even a rather superficial description like this will pinpoint some of the areas on which to focus in the future.

8.6.1.1. Staff profile.

Head Librarian (BLSc)

Assistant Librarian (Diploma)

Typist

2 circulation clerks

8.6.1.2. Comments.

We got a very good impression of the library staff as dedicated and hardworking. The Head Librarian holds a position in the Academic Committee of the College, and has been with the college since its very start in the ruins of military camp. Communication between the library and the management of the College seems to be good. However, considering the number of books expected to come to the library through the World Bank and NORAD grants, and the College's ambitions of creating a regional information centre, the present staff will definitely be inadequate in numbers to handle the technical processes.

8.6.2. Collections.

8.6.2.1 Books.

During its first year of existence the library received a total of 2802 volumes of textbooks or reference books, partly as donations, partly as local purchase. 8924 volumes (1169 titles) have been ordered through the World Bank grant, but this order is still out for bids, and there is much uncertainty as to when the books will start arriving. Comparatively few titles will be ordered through the NORAD grant.

8.6.2.2 Journals.

There are no current journals' subscriptions. 127 subscriptions have been ordered under the World Bank grant. Some newsletters etc. start arriving as a result of networking efforts.

8.6.2.3. Other.

The Infoterra database has been donated by UNEP. State of Food and Agriculture Time series (SOFA 93) has also been taken into use. The librarian is consciously on the outlook for other specialized databases which can often be purchased free of charge or at the cost of the diskette only.

8.6.2.4. Comments.

Many of the books in stock seem to be of less relevance to the teaching and research of the college, and mainly serve to fill up shelves while waiting for better times to come. There is a clear consciousness about this fact. Networking with other institutions for exchange of information, will be used as a means to obtain current documentation. The Librarian is in the process of contacting institutions /organisations for free subscriptions and other relevant material.

8.6.3. *Building and furniture.*

8.6.3.1. Description.

The area of the public part of the library is ca. 250 m², divided into three parts : stacks, which cannot be closed off; reading room and a lending section which also holds some reading places. In addition there are several offices, of which one is used as a computer workshop.

At present there are 47 reading places, and slightly more than 200 shelf metres are available, of which ca 1/3 is now filled up.

There are several screens for displays or exhibitions.

A locally made catalogue cabinet did not meet the requirements, and will have to be replaced by the carpenter.

8.6.3.2. Comments.

Like all the buildings, the library is newly renovated and looks clean and neat. The space will soon be deficit to hold collections as well as reading places for students. Some more seats may be squeezed in, but there is very little space for new shelves.

This will soon constitute a major problem, since the books bought for the World Bank grant alone will need ca. 230 shelf metres!

There are no sloping shelves or other means of displaying new journals or other material, except for a tiny section of the counter, big enough to hold 3-4 books.

8.6.4. Working processes.

8.6.4.1. Acquisitions.

As already mentioned there is a clear consciousness of the importance of networking, and we discussed possibilities of obtaining literature from various sources advertised in newsletters etc. The list of books requested through this grant had been cross-checked with the WB-list to avoid overlap. Because of lack of foreign exchange it is difficult to get much experience in practical book selection and dealing with commercial book agents, but the follow up of this project may give some experience and understanding of these processes. Acquisitions are dealt with by the Head Librarian.

8.6.4.2. Cataloguing and indexing.

Cataloguing is done by the assistant librarian, who prepares the basis of the catalogue card as well as an input slip for later entry into database. Full set of catalogue cards are then typed by the typist. However, since the library has no copy of Dewey Decimal Classification, books have not been given call numbers (shelf signatures) and the catalogue cards are kept pending waiting for the DDC to arrive, bought from the NORAD grant.

8.6.4.3. User services/reference work

So far lending has been done by signing loans and returns in a book. A better system including loaners' pockets and book cards is being prepared and will be introduced from the start of the new semester.

There is an acute lack of reference material of any kind.

8.6.4.4. Administration.

Planning, budgeting and other administrative work is done by the Head Librarian. An annual report covering the first year of activity has been worked out as well as a staffing plan. Communication between the library and the college management seem to be open and positive.

8.6.4.5. Opening hours.

Monday-Friday 8-12, 13-17

Saturday 8-12

8.7. Priority lists

(a) Local, regional and international markets

Time constraint prohibited detailed investigation concerning the local markets. From the observations made, the team was able to determine that many of the major items requested by the College can be supplied from Addis Ababa by/through local agents of international companies. This is especially true for transport, computers, photocopiers, overhead and slide projectors with accessories, chemicals, laboratory equipment and many of the consumable such as papers, markers, etc.

These suppliers have assured the team that they are in a position to provide essential services, spare parts and the like to the institutions payable in local currency. This is a very positive development. It will also have a stimulating effect on the growing internal markets. The companies visited gave impression of being serious and well organised. They were able to provide necessary information on availability and prices of commodities of interest to the team.

After the team returned to Norway, telecommunications with Ethiopia were broken down which prevented some of the local suppliers from forwarding their quotations on time. It must be noted that no attempt was made by the team to explore the markets in other cities in the region, e.g. Nairobi for short of time. Furthermore, the college did not report any business contacts there to encourage any extraordinary efforts within this limited time. On the other hand, European and North American markets were sought which responded rather quickly for books, library equipment, and audio-visual teaching aid.

(b) Choice of book suppliers

The lists of books needed by the College were sent for bids to three different book shops: Blackwell's, UK, Buchhandlung Kaiser, Germany, and Wiley Eastern, India. Because of the shortage of time, Wiley Eastern could not come up with a bid in time.

The bids from Blackwell's and Kaiser are not directly comparable, since Blackwell's has left out-of-print titles, whereas Kaiser has allowed an average price of US\$ 30/copy for replacement titles to be ordered by the institutions. The difference in average price/copy is slightly in favour of Blackwell's.

Both book shops are well recognised international book shops and much used and recommended by Norwegian research libraries. Blackwell's has

got long-standing experience in delivering books to customers in developing countries.

The consultancy team suggests that the books are ordered through Blackwell's for the above mentioned reasons.

(c) Logistics and shipment

In spite of the limitations mentioned above, the team managed to get few tenders. Some of these came in the form of pro forma invoices which make the task of purchasing very simple. However, in some cases a selection of items or a reduction in numbers has to be made to match the requests with the available funds.

As far as possible, freight costs have been included in the listed prices. Nevertheless, some smaller companies have no export procedures and as such freight will have to be arranged by the purchasing agent. A lump sum of money is held as contingency to cover unforeseen freight and insurance costs.

For speed as well as safety of arrival, air freight should be preferred. However, it will be necessary to ship by surface heavier items such as bus and books. This would save substantial amount of money for additional purchases. There may be restrictions on commodities like chemicals. Suppliers are very well familiar with such regulations and can arrange for proper dispatch methods.

