

(2年の後期に、音環境についての講義が予定されており、授業内容を具体的に理解させるための手段として)

光環境－照度計その他

(3年の前期に光環境について講義が行われ、授業中に簡単な実験・計測を行うため)

現在までに、日本人専門家による購送機材として、パソコン2台、ビデオ2セット、ビデオ・カメラ2台、ワープロ2台、英文ワープロ1台、OHP2台、カメラ2セットその他を建築学科が有しており、供与機材として、CADシステム1式が現地購入されている。1992年度は、環境系の実験キット、レベル・レコーダー、周波数分析機や各種温度計、CAD教育用パソコン、写真現像機器1式などがJICAに申請されており、これら以外に、設計演習のためのキャビネットなども申請されている。構造実験用の機材については皆無である。

4-4 機械工学科

(1)前回の巡回指導(91.12)以降の日本人専門家の活動状況(長期・短期)

1991年12月に行われた前回の巡回指導以降、新規に赴任した日本人の長期専門家はいないが、長期専門家として1991年4月より井上高司専門家(生産機械)が赴任しており、機械工学科の実習場(工作機械、自動車、建設機械、溶接および動力試験室)の機材の維持・管理、実習場間の業務調整および実験棟内の基礎実験装置・機械の維持管理などの業務をすべて行っている。さらに、現在、日本国内の大学から派遣された機械工学の長期専門家が不在のため、井上専門家が機械工学科のJICAプロジェクト関連業務の取りまとめのみならず、学科運営の指導、さらに研究に対する助言指導など多岐にわたり活躍しており、その指導の下に「木炭ガスエンジン」に関する研究が進展していることは特筆に値する。しかし、これに伴う負担も大きく、井上専門家の本来の目的を遂行する上で重大な障害となっていることは否めない。できるだけ速やかに、教育・研究に携わる日本人長期専門家を派遣し、JKUCATの教育・研究環境を整えと共に、機械工学科として充実・発展させることが急務である。

一方、短期専門家については、1991年7月に、熱力学及び計測工学の分野に各1名派遣された以降、日本人の短期専門家の派遣は行われていない。今後も、流体力学、材料工学、制御工学および生産工学など年間2名程度の日本人短期専門家の派遣により、実験設備および研究上の指導が予定されているが、短期専門家の具体的な人選はなされておらず、日本国内からの派遣を実現するために、従来にも増して真剣な努力が強く望まれる。

(2)学士課程カリキュラムの実施状況

現在、学士課程の学生は、第2学年の1学期を終了した時点であり、専門科目は少なく、大部分が教養科目である。また、理学部の協力もあり混乱もほとんどなく学士課程カリキュラムは実施さ

れているようである。シラバスは、Kenya大学により、第3年次まで承認されており、カリキュラムもでき上がってはいるが、具体的な講義担当者が未だ明確にされていない点にやや不安が残る。これは、講義担当者の決定が新規の教官採用および短期専門家の派遣状況などに依存することもあるが、基本的には、現在の教官でできるだけカバーすることを考えるべきであろう。この点に関しては、機械工学科教官の自助努力が期待される。また、学年進行に伴って、開講すべき専門科目が増加するのに対応した教育体制を整備するよう、ケニア側は勿論、日本側も強力に支援する必要がある。

(3)ディプロマ課程との併設、また、ディプロマ課程の学生受入れ、教員採用の遅延が学士課程に与える影響と対応策

ディプロマ課程を併設したまま、TSC所属の教官が機械工学科から退去したことによりディプロマ課程学生に対する講義など、大学雇用の教官による学生教育への負担が増大していることは否めない。また、学士課程学生の学年進行に伴い、専門科目の開設講義数も大幅に増加するため、ディプロマ課程を併設したまま新規教官の採用が遅れば、大学雇用教官の負担をさらに助長させ、ディプロマ課程のみならず学士課程教育にも混乱を招き、学生に対する十分な教育効果は勿論、教官の研究成果も期待できない状態になる恐れがある。また、特に機械工学科の教官に関しては、国内からの採用が困難のケニアの事情を考えれば、新規教官の採用は非常に難しい問題であり、ある程度の採用遅延はやむを得ないのかも知れない。従って、その対策の一つとして、TSC教官およびその他の非常勤講師によるディプロマ課程学生の教育を今後も引き続き実施する必要があるものと思われる。