Qty	Item	Model/Type	Catno.	Value	Price	Total price	Price In NOK	Supplier
BOOKS								
2	Dewey Decimal Classification 20th ed			GBP 145.00		290.00	3 089.65	British Council Addis
2	Anglo-American Cataloguing rules			GBP 60.00		60.00	635.10	British Council Addis
	Freight for the above mentioned titles			GBP		184.50	1 952.93	British Council Addis
	Books according to list			NOK		178 987.00	178 987.00	Blackwells, UK
Total Books							184 644.68	
LIBRARY AND AUDIO VISUALS								
Audiovisual Materiale and Supplies								
1	Microfiche reader/printer with accessories		RP605Z	\$ 6 599.00		6 599.00	42 840.71	Gaylord
1	Over head projector with accessories		800	\$ 669.00		669.00	4 343.15	GTU
1	Video projector		AVP300	\$ 1 995.00		1 995.00	12 951.54	Gaylord
1	VCR (sharp) & head VCR		XA410	\$ 789.00		789.00	5 122.19	GTU
1	TV/VCR Combinations (20")		GRN200AT	\$ 1 549.00		1 549.00	10 056.11	GTU
1	Color monitor receiver(27")		XM-2710	\$ 1 650.00		1 650.00	10 711.80	GTU
2	Electrographia III slide projector		MD200	\$ 299.00		598.00	3 882.22	PC-House
1	Slide viewer and sorter		ET6CL	\$ 205.00		205.00	1 330.86	Gaylord
1	36 mm sound projector		BH7V45-5	\$ 436.00		436.00	9 322.51	Gaylord
1	Electric video screen(46x60-)		HD764AV	\$ 854.00		854.00	5 544.17	Gaylord
5	Cassette player (record player)		TM510	\$ 126.00		630.00	4 089.86	Gaylord
10	Telux headphones		1115-100	\$ 17.70		177.00	1 149.08	Gaylord
5	AVCCO Write-on overhead film (100/-ox)		1115-100	\$ 26.70		133.50	866.68	Gaylord
1	Biologie Cataloging (Software, backtie or LC/MARC							
1	English language database with latest update and user documentation		Not in Gaylord	\$ 2 670.00		2 670.00	17 333.64	Gaylord
1	2XM Double-speed external CD- ROM Drive		TCQ-2XM	\$ 695.00		695.00	4 511.94	GTU
1	CD/CD-ROM rotary storage files		RL5313	\$ 475.00		475.00	3 083.70	Gaylord
40	Acid free continuous catalog cards(Light weight pkg of 1000)		MC5313-P26-30	\$ 22.40		896.00	5 816.83	Gaylord
4	Vinyl catalog guides		5136	\$ 31.95		127.80	829.68	Gaylord
2	Shellist guides (printed with DDC headings) 100 qty least		91.1	\$ 18.25		36.50	236.96	Gaylord
2	Gaylord card sorter		149	\$ 31.95		63.90	414.84	Gaylord
3	3Drawer steel index card files		1935	\$ 59.50		178.50	1 158.82	Gaylord
20	Book spine labels		695	\$ 36.80		736.00	4 778.11	Gaylord
30	Syracuse file (10 1/2x4x7 1/2")		7202	\$ 4.40		132.00	856.94	Gaylord
1	libco punch & bind machine		PB11	\$ 355.00		355.00	2 304.66	Gaylord
	19-Ring binding spines:							
20	-3/4"		PB135	\$ 20.00		400.00	2 596.80	Gaylord
20	-1"		PB140	\$ 11.90		238.00	1 545.10	Gaylord
10	-1.5"		PB145	\$ 17.25		172.50	1 119.87	Gaylord
20	Transparent front cover		PB212	\$ 37.50		750.00	4 869.00	Gaylord
20	Leather grained texture covers		PB200	\$ 21.75		435.00	2 824.02	Gaylord
	Book cloth tape (4th Cois)							
12	-small rolls (3"x5yds)		1148	\$ 4.75		57.00	370.04	Gaylord
5	-large rolls (4'-x15yds)		1153	\$ 16.25		81.25	527.48	Gaylord
12	Scissors			Birr		420.00	444.08	Local
	Cutters							
1	-30" cutting length		1120	\$ 995.00		995.00	6 459.54	Gaylord
2	-18" cutting length		1119	\$ 125.00		250.00	1 623.00	Gaylord
3	-18" Blade		1118	\$ 92.00		276.00	1 791.79	Gaylord
	Heavy duty staplers							
2	-100 sheet capacity		M1001	\$ 44.55		89.10	578.44	Gaylord
1	-260 sheet capacity		M260	\$ 92.70		92.70	601.81	Gaylord
10	-1/4" staples (box of 1000)		23061	\$ 2.85		28.50	1 85.02	Gaylord
10	-1/2" staples		230113	\$ 3.50		35.00	227.22	Gaylord
1	-saddle stitch tapper		2245	\$ 78.00		78.00	506.38	Gaylord
10	Neutral PH white adhesiv (quan)			Birr		700.00	740.13	Local
10	Bookbinders needles		469	\$ 1.55		15.50	100.63	Gaylord
5	Extra long 3(1/2) needles (2/pkg)		774	\$ 2.85		14.25	92.51	Gaylord
2	Book craft manual		1919	\$ 1.75		3.50	22.72	Gaylord

5	Book repair card				773	\$	3 90	19 50		126 58	Gaylord
5	Linen thread (1/3 thick)					Bur	55 00	275 00		290 77	Local
	SUM									181 180.03	
	Slides and Videos										
1	The Locust Slide Kit				SL4	CEP		10 00		105 85	Natural Resources Institute, UK
1	Good storage practice / NRL 1980 (25 minutes video)					CEP		20 00		211 70	CFL Vision (see NRL catalogue)
1	A reference slide collection for soil micromorphology (115 slides)					\$		50 00		324 80	Soil Science Society of America
1	Soil microbiology and biochemistry (143 slides)					\$		45 00		292 14	SSSA
1	Phosphate fertilizer Technology (45 slides)					\$		20 00		129 84	SSSA
1	Building on traditions - conserving land and alleviating poverty (30 min video)					\$		20 00		129 84	IFAD (see Spore no 44)
1	Treasures of Ethiopia (70 minutes video on Ethiopia's genetic heritage)					Austria sch		400 00		247 52	WIL DART, Wilhelm Exner-gasse 23/22, 1090 Vienna
1	Integrated Management of legume pests (30 minutes video)				VCE 001	Fr		225 00		139 23	ICRISAT
1	Participatory research with women farmers (30 minutes video)				VC 002	\$		5 60		1 16	ICRISAT
1	Living with drought (50 minutes video)				VC 005	\$		25 00		162 30	ICRISAT
1	Looking after our land (90 min. video)					CEP		14 95		158 28	OXFAM
	SUM									1 902.43	
	Charts										
1	Spermatogenesis and Oogenesis				ZRF-105-M	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Amoeba				ZRF-175-J	\$	2 40	2 40		15 58	Carolina Biological supplies
1	Marina				ZRF-195-S	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Trypanosomes				ZRF-220-U	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Hydra				ZRF-250-W	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Paramecia				ZRF-304-T	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Taenia Solium				ZRF-360-H	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Mollusc Types				ZRF-395-C	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Earthworm				ZRF-435-N	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Spider				ZRF-475-V	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Orders of Insects				ZRF-482-T	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Types of Insect Mouthparts				ZRF-485-R	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Insect respiratory system				ZRF-510-D	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Incomplete Metamorphosis				ZRF-545-V	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Complete Metamorphosis				ZRF-555-X	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Mosquito				ZRF-565-H	\$	3 84	3 84		24 93	Carolina Biological supplies
1	House Fly				ZRF-570-H	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Honey Bee				ZRF-575-A	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Frog egg Development				ZRF-735-M	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Chick development				ZRF-755-V	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Insect group Hymenoptera				ZRH-132-M	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Frog				ZRH-152-V	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Hen				ZRH-162-X	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Rabbit				ZRH-172-H	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Bacteria				ZRP-100-L	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Plant kingdom phylogenetic tree				ZRP-110-E	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Thallophytes				ZRP-120-U	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Bryophytes				ZRP-130-N	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Phanerozytes				ZRP-140-G	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Puccinia life history				ZRP-270-A	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Moss life history				ZRP-330-U	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Fern life history				ZRP-430-M	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Pine life history				ZRP-470-H	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Monocots and Dicots				ZRP-500-C	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Germination				ZRP-540-U	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Pollination				ZRP-550-N	\$	3 84	3 84		24 93	Carolina Biological supplies
1	Seeds and Fruits				ZRP-552-B	\$	3 84	3 84		24 93	Carolina Biological supplies

1	Seed Dispersal methods	ZRP-554-M	\$	3 84	3 84	24 93	Carolina Biological supplies
1	Grass types	ZRP-560-G	\$	3 84	3 84	24 93	Carolina Biological supplies
1	Dicot stem Anatomy	ZRP-560-P	\$	3 84	3 84	24 93	Carolina Biological supplies
1	Monocot stem Anatomy	ZRP-560-Y	\$	3 84	3 84	24 93	Carolina Biological supplies
1	Dicot root	ZRP-600-R	\$	3 84	3 84	24 93	Carolina Biological supplies
1	Flora anatomy	ZRP-610-K	\$	3 84	3 84	24 93	Carolina Biological supplies
1	Timber Section	ZRT-510-	\$	1 83	1 83	11 68	Carolina Biological supplies
1	Parasitic Plants	ZRP-630-T	\$	3 84	3 84	24 93	Carolina Biological supplies
1	Plant adaptations	ZRP-640-M	\$	3 84	3 84	24 93	Carolina Biological supplies
1	The Leaf	ZRP-715-S	\$	3 58	3 58	23 24	Carolina Biological supplies
1	Flowers	ZRP-725-L	\$	3 58	3 58	23 24	Carolina Biological supplies
1	Fruit Dispersal and Seed germination	ZRP-735-E	\$	3 36	3 36	21 81	Carolina Biological supplies
1	A section of a Leaf	ZRP-920-C	\$	4 32	4 32	28 05	Carolina Biological supplies
1	Freshwater	ZRS-100-E	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Fungi	ZRS-120-N	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Mushroom	ZRS-130-G	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Wheat rust	ZRS-140-W	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Lehen	ZRS-160-Y	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Moss	ZRS-170-B	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Horse-tail	ZRS-180-R	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Male Fern	ZRS-190-K	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Pine	ZRS-200-T	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Maize	ZRS-210-M	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Eye	ZRS-220-F	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Apple	ZRS-240-X	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Mustice	ZRS-290-C	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Pea	ZRS-300-L	\$	15 84	15 84	102 83	Carolina Biological supplies
1	Potato	ZRS-310-E	\$	15 84	15 84	102 83	Carolina Biological supplies
SUM						2 763.19	
Biological Models							
1	Animal cell	ZOS-120	NOK	3 706 00	3 706 00	3 706.00	Haaland & Hamre
1	Worker bee	ZOS-47/1	NOK	3 372 00	3 372 00	3 372.00	Haaland & Hamre
1	Starfish	ZOS-114	NOK	4 173 00	4 173 00	4 173.00	Haaland & Hamre
1	Plant cell	BOS-16/1	NOK	3 969 00	3 969 00	3 969.00	Haaland & Hamre
1	Chloroplast of higher plant	BOS-16/2	NOK	3 367 00	3 367 00	3 367.00	Haaland & Hamre
Overhead transparencies							
1	Plants, set of 12		NOK	960 00	960 00	960.00	Haaland & Hamre
1	Vertebrate animals, set of 12		NOK	1 140 00	1 140 00	1 140.00	Haaland & Hamre
1	Invertebrate animals, set of 12		NOK	840 00	840 00	840.00	Haaland & Hamre
SUM						21 527.00	
Total Library and AUDIO VISUALS						207 372.65	