このように、JKUCATにおける教育・研究は、現在非常に重要であると同時に、非常に困難な時期にさしかかっている。JKUCATプロジェクトの目的を理解し、真にJKUCATの発展を願うのであれば、従来から計画・実行されている教官採用、機材供与、教官研修、長期・短期専門家の派遣および上級学位取得などについて、文部省および日本国内の大学に対するより積極的かつ具体的な働きかけを強力に押し進める必要がある。さらに、多くの外国人留学生を受入れつつある日本国内の大学教官は、JKUCATプロジェクトなどのような時間的、経済的そして人的など幅広い領域にわたるプロジェクトを通して、日本の国際化が真に問われていることももっと真剣に受けとめ、国内での協力体制を整備する努力を払うべきである。

(4)前回の巡回指導(91.12)以降に新規採用された教官の略歴・専門分野・研究内容

前回の巡回指導が行われた1992年12月時点においては、教官は講師6名、上級講師1名、助教授1名の計8名であった。

その後、1992年6月に、以下の講師4名と助講師3名の計7名が採用された。その結果、現在では教官数は15名であるが、その内、3名は外国に留学中であり、教官実数は12名である。

新規採用教官の略歴・専門分野・研究内容の詳細などについては、不明な点もあるが、以下に示す通りである。

①助講師

H. M. Warui	HND, BSc. (Ph. D.)	流体工学
G. G. Wanyoike	HND, (M. Sc.)	制御工学
S. Wanjii	HND, (M. Sc.)	熱力学

②講師

H. J. Onyango	35歳	B. Sc., M. Sc.	生産工学
M. S. Wangati	32歳	B. Sc., M. sc., Ph. D.	熱力学／流体工学
B. K. Kariuki	33歳	B. Sc., M. sc.	熱力学／流体工学
N. Boro	49歳	HND, DNS	生産工学／設計工学

このうち、H. M. Warui、G. G. Wanyoike及びS. Wanjiiの3名が文部省国費留学生として日本に留学中である。

(5)今後2年半の教官採用計画（JICA・C/P研修、JICA第三国個別研修、文部省国費留学、国内留学）および教官採用計画の進捗状況

本プロジェクト終了時に至るまでの各年度における教官採用計画は既に立てられており、その計画に沿って教官の採用が行われている。また、採用した教官の育成計画（JICA・C/P研修、文部省国費留学など）もすでに立てられている。(4)で示した7名の教官の採用およびその内の3名の文部省国費留学は、これらの計画案に沿って実施されたものであり、現時点において、教官採用計画および育成計画は、比較的順調に実施されているようである。

しかしながら、ケニア国内から機械工学に関する教官を採用することが困難であることにもより、現在、なお教授、上級講師および助手などの採用が十分には行われていない。また、専門分野についても、機械工学の多岐にわたる分野をカバーするには十分な教官数が確保されているとは言えず、教官採用については引き続き努力する必要がある。特に、Ph. D.を有する上級講師の採用と、材料工学、機構学および計測工学の分野での教官が不足しているようであり、この分野での教官を優先的に採用することが必要であろう。さらに、JICA・C/P枠による教官の技術研修を行うと共に、日本国内の大学において論文博士による学位取得の道を開き、JKUCATを魅力ある職場にすることも教官採用計画の順調な実施には有効であると思われる。

(6)1992年度以降の長期専門家の担当科目

機械工学科においては、1990年5月より1年間、岡崎修三専門家が滞在したのみであり、M. Sc.以上の学位を持つ長期専門家は現在派遣されていない。さらに、日本国内における関係者の努力にも拘らず、現在なお、学士課程学生の教育・研究指導のできる長期専門家派遣の具体的な予定は立

っていない。

このように、長期専門家の派遣について予定の立たない状態で、1992年度以降の長期専門家の担当科目を決定することは困難であるが、現在の機械工学科教官の専門性を考慮すれば、長期専門家は流体・熱工学、材料工学および計測工学関係の科目を担当することになる。