TEACHING MATERIALS									
2	PhotoCopier with spare parts								
1	Computer for Library	Canon Copier NP-1215							
6	Computer	Gateway 2000	\$	2 395 00	4	790 00		31	096 68 CPU
2	Desktop Publishing software	Gateway 2000	\$	3 245 00	3	245 00		21	066 54 CPU
1	Printers (Dot-matrix)	PageMaker+	\$	2 789 00	16	734 00		108	637 13 CPU
1	Printers (LaserWrite)	Epson LQ 1170	\$	695 00	1	390 00		9	023 88 CPU
1	OH pens (permanent ink: extraline)	HP IV+ Laserjet	\$	749 00	1	498 00		9	725 02 CPU
1	OH pens (water based ink: extraline, fine, broad)		\$	2 245 00	2	245 00		14	574 54 CPU
2	Markers for white board	602001-01 to 601578	\$	11 00	110 00			714	12 Gaybord
5	Markers for white board	617001-01 to 616076	\$	11 00	110 00			714	12 Gaybord
1000	Spk Transparency (heat resistant)		NOK	18 03	360 60			360	60 Android
1000	Spk Photocopy paper		\$	55 00	550 00			3	570 60 PCHouse ICS
15	Spk Continuous paper (Narrow)		Birr	65 00	65 000 00			68	726 38 PCHouse ICS
10	Spk Continuous paper (Wide)		Birr	450 00	6 750 00			7	136 97 PCHouse ICS
	SUM		Birr	450 00	4 500 00			4	757 98 PCHouse ICS
Total Teaching materials									
								280	104.56

LABORATORY AND CHEMICALS								
Laboratory Equipments and glass ware								
1	Vacuum pump	CEP	651.23	651.23		6	893.27	Telco
3	Air pump	CEP	151.23	453.69		4	802.31	Telco
10	reels V-Form Chromatography Paper (reel), 3MM 23cm Wide	CEP	103.20	516.00		5	461.86	Telco
	6pk of 25 TLC plate, type PE Slig	CEP	67.44	404.64		4	283.11	Telco
10	Test tube stands, z-pattern	CEP	4.44	44.40			469.97	Telco
2	pk of 20 Stoppers, rubber, 15x20.5	CEP	1.01	2.02		2	1.38	Telco
2	pk of 20 Stoppers, rubber, 25x28.5	CEP	3.69	7.38		7	8.12	Telco
2	pk of 20 Stoppers, one hole, 13x16	CEP	1.29	2.58		2	27.31	Telco
2	pk of 20 Stoppers, two holes, 15x18	CEP	1.43	2.86		3	27.76	Telco
1.5	Mortar and pestles, porcelain	CEP	6.03	90.45			957.41	Telco
3	Desiccator, borosilicate glass	CEP	23.24	69.72		7	37.99	Telco
10	Tripod stand, 125 side	CEP	3.48	34.80			368.36	Telco
20	Bosshad, alloy with Tommy screws	CEP	2.60	52.00			550.42	Telco
20	Retort clamp, 3-prong	CEP	3.80	76.00			804.46	Telco
20	Retort ring	CEP	2.09	41.80			442.45	Telco
20	Crucible Tonge, bowed, 200mm	CEP	2.30	46.00			486.91	Telco
30	Porcelain crucibles, size 3	CEP	12.00	360.00		3	810.60	Telco
15	Wash bottles, polyethylene	CEP	4.32	64.80			685.91	Telco
2	Dispenser, 0.4 to 2.0 ml	CEP	142.88	285.76		3	024.77	Telco
20	boxes of 100 Filter Paper, Whatman No 3, dia 5.5 cm	CEP	3.69	73.80			781.17	Telco
20	boxes of 100 Filter Paper, Whatman No 3, dia 9 cm	CEP	5.22	104.40		1	105.07	Telco
20	boxes of 100 Filter Paper, Whatman No 3, dia 15 cm	CEP	10.62	212.40		2	248.25	Telco
20	pH Paper reels, pH 1 to 14	CEP	8.82	176.40		1	867.19	Telco
1	Ion/lon meter accessories	CEP	976.40	976.40		10	335.19	Telco
1	Conductivity meter	CEP	535.50	535.50		5	668.27	Telco
2	Temperature probe for conductivity meter	CEP	50.93	101.86		1	078.19	Telco
2	Temperature cells for conductivity meter	CEP	194.00	388.00		4	106.98	Telco
	SUM						61	127.21

Dissecting sets									
10	Dissecting set	GBP	8.78	87.80				828.36	Telco
5	Dissecting dish	GBP	30.36	151.80				1 606.80	Telco
30	Dissecting Needles	GBP	7.35	22.05				233.40	Telco
10	pkts of 5 Dissecting awl	GBP	2.15	21.50				227.58	Telco
SUM								2 977.14	
Surveying (B. From EIE International Aeronautics Catalogue)									
4	Tropical soil color chart	GBP	39.53	158.12				1 673.70	Telco
4	Grey soil chart	GBP	19.77	79.08				837.06	Telco
2	Compass	GBP	133.04	266.08				2 816.46	Telco
2	Altimeter/Barometer	GBP	325.50	651.00				6 880.84	Telco
4	Leveling staff, 5m	GBP	57.00	228.00				2 413.38	Telco
1	Planimeter, 320X50X140mm	GBP	283.50	283.50				3 000.85	Telco
2	Soil sieve set	GBP	48.65	97.30				1 029.92	Telco
1	Soil test kit with accessories	GBP	400.49	400.49				4 239.19	Telco
1	Tensiometer	GBP	160.88	160.88				1 702.91	Telco
1	Soil moisture meter	GBP	589.50	589.50				6 239.86	Telco
SUM								30 844.16	
General Purpose									
15	Universal Bunsen burner	GBP	9.86	149.70				1 584.57	Telco
40	Rubber tubing for EA-0360	GBP	0.69	27.60				292.15	Telco
1	Near UV/Visible spectrophotometer with spare parts	GBP	3 661.88	3 661.88				38 761.00	Telco
2	Water de-ionizer with Cartridge (back of 4)	GBP	239.25	478.50				5 064.92	Telco
1	General purpose oven	GBP	497.48	497.48				5 265.83	Telco
1	Ratidgerated incubator	GBP	3 297.15	3 297.15				34 900.33	Telco
1	Waterbath	GBP	566.10	566.10				5 992.17	Telco
5	Hopflates	GBP	140.25	701.25				7 422.73	Telco
1	Hopflate stirrer with PPFE beads	GBP	223.13	446.26				4 723.66	Telco
1	Dial-O-Gram balance	GBP	140.63	140.63				1 486.57	Telco
1	Digital colorimeter	GBP	855.75	855.75				9 058.11	Telco
SUM								114 554.05	
GLASS WARE									
25	Burettes, 10ml	GBP	10.32	258.00				2 730.93	Telco
15	Burettes, 25ml	GBP	10.74	161.10				1 705.24	Telco
20	Volumetric flasks with stopper, 250ml	GBP	5.81	116.20				1 229.98	Telco
20	Volumetric flasks with stopper, 500ml	GBP	7.56	151.20				1 600.45	Telco
SUM								7 266.60	
G. From Sigma Chemical Co.									
2	Pipette filler, 2ml	GBP	10.20	20.40				215.93	Telco
2	Pipette filler, 10ml	GBP	10.65	21.30				225.46	Telco
2	Pipette filler, 25ml	GBP	11.78	23.56				249.38	Telco
1	Fingipette, adjustable volume, 5-40 micro L	GBP	178.50	178.50				1 889.42	Telco
1	Fingipette, adjustable volume, 40-200 micro L	GBP	178.50	178.50				1 889.42	Telco
1	Fingipette, adjustable volume, 200-1000 micro L	GBP	178.50	178.50				1 889.42	Telco
100	Firmips, 200 micro L	GBP	178.50	178.50				30 961.13	Telco
100	Firmips, 1000 micro L	GBP	29.25	2 925.00				14 691.98	Telco
1	Polypropylene microcentrifuge tubes with attached lids, graduated, 0.65ml	GBP	13.88	1 388.00				377.88	Telco
100	Same, volume 1.7 ml	GBP	35.70	3 570				21 117.08	Telco
100	Same, volume 2.0ml	GBP	19.95	1 995.00				22 863.60	Telco
1	Dialysis tubing (seamless), ave flat width 40mm	GBP	21.60	2 160.00				113.58	Telco
SUM								96 484.29	