(7)1992年度以降の短期専門家による集中講義の必要性、短期専門家派遣計画

(6)でも述べたように、長年の長期専門家の不在のため、機械工学科は学科運営のみならず短期および長期専門家の派遣などについて日本国内の協力が非常に得られにくい状況にある。このため、短期専門家の集中講義の必要性は、他学科および他学部と比べても比較的高いものと思われるが、短期専門家の派遣計画の具体的な実施は、現在のところ非常に困難な状態である。特に、(6)に示した分野においては、短期専門家による集中講義が強く望まれているが、その具体的な派遣計画は立っていない。

(8)講義代替型短期専門家を減らすための、ケニア人非常勤講師活用計画の実施状況

J K U C A T 全体として、ケニア人の非常勤講師を活用することは、J K U C A T が将来的にケニア人によって管理・運営され、ケニアの大学として発展するために必要なことと理解できる。しかしながら、(4)でも述べたように、現在のケニアでは、機械工学の分野で学士課程学生を教育できる有資格者が少なく、ケニア人を非常勤講師として十分に活用することおよびケニア人非常勤講師の活用計画を具体的に立てることは困難な状況にあると言わざるを得ない。機械工学科における1992年第1学期時のケニア人非常勤講師の数は21名であるが、そのうち15名はディプロマ課程学生の教育要員であり、学士課程学生の教育要員は6名にすぎない。今後もケニア人の非常勤講師を活用する努力を続けることは勿論であるが、機械工学科としては、当面は短期専門家による専門科目の講義は必要不可欠であると考えられる。

(9)中間評価値 (M/Dに添付) 指標別コメント

以下に、中間評価値およびそれに対するコメントを示すが、中間評価値の定義およびその利用目的などについては統一が図られたものの、プロジェクト開始時に中間評価をこのような方法で行うことが明確にされていなかったため、学部および学科間で中間評価に対する認識に相違があるように思われた。また、J K U C A T プロジェクトにおいては、日本国内の協力体制が不可欠であるにも拘らず、この点が中間評価の対象となっていないため、単純に中間評価値のみから各学部および学科間の比較を行うことは、必ずしも適切ではないことを明確にしておく必要がある。

以下、() 内は中間評価値を示す。

I. 教官の活動

1. 年間教官1人当り研究数(0.2件)

中間評価時点まで教官の慢性的な不足から学生の教育に労力を必要としていたため、十分な研究活動ができなかったこともあり、機械工学科においては、これまでJICA現地業務費の現地研究費による研究が1990年度および1991年度に2件行われたに過ぎない。また、現在進行中の研究が2件あり、さらに今後の研究課題として8件が予定されている。今後、教官数の増加および研究分野の広がりにともない、学科内での共同研究などが可能となり、教官の研究数が増加することは十分予測される。しかし、研究活動の活発化と共に、研究内容の検討および研究費の確保などが、今後問題になる可能性がある。

2. 年間教官1人当り論文等掲載及発表数(0.2編)

これは、年間教官1人当り研究数と密接に関係しているため、やはり十分であるとは言えないが、L. M. Masuが国際会議で2編の研究発表を行っている。

3. 年間教官1人当り学会など出席数(0.2回)

L. M. Masuが1991年に南アフリカおよびシンガポールで開催された国際会議に出席しているのみである。このように、学会など出席数が少ないのは、JKUCATにおける研究活動がまだまだ活発でないことにもよるが、ケニア国内で機械工学に関する学会の開催が皆無であること、さらに国際会議などに参加するための経済的な問題などケニアの国内事情も大きな要因となっているものと考えられる。この点に関しては、JKUCATにおける研究活動の活発化と共に何らかの対策を講ずることが必要になってくるものと予想される。

4. 上級学位取得教官数(0名)

中間評価時点においては、残念ながら上級学位を取得した教官はいない。しかしながら、現在、文部省国費留学により、以下の3名が日本に留学中であり、上級学位取得が期待される。

- ① H. M. Warui (M. Sc. Ph. D.) 岩手大学・群馬大学 (1995年3月まで)
- ② G. G. Wanyoike (M. Sc.) 岩手大学 (1993年3月まで)
- ③ S. Wanjii (M. Sc.) 岩手大学 (1993年3月まで)