10 g Gabberlic acid (GA3)		440474 F	DM	202 40	881 15	Riedel-de Haën
25 g linoole-3-acetic acid GPR		785584 P	DM	250 00	1 088 38	Riedel-de Haën
					39 359,99	
	From Aldrich					
5 kg Stearic acid		17 546-6	DM	124 80	543 32	Riedel-de Haën
2 5 kg Lead (1) acetate		21 590-2	DM	114 60	488 81	Riedel-de Haën
500 gm Phenylhydrazine		P2 625-2	DM	33 00	143 67	Riedel-de Haën
1 kg Glycerol		G 620-1	DM	37 00	161 08	Riedel-de Haën
1 kg O-Tolidine		T3 710-7	DM	19 00	82 72	Riedel-de Haën
1 kg Malic anhydride		M-18-8	DM	13 00	56 60	Riedel-de Haën
1 kg O-Naphthol		13 010-9	DM	58 80	255 99	Riedel-de Haën
100gm Methylorange		11 451-0	DM	44 60	194 17	Riedel-de Haën
6 L Cyclohexane		12 543-1	DM	139 44	607 05	Riedel-de Haën
500 gm Potassium bromide		20 788-3	DM	15 20	66 17	Riedel-de Haën
500 gm Potassium thiocyanate		20 779-9	DM	43 60	189 81	Riedel-de Haën
500 gm Calcium carbonate		31 003-4	DM	28 40	123 64	Riedel-de Haën
400 gm Phosphoric acid		21 511-2	DM	22 60	98 39	Riedel-de Haën
10 L Conc NH3		22 122-8	DM	101 44	441 62	Riedel-de Haën
6x500 gm Iron nitrate		21 682-8	DM	58 56	254 94	Riedel-de Haën
12 L Ethanol		36 290-8	DM	167 52	729 30	Riedel-de Haën
1kg Benzaldehyde		B-133-4	DM	21 80	94 91	Riedel-de Haën
1 kg Zinc mosz		21 548-1	DM	68 80	299 52	Riedel-de Haën
900 gm Copper wire		26 826-7	DM	288 00	1 253 81	Riedel-de Haën
1 kg Copper turnings		26 809-4	DM	81 00	352 63	Riedel-de Haën
1 kg Iron chip		26 794-5	DM	64 00	278 62	Riedel-de Haën
250 gm Magnesium ribbon		36 893-8	DM	156 00	679 15	Riedel-de Haën
500 gm Copper (1) chloride		21 294-6	DM	88 40	384 85	Riedel-de Haën
500 gm Eriochrome Black T		85 839-0	DM	148 56	646 76	Riedel-de Haën
1 kg Calcium hydroxide		23 923-2	DM	30 00	130 61	Riedel-de Haën
100 gm Copper (1) bromide		22 177-5	DM	14 60	63 56	Riedel-de Haën
1 kg Zinc dust		20 998-8	DM	50 60	220 29	Riedel-de Haën
1 kg Sodium citrate		85 578-2	DM	23 40	101 87	Riedel-de Haën
500 gm Dimite phenylhydrazine		019 930-3 2-3	DM	64 60	281 24	Riedel-de Haën
500 g cobaltous chlorid hexahydrate 'Analar'		10082 4 P	DM	291 20	1 267 74	Riedel-de Haën
3 kg calcium chloride anhydrous 12-14 mesh		275884 T	DM	535 20	2 329 99	Riedel-de Haën
5 kg calcium nitrate tetrahyde		103054 J	DM	62 00	269 92	Riedel-de Haën
5 kg magnesium chloride hexahydrate GPR		280944 J	DM	73 60	320 42	Riedel-de Haën
4 kg magnesium nitrate hexahydrate GPR		291064 Y	DM	88 80	386 59	Riedel-de Haën
3 kg magnesium sulphate heptahydrate GPR		291175 X	DM	39 00	169 79	Riedel-de Haën
3 kg potassium chloride GPR		295946 D	DM	52 80	229 88	Riedel-de Haën
4 kg potassium nitrate 'Analar'		102145 H	DM	97 60	424 90	Riedel-de Haën
500 g potassium dihydrogen orthophosphate GPR		296084 J	DM	13 60	59 21	Riedel-de Haën
1 kg di-sodium hydrogen phtophosphate anhydrous		301575 K	DM	37 20	161 95	Riedel-de Haën
4 kg sodium nitrate 'Analar'		102554 U	DM	121 60	529 39	Riedel-de Haën
4 kg sodium sulphate anhyd		30224 T	DM	96 80	421 42	Riedel-de Haën
4 kg ferric chloride anhyd		283794 P	DM	68 80	299 52	Riedel-de Haën
4 kg Bore acid 'Analar'		100584 S	DM	110 40	480 63	Riedel-de Haën
1 kg manganese chloride tetra hydrate GPR		101524 K	DM	55 00	239 44	Riedel-de Haën
1 kg manganese sulphate tetrahydrate GPR		291664 U	DM	37 60	163 69	Riedel-de Haën
1 kg Zinc chloride GPR		306054 K	DM	34 80	151 50	Riedel-de Haën
3 kg Zinc sulphate heptahydrate GPR		306215 J	DM	62 40	271 66	Riedel-de Haën
7 5 L Orthophosphoric acid (85%)		450103 J	DM	232 20	1 010 88	Riedel-de Haën
15 L nitric acid 'Analar'		101687 F	DM	236 64	1 030 21	Riedel-de Haën
5 kg potassium dichromate		102054 F	DM	16 80	73 14	Riedel-de Haën
500 g di-potassium hydrogen orthophosphate GPR		102020 B	DM	493 20	2 147 15	Riedel-de Haën
500 g di-ammonium chloride GPR		287194 X	DM	19 40	84 46	Riedel-de Haën
3 kg Benzoic acid		271495 R	DM	24 80	107 97	Riedel-de Haën
500 gm Copper (II) nitrate		10 947 9	DM	49 20	214 19	Riedel-de Haën
6 kg Acetic anhydride		22 339 5	DM	18 20	79 29	Riedel-de Haën
500 kg Sodium bromide		24 284 5	DM	169 20	736 61	Riedel-de Haën
2 5 kg Sodium borate		22 034 5	DM	15 00	65 30	Riedel-de Haën
4x2 L N hexane		22 133 3	DM	36 00	156 73	Riedel-de Haën
4x2 L Chloroform		24 887 8	DM	208 96	909 71	Riedel-de Haën
4x2 L Ethylacetate		31 998 8	DM	259 20	1 128 43	Riedel-de Haën
		31 990 2	DM	133 12	579 54	Riedel-de Haën

4x2 L Methanol		15,490.3	DM		103.36	449.98	Radel:de Haen	
8 L Petroleum ether		18,451.8	DM		115.20	501.52	Radel:de Haen	
500 gm Ammonium iron (II) sulphate hexahydrate		34,290.4	DM		16.80	73.14	Radel:de Haen	
100 gm Congo red		C 8,445.3	DM		92.40	402.26	Radel:de Haen	
500 gm Dimethylglyoxime		16,257.4	DM		304.00	1,323.46	Radel:de Haen	
1 kg Perchloric acid		3,043.9	DM		62.20	270.79	Radel:de Haen	
8 L Cyclohexane		12,543.1	DM		230.40	1,003.05	Radel:de Haen	
125 gm Sodium lump		28,205.7	DM		28.80	125.38	Radel:de Haen	
100 gm Methyl red		25,019.8	DM		58.00	252.50	Radel:de Haen	
500 gm Bromine (Br 2)		20,788.8	DM		72.80	316.93	Radel:de Haen	
500 gm Chromic acid		23,677.0	DM		84.40	367.44	Radel:de Haen	
8x4 L Hydrochloric acid		25,814.8	DM		244.80	1,065.74	Radel:de Haen	
500 gm Sulfuric acid (fuming)		32,335.1	DM		112.00	487.59	Radel:de Haen	
20 kg Sulfuric acid		25,810.5	DM		200.48	872.79	Radel:de Haen	
500 gm Potassiumferrocyanide		24,402.3	DM		30.40	132.35	Radel:de Haen	
500 gm Potassium chromate		24,661.5	DM		44.00	191.55	Radel:de Haen	
500 gm Ammonium nitrate		22,124.4	DM		16.20	70.53	Radel:de Haen	
100 gm Aluminum (III) chloride		20,691.1	DM		15.40	67.04	Radel:de Haen	
100 gm Agar fine powder		28,285.8	DM		30.40	132.35	Radel:de Haen	
500 gm Ammonium citrate		24,786.1	DM		31.40	136.70	Radel:de Haen	
5 kg Silica gel		28,861.6	DM		150.00	653.03	Radel:de Haen	
100 gm Zinc sulfide		24,462.7	DM		12.40	53.98	Radel:de Haen	
100 gm Cobalt (II) nitrate		23,037.5	DM		46.20	201.13	Radel:de Haen	
SUM						34,887.56		
TOTAL LABORATORY AND CHEMICALS							587,471.86	
TRANSPORTATION								
1 30 seater BUS	Toyota Coaster Standard Roof		NOK	294,380.00	294,380.00	294,380.00	Kear & Kear	
SUM						294,380.00		
TOTAL TRANSPORTATION							294,380.00	
Contingencies 5%							71,889.78	
TOTAL SUM							1,622,440.20	



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Annex 8.7.2

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TO
MEKELE COLLEGE
RYLAND AGRICULTURE AND
NATURAL RESOURCES
ETHIOPIA

CHARGED TO
NORAGRIC
ATTN: LIV ELLINGSEN
MEKELE COLLECTION
P.O. BOX 5002
N-5002
NORWAY

INVOICE NO
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	N. KR	£
Mekele College		
expenses to cover books according to attached list for Mekele College of Dryland Agriculture and Natural Resources, freight costs included.		
Gross Value of Quote	18523.00	16882.28
Minus Discount (10%) of Gross Value	18452.30	1688.22
Plus Airfreight (7%) of Gross Value	12916.61	1181.76
NET QUOTE VALUE (Incls discount & airfreight)	178987.31	16375.82

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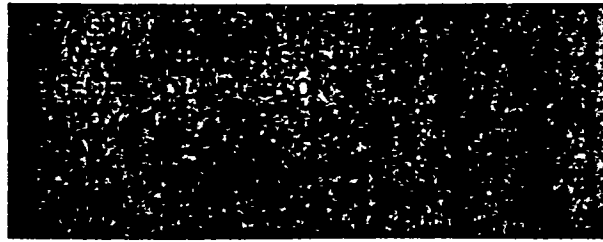
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						N.KR	£
01	01				11-Oct-1994		
		Chapman, J. I.	Ecology: principles and applications	PBK			
		0521389518		15 @	£ 16.50	2705.25	247.50
02	01				11-Oct-1994		
		Colinvaux, Paul	Ecology 2	HRK			
		0471558605		10 @	£ 19.95	2180.50	199.50
03	01				11-Oct-1994		
		Gettys, W.Edward	Physics: Classical and Modern	-			
		2 ed., Internatl.		PBK			
		0071126740		10 @	£ 19.95	2180.50	199.50
04	01				11-Oct-1994		
		Kent, M.	Vegetation Description and Analysis	A			
		Practical Approa		PBK			
		0471948101		5 @	£ 24.95	1363.50	124.75
05	01				11-Oct-1994		
		Silvertown, Jonathan W	Introduction to plant population biology	Jonathan W. Silvertown - 3 ed.	PBK		
		0532029730		3 @	£ 17.50	573.84	52.50
06	02				11-Oct-1994		
		Chemistry: principles and applications		PBK			
		0582355907		10 @	£ 22.99	2512.80	229.90
07	02				11-Oct-1994		
		Principles of biochemistry		PBK			
		0130636653		10 @	£ 24.95	2727.00	249.50
					11-Oct-1994		
		Carey, Francis A.	Organic Chemistry	- 2 ed.	PRK		
		0071125639		10 @	£ 21.95	2399.10	219.50
						C'FWD	
						16642.49	1522.65

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B'FWD NO OF ITEMS 73		16642.49	1522.65
09 02	11-Oct-1994		
Fisher, Ronald Aylmer	Statistical methods, experimental design and scientific PRK		
0198522290	10 @ £ 35.00	3825.50	350.00
10 02	11-Oct-1994		
Frank, Harry	Statistics: Concepts and Applications HBK		
052144554X	10 @ £ 29.95	3273.50	299.50
11 02	11-Oct-1994		
Freund, John Ernst	Elementary business statistics - 6th. ed PBK		
0132598213	5 @ £ 22.95	1254.20	114.75
12 02	11-Oct-1994		
March, Jerry	Advanced Organic Chemistry - 4 ed. PBK		
0471581488	5 @ £ 24.95	818.10	74.85
13 02	11-Oct-1994		
Russell, John Blair	General chemistry - 2nd ed PBK		
0071127879	15 @ £ 19.95	3270.75	299.25
14 03	11-Oct-1994		
Colman, David	Principles of agricultural economics PBK (Wyd. studies in agriculture)		
051335643	10 @ £ 15.95	1743.30	159.50
	11-Oct-1994		
Gomez, Kwanchai A.	Statistical Procedures for Agricultural Research - 2 ed., Internatl. PBK		
0471873312	5 @ £ 21.95	1199.55	109.75
C'FWD		32027.39	2930.25

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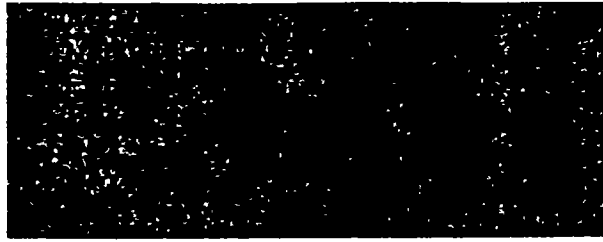
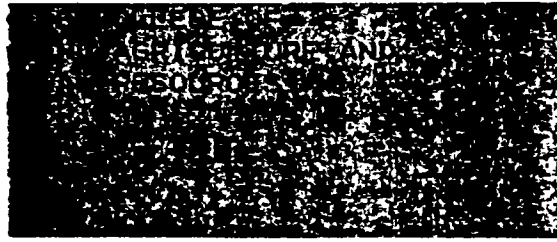
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				N.KR	£
	R'FWD NO OF ITEMS	131		32027.39	2930.25
16	03		11-Oct-1994		
	Halliday, David	Modern physics chapters for			
	Physics, third edition	PRK			
	0471853550	5 @	£ 5.95	325.15	29.75
17	03		11-Oct-1994		
	Lutgens, Frederick K.	The Atmosphere: Introduction			
	to Meteorology - 5 ed.	HRK			
	0130514756	10 @	£ 52.45	5732.80	524.50
18	04		11-Oct-1994		
	Agroforestry: Classification and Management				
	0471837814	10 @	£ 59.00	6448.70	590.00
19	04		11-Oct-1994		
	Cutter, Susan L.	Exploitation, conservation,			
	preservation: a geographic perspective - 2nd ed.	HRK			
	0471500771	4 @	£ 45.95	2008.92	183.80
20	04		11-Oct-1994		
	Ellis, Frank	Agricultural policies in developing			
	countries	PRK			
	0521335844	4 @	£ 15.95	697.32	63.80
21	04		11-Oct-1994		
	Matthews, John D.	Silvicultural Systems	PRK		
	019854650X	3 @	£ 17.50	573.84	52.50
22	04		11-Oct-1994		
	An introduction to agroforestry	PRK		
	019721359	5 @	£ 36.50	1994.75	182.50
		C'FWD		49808.87	4557.10

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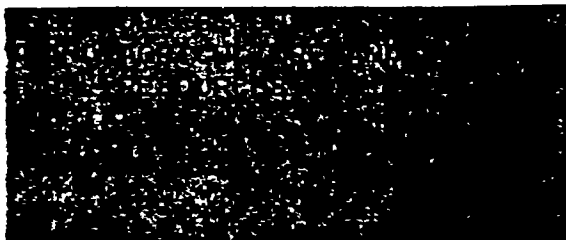
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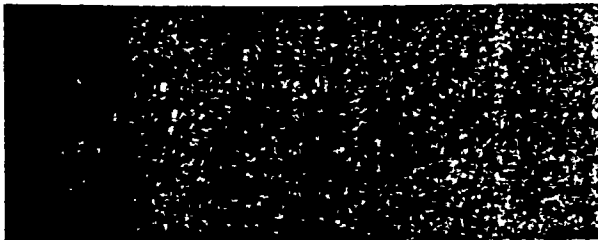
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				N.KR	£
B'FWD NO OF ITEMS 172				49808.87	4557.10
23	04		11-Oct-1994		
		Shepherd, Kenneth Ronald	Plantation silviculture		
		(Forestry sciences)			
		9024733790	5 @ £ 70.75	3866.50	353.75
24	05		11-Oct-1994		
		Rullock, P.	Soil Microbiology - v. 1: Techniqu		
		HBK			
		0907360068	10 @ £ 86.50	9454.50	865.00
25	05		11-Oct-1994		
		Buol, S.W.	Soil genesis and classification - 3rd		
		edition HBK			
		0813314626	10 @ £ 31.70	3467.00	317.20
26	05		11-Oct-1994		
		Food & Agriculture Org.	Soil and Water		
		Conservation in Semi-arid Areas	Publication 40 Soils		
		Bulletin)			
		9251026068	3 @ £ 10.00	327.90	30.00
27	05		11-Oct-1994		
		Foth, Henry Donald	Fundamentals of soil science -		
		8th ed PBK			
		0471529958	10 @ £ 16.95	1852.60	169.50
28	05		11-Oct-1994		
		Morgan, Rowston Philip Charles	Soil erosion and		
		conservation - Rev. and enl. ed.	PBK		
		52301580	3 @ £ 16.99	557.10	50.97
29	05		11-Oct-1994		
		Schwab, Glenn O.	Soil and Water Conservation		
		Engineering - 4th international	PBK		
		0471599948	6 @ £ 16.95	1111.56	101.70
C'FWD				70446.03	6445.22