II. 学生数と進級試験

1. 在学生数(定員62名、在籍数57名)

現在の学生数は、学士課程1年生が26名(定員31名)、2年生が31名の計57名である。今後の学生数は、定員を確保した場合、次の通りである。

- ① 予定学生数: 1993年度90名、1994年度123名、1995年度156名
- ② 最大定員は、各学年33名×5学年=165名
- ③ ディプロマ課程学生は、現在、3学年合計77名(定員27名×3=81名)

2. 進級率 (100%)

1991年度は、学士課程1学年(現在の2学年)の31名が、全員2学年に進級しており、進級率は100%である。

Ⅲ. 大学教育・研究の状態

1. 大学予算定員に対する教官充足率 (53%)

これまでの教官数8名に加え、1992年6月には、7名の教官が新規採用され、現在15名の教官が在籍している。ただし、新採用の教官のうち、3名は元TSCの教官であり、現在日本に留学中である。なお、今後の学士課程学生および専門科目の増加に対応するためには、引き続き新規教官の採用を進める必要がある。

2. 予算定員に対する技官充足率 (39%)

技官としては現在9名在籍しているが、そのすべてが技官と技官補であるため、今後は主任技官および上級技官クラスの技官を採用する必要がある。

3. 教材充足率 (40%)

基礎実験関係の機材はほぼ充足しているが、教官の研究用の測定装置を中心とした機材が不足している。また、不足している学生教育用の機材については、1993年度の供与機材として申請予定である。

4. 教官定着率 (94%)

中間評価時点以前に採用された教官9名のうち、1990年に採用された講師1名が1992年6月に退職している。

5. 常勤教官講義負担率 (36%)

第1年次学生については、共通科目が大半を占めるため理学部による講義科目が多く、学科内の常勤教官の講義負担はこれまで必ずしも多いとはいえなかった。また、TSC講師の退去後は、ディプロマ課程の学生に対する講義まで現状の常勤教官で負担することは不可能であるため、現在21名の非常勤講師(うち15名はディプロマ教育要員)により、教育が行われている。さらに、第2年次以降の専門科目の増加にともない、1992年6月には7名の新規教官の採用が行われている。しかしながら、学年進行に伴い、常勤教官の授業負担が今後増加することは避けられないものと思われる。

6. シラバス整備率 (100%)

現行のシラバスの改正は進行中であるが、第1学年次から第3学年次については、親大学であるKenyatta大学により承認されている。また、第4・5学年次分については、今後の改訂と承認が必要である。

7. 年間1学科当りセミナー等開催数 (0回)

残念ながら、現在までセミナーなどの開催実績はない。今後は、教官に対する技術交換のた

めのセミナーの他、実習場技官のための工作機械操作技術および生産技術向上のセミナーも含めた、学生主催のセミナーの開催が望まれる。

8. 大学経常予算に対する人件費率（1990年度：45.1%、1991年度：76.9%）

9. 教官1人当り学生数（3名：学士課程学生、20名：ディプロマ課程学生を含む）

(10) 終了時評価目標値（内部資料）指標別コメント

プロジェクト終了時の評価目標値については、機械工学科教官と真剣かつ率直に話し合った。しかしながら、その目的や定義および取り扱い方が明確でないこともあり、最終的には、終了時評価目標値が内部資料程度の意義しか持たざるを得なかったことは誠に残念である。以下、（ ）内に、敢えて終了時目標値を示す。