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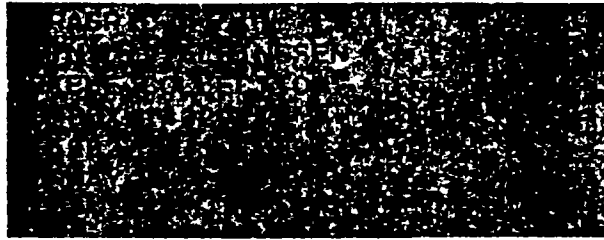
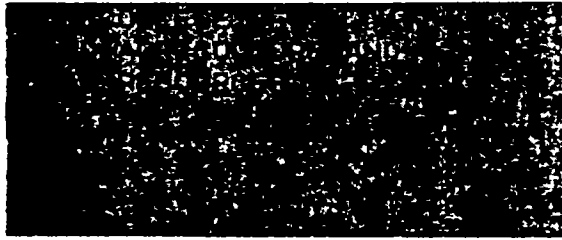
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				N.KR	£
B'FWD NO OF ITEMS 219				70446.03	6445.22
30	05		11-Oct-1994		
		Tisdale, Samuel L. Soil Fertility and Fertilizers - 4 ed. PRK 0029467608	10 @ £ 17.95	1961.90	179.50
31	06		11-Oct-1994		
		Gerrard, John Soil Geomorphology: An Integration of Pedology and Geomor PBK 0412441802	5 @ £ 17.99	983.15	89.95
32	06		11-Oct-1994		
		Lutgens, Frederick K. The Earth: Introduction to Physical Geology - 2 ed. HBK 0675206987	4 @ £ 16.95	741.04	67.80
33	06		11-Oct-1994		
		McRae, Stuart G. Practical Pedology: Studying Soils in the Field HBK 0853129185	£ 35.00	1147.65	105.00
34	06		11-Oct-1994		
		Monroe, James S. Physical Geology HRK 0314921958	10 @ £ 19.00	2076.70	190.00
35	06		11-Oct-1994		
		Tan, Kim H. Principles of Soil Chemistry - 2 ed. HBK (Books in Soils, Plants & t) 082478928X	5 @ £ 45.14	2466.90	225.70
36	06		11-Oct-1994		
		Forster, A (Arthur) Surveying - 6th ed - 6th edition PBK 0582076889	5 @ £ 18.99	1037.80	94.95
C'FWD				80861.17	7398.12

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				N.KR	£
B'FWD NO OF ITEMS		261		80861.17	7398.12
37	07		11-Oct-1994		
Campbell, J.B. Introduction to Remote Sensing HBK					
0298627761	3 @		£ 19.95	654.15	59.85
38	07		11-Oct-1994		
Dent, David Soil survey & land evaluation PRK					
0419159606	3 @		£ 18.50	606.63	55.50
39	07		11-Oct-1994		
Lillesand, Thomas Martin Remote Sensing and Image Interpretation - 3 ed., Internatl. PRK					
0471305758	5 @		£ 19.95	1090.25	99.75
40	07		11-Oct-1994		
Rabenhorst, Thomas Applied Cartography 5th ed. PRK					
0675205336	3 @		£ 15.95	522.99	47.85
41	07		11-Oct-1994		
Todd, David Keith Groundwater Hydrology - 2 ed., Internatl. PRK					
047108641X	5 @		£ 24.95	1363.50	124.75
42	08		11-Oct-1994		
Dairy-cattle production PRK					
0444426809	3 @		£ 131.02	4296.15	393.06
43	08		11-Oct-1994		
Battlett, Andrew Dairy Goat Production PRK					
1040013	3 @		£ 9.95	326.25	29.85
44	08		11-Oct-1994		
Farr, Eric Land drainage PRK (Longman handbooks in agri)					
0582450071	3 @		£ 13.99	458.73	41.97
C'FWD				90179.82	8250.70

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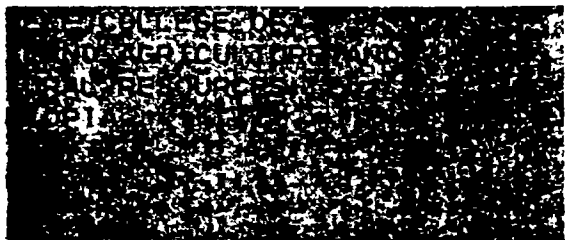
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				N.KR	£
B'FWD NO OF ITEMS		289		90179.82	8250.70
45 08			11-Oct-1994		
Madsen, David A.	Engineering Drawing and Design:				
AutoCAD Workbook PRK					
0827347472	5 @	£ 11.50		628.50	57.50
46 08			11-Oct-1994		
Rhodes, Roland Swetnam	Basic Engineering Drawing				
- 2 ed. PBK					
0582065941	5 @	£ 11.99		655.25	59.95
47 08			11-Oct-1994		
Schmidt, Peter Jonathon	Reef cattle production				
2nd ed.					
0409491608	3 @	£ 40.00		1311.60	120.00
48 08			11-Oct-1994		
Sharma, R.K.	Textbook of Irrigation Engineering -				
v. 1: Irrigati PBK					
8120405080		£ 14.95		817.00	74.75
49 08			11-Oct-1994		
Williamson, G	An Introduction to animal husbandry				
in the tropics - 4th ed.: ELRS edi					
058207925X	3 @	£ 4.95		162.30	14.85
50 09			11-Oct-1994		
Handbook on Animal Diseases in the Tropics - 4 ed.					
PBK					
0712015021	5 @	£ 19.00		1038.35	95.00
			11-Oct-1994		
Appleby, Michael C	Poultry production systems:				
behaviour, management and well HBK					
0851987974	5 @	£ 40.00		2186.00	200.00
				C'FWD	
				96978.82	8872.75

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				N.KR	£	
B'FWD NO OF ITEMS		320		96978.82	8872.75	
52	09		11-Oct-1994			
Church, D.C. Basic Animal Nutrition and Feeding -						
3 ed, Internatl. PBK						
0471637734						
		5 @	£ 19.95	1090.25	99.75	
53	09		11-Oct-1994			
Crowder, I. V. Tropical grassland husbandry: (I.V.						
Crowder, H.R. Chheda) (Tropical agriculture seri)						
0582466776						
		3 @	£ 60.00	1967.40	180.00	
54	09		11-Oct-1994			
Doherty, Thomas John Diagnosis and treatment of						
large animal diseases PBK						
0721639836						
		5 @	£ 20.50	1120.35	102.50	
55	09		11-Oct-1994			
Hodgson, John Grazing management: science into						
practice PBK						
0582450101						
			£ 15.99	524.31	47.97	
56	03		11-Oct-1994			
McDonald, Peter Animal nutrition - 4th ed PBK						
0582409039						
		3 @	£ 23.99	786.63	71.97	
57	10		11-Oct-1994			
Anatomy and physiology of tropical livestock PBK						
(Intermediate tropical agr)						
0582275101						
		3 @	£ 7.50	245.94	22.50	
58	09		11-Oct-1994			
Livestock in Tropical Climates: International						
Conference - 1st: Report. E - 2 ed. BDS						
0380981002						
		5 @	£ 17.50	956.40	87.50	
				C'FWD	103670.10	9484.94

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				N.KR	£
B'FWD NO OF ITEMS		347		103670.10	9484.94
59	10		11-Oct-1994		
Bone, Jesse F. Animal Anatomy and Physiology - 3 ed. HBK					
0835900991	5 @		£ 67.40	3683.40	337.00
60	10		11-Oct-1994		
Humphreys, I. R. Tropical pastures and fodder crops - 2nd ed PBK					
058277523X	3 @		£ 8.95	293.46	26.85
61	10		11-Oct-1994		
Pillay, T.V.R. Aquaculture: Principles and Practice - New ed PBK					
0852382022	5 @		£ 29.50	1612.20	147.50
62	11		11-Oct-1994		
Principles of Field Crop Production - Rev. ed. PRK					
0424001314	3 @		£ 27.50	901.74	82.50
63	11		11-Oct-1994		
Goldman, Charles R. Entomology - 2 ed., Internatl. PBK					
0071133593	5 @		£ 21.95	1199.55	109.75
64	11		11-Oct-1994		
Martin, John Holmes Principles of field crop production - 2nd ed PBK					
0022757200	3 @		£ 51.95	1703.43	155.85
65	11		11-Oct-1994		
Dryland farming in Africa PBK					
0533476549	5 @		£ 19.99	1092.45	99.95
C'FWD				114156.33	10444.34

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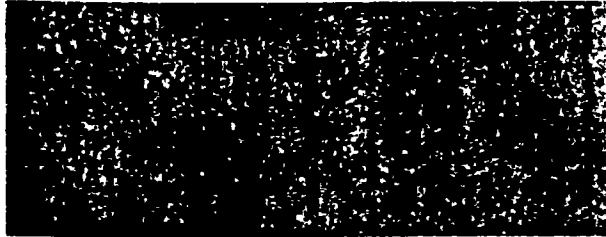
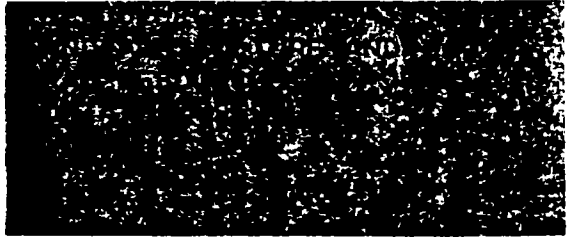
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					N. KR	£
B'FWD NO OF ITEMS 376					114156.33	10444.34
56	12	Ban, Anne W	Agricultural extension PBK	11-Oct-1994		
		0582028833	10 @	£ 6.99	764.00	69.90
67	12	Falconer, Douglas Scott	Introduction to quantitative genetics - 3rd ed PBK	11-Oct-1994		
		0582016428	3 @	£ 20.99	688.26	62.97
68	12	Gardner, Eldon John	Principles of genetics - 8th ed PBK	11-Oct-1994		
		0471533971	10 @	£ 23.00	2513.90	230.00
69	12	Osburn, Donald D.	Modern Agricultural Management: Systems Approach to Farming - 2 ed HRB	11-Oct-1994		
		0835945502	10 @	£ 66.35	7252.10	663.50
70	12	Turner, R.L.	Comparative Farming Systems HRK	11-Oct-1994		
		089862780X	3 @	£ 28.50	934.53	85.50
71	12	Welsh, James	Fundamentals of plant genetics and breeding HRK	11-Oct-1994		
		0894642792	2 @	£ 43.15	943.26	86.30
72	13		Molecular markers in plants HRK	11-Oct-1994		
		0892527144	2 @	£ 120.00	2623.20	240.00
B'FWD					129875.58	11882.51

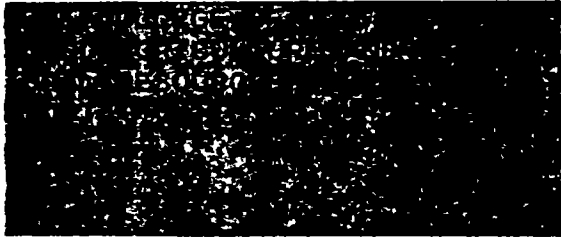
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			N.KR	£
B'FWD NO OF ITEMS 416			129875.58	11882.51
73	13	11-Oct-1994		
Blum, Abraham (Ed.) Plant Breeding for Stress Environments HRK				
0849363888	2 @	£ 141.00	3082.26	282.00
74	13	11-Oct-1994		
Borojevic, Slavko Principles and methods of plant breeding HBK (Developments in crop scie)				
0444988327	5 @	£ 64.75	3538.60	323.75
75	13	11-Oct-1994		
Kuckuck, Hermann Fundamentals of Plant Breeding HBK				
3540521097	3 @	£ 42.50	1393.59	127.50
76	13	11-Oct-1994		
Nonnecke, I.L. Vegetable Production HBK				
0442267215	5 @	£ 56.50	3087.75	282.50
77	13	11-Oct-1994		
Preece, John E. The biology of horticulture: an introductory textbook HRK				
0471059897	3 @	£ 28.95	949.26	86.85
78	13	11-Oct-1994		
Rice, Robert B. Fruit and vegetable production in warm climates PBK				
0333468503	3 @	£ 16.99	557.10	50.97
79	13	11-Oct-1994		
Simpson, Jules A. Tropical fruits - 2nd ed (Tropical agriculture seri)				
0582404096	5 @	£ 45.60	2492.05	228.00
C'FWD			144976.19	13264.08

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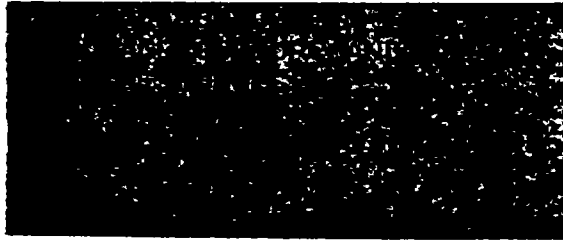
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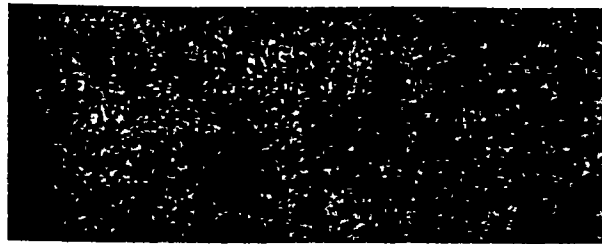
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B'FWD NO OF ITEMS 442		144976.19	13264.08
80	14 Drought resistance in cereals 0851986412	11-Oct-1994 2 @ £ 28.00	612.08 56.00
81	14 Agrios, George Nicholas Plant pathology - 3rd ed 0582606152	11-Oct-1994 1 @ £ 35.50	388.02 35.50
82	14 Heitefuss, Rudolph Crop and plant protection 013683020X	11-Oct-1994 5 @ £ 50.00	2732.50 250.00
83	14 Hill, Dennis Stanley Pests and diseases of tropical crops - Vol. 2: Handb PBK (hard cover tropical agr) 0582606152	11-Oct-1994 3 @ £ 14.25	467.25 42.75
84	14 Manners, John G Principles of plant pathology - 2nd ed PBK 0521435641	11-Oct-1994 5 @ £ 16.95	926.30 84.75
85	15 Hathway, David Ernest Molecular mechanisms of herbicide selectivity HRK 0198570070	11-Oct-1994 2 @ £ 35.00	765.10 70.00
86	15 Jones, C. Allan C4 grasses and cereals: growth, development, and stress r 0471824097	11-Oct-1994 2 @ £ 53.30	1165.14 106.60
C'FWD		152032.58	13909.68

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		N.KR	£
B'FWD NO OF ITEMS 462		152032.58	13909.68
87	15 McKersie, Bryan D Stress and stress coping in cultivated plants HRK 0792328272	2 @ £ 85.00	1858.10 170.00
88	15 Taiz, Lincoln Plant Physiology HRK 080530245X	5 @ £ 23.95	1308.85 119.75
89	18 Herbst, J.H. Farm Management: Principles, Budgets Plans PRK 0875633307	10 @ £ 8.35	2071.20 189.50
90	18 Kay, Ronald D. Farm management: planning, control and implementation - 2nd edition 0070334943	3 @ £ 41.00	1344.39 123.00
OUT OF PRINT			
91	19 Atlas, Ronald M. Handbook of microbiological media HRK 0849329442	2 @ £ 79.00	1726.94 158.00
92	19 Chan, Eddie Chin-Sun Laboratory exercises in microbiology - 6th ed SP 060242625	2 @ £ 17.95	392.38 35.90
	Evans, H.F. Insect Biology: A Textbook of Entomology HRK 0201119811	3 @ £ 31.95	1047.63 95.85
C'FWD		161782.07	14801.68

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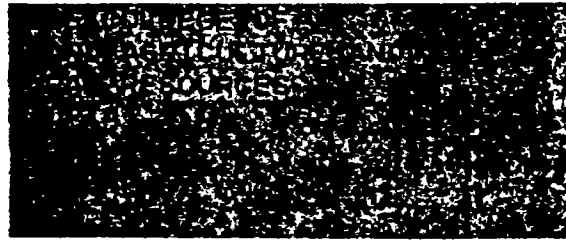
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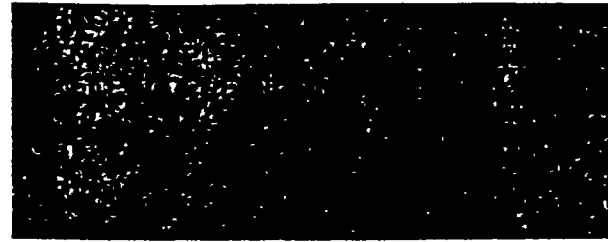
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				N. KR	£
B'FWD NO OF ITEMS		489		161782.07	14801.68
94 19			11-Oct-1994		
Hobhouse, L	T	Principles of sociology - 5			
vols. boxed					
041509254X		10 @	£ 195.00	21313.50	1950.00
95 19			11-Oct-1994		
Pelczar, Michael Joseph		Microbiology: Concepts and			
Applications PBK					
0071129146		5 @	£ 21.95	1199.55	109.75
96 19			11-Oct-1994		
Weber, Max		Basic Concepts of Sociology PRK			
0006503041		3 @	£ .95	277.88	20.85
TOTAL - QUANTITY				184523.00	16882.28
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Qty	Beskrivelse av produkt	Modell/Type	Cat.no.	Valuta	Price	Total price	Price in NOK	Supplier
	Laboratory Equipments and glass ware							
	B. From ELE International Agronomics Catalogue							
	Surveying							
1	Stereoscope		EA500-118					
	Theodolite		EA500-175				0.00	
SUM							0.00	
	General Purpose							
5	Hotplates		EA583-128/01					
2	Hotplate stirrer with PPEE beads		EA583-128/01					
1	Portable leaf area meter		EA470-010/01					
1	Plant photosynthesis analyser with spare parts		EA470-020/01					
	• (spare parts kit, memory card, broad and narrow leaf chambers)		EA540-026					
1	Automatic porometer with spare parts		EA22-7000					
2	Dial-O-Gram balance		EA45-3340/81					
2	CLD Centrifuge with rotors and bucket		EA45-3340/15					
5	pkts of 4 100ml glass centrifuge tubes		EA525-240/01				0.00	
1	Digital colorimeter							
SUM							0.00	
	Glass ware							
25	Burettes, 10ml		EA82-1400					
15	Burettes, 25ml		EA82-1420				0.00	
SUM							0.00	
	C. From Sigma Chemical Co.							
1900	Finlips, 200 micro L		P 1906		\$ 66.00	125 400.00	814 096.80	Teico
1900	Finlips, 1000 micro L		P 1665		\$ 88.00	167 200.00	1 085 462.40	Teico
20	Polystyrene cuvettes, 340-800mm		C 5291		\$ 295.00	5 900.00	38 302.80	Teico
1000	Polypropylene microcentrifuge tubes with attached lids, graduated, 0.65ml		T 2781		\$ 40.80	40 800.00	264 873.60	Teico
900	Same, volume 1.7 ml		T 2906		\$ 38.00	34 200.00	222 026.40	Teico
700	Same, volume 2.0ml		T 3031		\$ 41.00	28 700.00	186 320.40	Teico
100	Dialysis tubing (seamless), ave. flat width 40mm		D 0655		\$ 79.15	7 915.00	51 384.18	Teico
SUM							2 662 466.58	
	Chemicals							
100	Methylene blue dye		261323 Q		\$ 11.55	1 155.00	7 498.26	Teico
50	Butler tablets PH 4.00		331542 Q		\$ 11.70	11 700.00	75.96	Teico
50	Butler tablets PH 7.00		331552 S		\$ 11.25	11 250.00	73.04	Teico
50	Butler tablets PH 9.20		331562 U		\$ 9.15	9.15	59.40	Teico
100	ml Salicyl A: dehyde GPR		300353 R		\$ 8.40	8.40	54.53	Teico
5	L Formaldelye solution GPR		284216 N		\$ 18.00	18.00	116.86	Teico
10	g 6-Furtulyl aminopurine (Kinelin)		44044 HM		\$ 160.00	160.00	1 038.72	Teico
SUM							8 916.76	