1) 教官の活動

1. 年間教官1人当り研究数（0.4件）

- ・共同研究の促進も考慮し、3人当たり1件の研究を実施する。
- ・教官研究数は、研究体制の整備と共に増加することが期待される。

2. 年間教官1人当り論文など掲載および発表数（0.2編）

- ・各教官2年毎に1編を目標とする。
- ・教官の意識および研究の進展と共に必然的に増加すると思われる。

3. 年間教官1人当り学会など出席数（0.2回）

- ・各教官5年に1回は出席するように努力する。
- ・ケニア国内での開催およびケニアの経済状態が改善されれば、より多くの学会出席が可能であると思われる。

4. 上級学位取得教官数（3名）

- ・現在留学中である。

2) 学生数と進級試験

1. 在学生数（162名）

- ・最大定員を見込んだ数である。

2. 進級率（100%）

3) 大学教育・研究の状態

1. 大学予算定員に対する教官充足率（100%）

2. 大学予算定員に対する技官充足率（100%）

3. 教材充足率（100%）

4. 教官定着率 (90%)
5. 常勤教官講義負担率 (70%)
 - ・ 機械工学科教官割当時間数 / 全時間数
6. シラバス整備率 (100%)
 - ・ 学年進行と共に整備し、Kenyatta大学の承認を受ける。
7. 年間1学科当りセミナーなど開催数 (2回)
 - ・ 学科主催のセミナーを年間2回開催する。
8. 大学経常予算に対する人件費率 (最大50%)
9. 教官1人当り学生数 (4名: 学士課程学生、6名: ディプロマ課程学生を含む)

(II) その他特記事項

J K U C A T に学士課程が設置されて以来、新規教官の採用およびシラバス・カリキュラムの整備と機械工学科も次第に充実・発展をし、Universityにおける学科としての体制ができつつある。調査項目には挙げられていないが、今回の調査で感じたこと、気が付いたことの幾つかを以下に述べる。

- 1) 機械工学科実習場の学生実習および生産活動への有効かつ効率的な活用が問題となっているが、現在では、実習場の管理を機械工学科から切り離し、工学部付属の施設として独立させ、運営する方向で工学部各学科間の合意を得られている。しかしながら、人員の適正配置や経理上の問題などから、具体的な実施は未だなされていない。学士課程学生の学年進行に伴う学生数の増加や教官研究の重要性に対応するためにも、工学部付属の施設への一刻も早い移行が強く望まれる。
- 2) 機械工学科のみならず、J K U C A T における教官の多くは博士の取得を希望しており、特に、日本の論文博士制度に対する期待が大きいようである。しかしながら、日本における論文博士の取得は容易ではなく、研究内容は勿論、長期間にわたる研究実績が要求される。このため、論文博士取得に際しては、主たる研究はJ K U C A T においてなされることにならざるを得ない。しかるに、現在のJ K U C A T における研究体制および研究実績では、論文博士の取得は非常に困難なように思われる。一方、この点を十分に説明し、教官の理解が得られれば、論文博士取得を目指して意欲的に研究に取り組む多くの教官の努力が期待されることから、J K U C A T に新しい研究の土壌が培われる可能性があることも否定できない。労を惜しまず、前向きに検討すべき課題であるように思われる。
- 3) 日本からの供与機材については、機械工学科の将来計画に基づいて決定される時期にきているように思われる。すなわち、学生の教育・実習用機材は、一部を除き、概ね十分であるが、

教官研究用の書籍や学術雑誌および実験装置などが不足しているようである。特に、計測機器や精密な解析装置はほとんど見当たらなかった。JKUCATにおける研究の活発化と主に、これらの機材の充実が望まれる時期が早く来ることを期待したい。ただし、これらの機器は高価なものが多く、研究を遂行する教官の研究計画および研究内容をよく検討した上で、真に必要なもののみを購入すべきであると同時に、これらの機器の有効利用を計るよう指導することも必要であろう。

4-5 電気電子工学

(1) 前回の巡回指導(91.12)以降の日本人専門家の活動状況(長期・短期)

1991年5月より石見芳夫専門家(電子工学)が赴任し、学科の取りまとめ、および運営指導、研究計画の推進、授業の担当を行っている。電子工学の長期専門家が欠員となっているため、石見専門家が電気工学・電子工学の両分野をカバーするなどの負担がかかっている現状である。1991年度はゼロであった研究も、1992年度はローカルコスト負担による2件の現地研究が4月よりスタートし、新たに2件の現地研究を申請中である。石見専門家の努力により徐々にではあるが、研究の重要性に関する教官の意識改革が進行しつつある。また、1992年8月4日には本学科主催の第2回電気工学セミナーが開催され、JKUCAT教官のみならず他大学および日本からの参加者があり、盛大に行われたことは特筆に値する。学科内にセミナー委員会が設けられるなど、運営組織の整備も進んではいるが、今後このセミナーを継続的に実施し定着させること、質と量の向上、参加者の範囲を広げること(将来はケニア国内のみならず他の東アフリカをも対象へ)、運営資金の調達など課題も多い。これらの解決には、石見専門家の経験とリーダーシップが重要な働きをしてくれる。このような地道な活動が、ケニアでの電気電子関連の学会設立のきっかけとなることを期待するものである。

ケニアではインフラストラクチャーとしての電力技術は非常に重要な分野である。本学科にはすでに模擬送電線装置があり、1992年度には衝撃電圧発生装置(200kV)の納入が予定されている。これらの装置を教育・研究に有効に活用するためには、実務に精通した電気工学の長期専門家を早急に派遣する必要がある。

1992年7月14日から8月13日まで上越教育大学川島章弘教授が短期専門家(高電圧工学)として滞在され、安全性などを考慮した衝撃電圧発生装置の配置計画、電力系統実験室の既納入機器の整備、学科運営へのアドバイスなどに従事された。紛失マニュアルの取得や模擬送電線装置の教育への活用などについても奔走して頂いている。川島教授には1993年度も短期専門家をお願いする予定である。

1992年度中に神戸大学平井一正教授(システム工学)にも短期専門家として指導をお願いする予定である。

(2) 学士課程カリキュラムの実施状況

3年次までのシラバスは承認されている。1年次はほとんど教養科目であり、現在2年次の1学期を終了したところである。表-12に1学期(1992年4~7月)の授業分担を示す。石見専門家も Analogue Electronics I を担当した。19人の教官のうち学士課程の科目のみを担当しているのは学科長だけであり、他は学士課程・ディプロマ課程の両方の科目を受け持つがディプロマのみである。

学年進行に伴って3年次・4年次・5年次と開講科目が多くなると、現在の教官数では担当し切れなくなる。多くの教官が3科目(ディプロマ課程を含む)の授業を担当しているが、授業には実験を含むのでそれにさかれる時間を考慮すると、教官当り3科目の担当が上限であろう。

(3) ディプロマ課程との併設、また、ディプロマ課程の学生受け入れ・教員採用の遅延が学士課程に与えた影響と対応策

T S C 雇用の教官(主としてHND所有者)がいなくなったため、残った大学雇用の教官のディプロマ課程科目の授業負担が増えた。現在のところ学士課程は2年次までであり開講科目も少ないので、現在の教官で何とかカバーできる状況にある。しかしながら、3年次以降では開講科目数が多くなるため、現在の教官数では授業が困難になる。また、次のような科目が専門的に担当困難となるので、その分野の教官の採用および育成が必要である。

3年次 Signal and Communication I

ただし、(4)で述べるDr. Mnene が採用されれば解決する。

4年次 Signal and Communication II (3年次に解決の可能性あり)

Instrumentation, Television

5年次 Quantum Electronics, Digital Communication, Antenna and Propagation,

Electroacoustics, Digital System Design, Telephone and Telegraphic Engineering

T S C 所属の教官が電気電子工学科からいなくなったことは、大学雇用の教官の授業負担を重くしたデメリットはあるが、教官の間の二重構造(大学雇用とT S C雇用)を解消したメリットもある。一方、学生間の二重構造(学士課程とディプロマ課程)は、教官・設備・施設の有効利用という面があるものの、弊害も多いと思われる。ケニアでのディプロマ課程卒業生のニーズ、他大学の状況を考慮する必要があるが、真に独立した大学となるためには、ディプロマ課程を廃止する方向に考えるべきではないだろうか。

以上のべた諸問題に対して次の解決策が考えられる。

- ① 長期計画に基づく教官雇用の確実な促進
- ② J I C A ・ C / P 研修、J I C A 第三国個別研修、文部省国費留学などによる教官の育成
- ③ 技術移転・供与機材活用に関する長期・短期専門家の投入
- ④ 日本の大学と連係して論文博士への道を開拓すること