		From Aldrich									
	1 kg	Saltylamide	86,041.7	\$	30.55		30.55				
	1 kg	acetanilide	11,293.3	\$	34.60		34.60				
	500 g	Ethylenediaminetetraacetic acid ferric monosodium salt	280233 V	\$	18.30		18.30				
	227 gm	Hydrazo sulfide	29,544-2	\$	108.60		108.60				
	1 kg	Calcium exalate	28,984-1	\$	46.60		46.60				
	500 gm	Sepradex R	27,107-1	\$	436.50		436.50				
	100 gm	Nickel (II) chloride	36-430-4	\$	14.50		14.50				
	SUM						689.65				4 477.21
Audiovisual Materials and Supplies											
	2	opaque projector	OP5-4006	\$	889.00		1 778.00				
	1	VCR (sharp) 4 head VCR	XA410	\$	495.00		495.00				
	1	TV/VCR Combinations (20")	CHN200AT	\$	777.00		777.00				
	5	Color coded slide trays	373V	\$	10.95		54.75				
	30	Audio tape clamshell box	ATBI	\$	3.95		118.50				
	1	Bertford multimedia cart	BRBBVLSI	\$	212.00		212.00				
	1	Displays (40 1/2" H)	GFEO1	\$	428.00		428.00				
	1	Paperback carousel displays (loop model 54" H)	ADAGPB4	\$	424.00		424.00				
	1	Display	8620	\$	527.00		527.00				
	1	Newspaper easel (tubular)	TNPE	\$	195.00		195.00				
	1	Megazine displays (wall-mounted)	8233	\$	327.00		327.00				
	2	Display shelves (w/height top)	G893CL	\$	1 240.00		1 240.00				
	1	Add-on sectional visible files with replacement card pockets									
	1	-(tray) top, base, cards) for periodicals record keeping	DV642-DVP64E	\$	158.55		317.10				
	1	Bookcraft 380 Binding system	BC380-220	\$	820.00		820.00				
		Accessories for BC380-220:									
	1	-2 spacer plates (8 1/2"x11")	BC381	\$	8.85		8.85				
	1	-cooling stand (8 1/2"x11")	BC384	\$	20.75		20.75				
	1	-carrying case(21x12x10)	BC386	\$	59.95		59.95				
	3	Taping system applicator	6367	\$	53.50		160.50				
	5	Replacement blade for No 6367	6367B	\$	6.15		30.75				
	8	Transparent protectors (dr coils.) ST138	55	\$	9.65		77.20				
	10	Book press	712	\$	83.50		835.00				
	30	-middle board replacement	712MB	\$	1.95		58.50				
	20	-top board replacement	712MB	\$	3.50		70.00				
	10	-replacement crank	712K	\$	4.95		49.50				
	30	-replacement disc	712Dsc	\$	0.45		13.50				
		Brass edge boards:									
	5	-9x12"	BB912	\$	29.75		148.75				
	5	-1x14"	BB1114	\$	31.75		158.75				
	20	Buckram book cloth(4"x100 yds)	BK460	\$	71.00		1 420.00				
	4	Tape-Away TM	67800	\$	6.95		27.80				
	6	Vinyl delayed-bond laminate	995	\$	32.65		195.90				
	2	Trimmer (18 1/2) cutting length)	D4418	\$	239.00		478.00				
	1	-roll cradle for D4418	D4418A	\$	64.00		128.00				
	10	Neutral PH white adhesiv (quart)	AA664	\$	24.40		24.40				
	10	-80z dispensing bottle	AA664	\$	8.15		81.50				
	10	Graphic knife	48	\$	3.50		35.00				
	3	Graphic knife blades/pkg	49	\$	3.50		10.50				
	5	Bookbinding knives (square pi)	79	\$	6.85		34.25				
	5	(sharp pi)	795	\$	5.25		26.25				
	5	Steel-edged rulers(12" w/cork-back)	59012	\$	3.35		16.75				
	5	18" w/cork-back)	R59018	\$	4.35		21.75				

12	Waxed paper (6x9' 100shis/pkg)	96	\$	3.40	40.80	264.87	Gaylords
12	(9x12' 50 shis/pkg)	129	\$	2.00	24.00	155.81	Gaylords
2.5	Book repair card	773	\$	3.90	97.50	632.97	Gaylords
5	Linen thread (18/3 thick)	L7187	\$	31.00	155.00	1 006.26	Gaylords
5	Linen thread (20/2 thick)	768	\$	20.65	103.25	670.30	Gaylords
SUM						80 020.39	
Contingencies5%						137 794.05	
TOTAL Mekele						2 893 674.99	

8.7.4. List of Suppliers

B.H. Blackwell Ltd.
Broad Street
Oxford OX1 3BQ
England

British Council
P.O.Box 1043
Addis Ababa
Ethiopia

Addis Ababa University (AAU) Book Centre
P.O.Box 1176
Addis Ababa
Ethiopia

Gaylord Bros.:
Box 4901 Syracuse
NY 13221
4901 USA

CPU :
Computer Professionals United
P.O.Box 31166
Addis Ababa
Ethiopia

WB Publications:
P.O.Box 7247-8619
Philadelphia, PA
19170-8619 USA

Systemhyller A/S:
Stålfjæra 3
0975 Oslo
Norway

Natural Resources Institute (NRI)
Publishing Unit
Chatham Maritime
Kent ME4 4TB
United Kingdom

CFL Vision
Hercules House
Hercules Road
London SE1 7DU
United Kingdom

Soil Science Society of America (SSSA)
Headquarters Office, Book Order Dept.
677 South Segoe Road
Madison, WI
53711 USA

International Fund for Agricultural Development (IFAD)
Via del Serafico 107
00142 Rome
Italy

WILDart
Wilhelm Exner-gasse 23/32
Vienna
Austria

ICRISAT
Information Management and Exchange Program
Patancheru
Andhra Pradesh 502 324
India

OXFAM
274 Banbury Road
Oxford OX2 7DZ
United Kingdom

Carolina Biological Supplies
2700 York Rd.
Burlington, N.C.
USA

Haaland & Hamre
Skytterveien 200
Postboks 175
1371 Asker
Norway

PC House Integrated Computer Services:
P.O.Box 839
Addis Ababa
Ethiopia

Ås Foto:
Brekkev 5
1430 Ås
Norway

Telco: ES (Eagle Scientific ltd):
Box 2287
Addis Ababa
Ethiopia

Høyskoledata as:
Drammensvn. 130 B
0277 Oslo
Norway

Eik Maskin as:22 64 68 20
Box 35 Risløkka
0516 Oslo
Norway

Kjær & Kjær WorldWide
Grønmossevej 6
P.O.Box 260
5700 Svendborg
Denmark

TELCO: Riedel-de Haén Aktiengesellschaft:
Box 2287
Addis Ababa
Ethiopia

TALC (Teaching Aids at Low Costs):
P.O.Box 49
St Albans
Herts AL1 4AX
UK

Hameg Germany

John & Fluk Co USA:
P.O.Box C9090
Everett
Washington 98 206
USA

Ericsson Electronic Services
P.O.Box 34
1361 Billingstad
Norway

F. Arngren
Arngren Electronics as
Stasjonsv. 51
Box 2 Holmen
0322 Oslo
Norway

Fisher

Karl Kolb comb. &Co.-Kg. scientific & Tech.supplies, Germany

Adam Roully
Crown Quay Lane Sittingbourne
Kent
ME103JG
UK

AMCE The Automotive Manufacturing Company of Ethiopia:
P.O.Box 5736
Addis Ababa
Ethiopia

Sherif & Sons
P.O.Box 50053
Addis Ababa
Ethiopia

Metric Analyse Division:
Metric as
P.O.Box 93 Holmlia
N-1201 Oslo
Norway

Local suppliers - used for minor items which can be bought in Addis Ababa.