(4) 前回の巡回指導(91.12)以降に新規採用された教官の略歴・専門分野・研究内容

新規採用教官の詳細については不明な点もあるが、以下の通りである。

1) 採用

助手 2名

E. Weke 24才 Moi 大卒 量子電子工学の分野をカバーするよう育成予定
文部省国費留学候補生

C. Wekesa 22才 Nairobi 大卒 電気機械 国内留学でナイロビ大修士に進学予定
上級講師

Dr. D. Murage Moi 大 Senior Lecturer パワーシステム

なお、T S C雇用であったD. O. Konditi、P. K. Kihato、F. G. Nalwa の3名が92年3月29日付けで
大学雇用となった。

2) 条件付き採用

助教授

Dr. S. N. Mneney Nairobi大 Senior Lecturer 通信工学

教授で応募、助教授としてなら採用すると連絡したが、現在のところ返事はない。

客員教授(1年間)

Prof. S. C. Tripathy インド Delhi工科大 強電分野

UNのボランティアとしてUNDPの新規援助がある場合のみ

(5) 今後2年半の教官育成計画(JICA・C/P研修、JICA第三国個別研修、文部省国費留学、
国内留学)および教官採用計画の進捗状況

本プロジェクト開始直後に1995年までの5年間の教官採用計画・教官育成計画が立てられている。
育成計画についてはほぼ予定通りに進捗しているが、今後については教官の採用状況、枠の少ない
文部省国費留学に採用されるか否かなどに依存するので、予定通りに進捗できるかどうか断言でき
ない。

一方、教官採用計画については、1991~1993の2年間に4名の教授を含み18名の教官の採用が計
画されており、人数的には満たされているものの資格の点で大幅な遅れが見られる。これはケニア
国内で人材難の分野があること、民間との給与格差などによるものである。1995年までに、総計32
名の教官の採用が予定されているが、(4)で述べたように徐々に採用実績を上げており、今後の一層
の努力が期待される。

(6) 1992年度以降の長期専門家の担当科目

石見専門家は今後下記の科目(年間1~2科目)を担当予定である。

Analogue Electronics I, Physical Electronics I

教官採用の進捗状況、学年進行に応じて柔軟に対応予定であるが、概ね担当科目を減らす方向である。

(7) 1992年度以降の短期専門家による集中講義の必要性、短期専門家派遣計画

1993年度の短期専門家は川島教授・平井教授にお願いする予定であるが、集中講義の必要性はない。(4)で述べた Dr. Mneneyが雇用されなかった場合には、Signal and Communication (通信工学)を短期専門家による集中講義とする予定である。集中講義は今後もケニア国内で非常勤講師が得がたい科目に限る。

(8) 講義代替型短期専門家派遣を減らすための、ケニア人非常勤講師活用計画の実施状況

1992年度1学期については、学士課程・ディプロマ課程ともに非常勤講師なしで授業を行った。2学期については、開講科目数と教官の負担を考慮して、ディプロマ課程に4～5名のケニア人非常勤講師を依頼する予定である。

講義代替型短期専門家派遣を減らすよう、今後も引続き努力する予定である。

(9) 中間評価値 (M/Dに添付) 指標別コメント

I. 教官の活動

1. 年間教官1人当たり研究数 (0)

研究数の定義は難しい。教官個人が興味を持って進めている研究は多くあるはずである。何らかの財政的援助を受けたグループ研究という意味では、1991年度までに研究活動はなかった。1992年4月より下記の2件の研究がスタートし、新たに2件の現地研究を申請中であるので、改善される見通しである。

① A Study of metal/semiconductor contact JICA 現地研究費

② Computer aided control engineering education JICA 現地研究費

2. 年間教官1人当たり論文等掲載及発表数 (0.1)

E. N. Ndungu の論文1編が International Journal of Electronics, Vol. 70, No. 3, March 1991 (イギリスで発行) に掲載された。学科長 M. S. Mbogho が学会誌 (Kenya Engineer) に2編の解説文を投稿 (1991年) しているので、1とカウントした。

3. 年間教官1人当たり学会等出席数 (0.2)

単に出席のみならず論文発表したことが分かる指標とすべきだろう。

[セミナー]

1991年 4名 (土木工学科主催)、2名 (電気工学科主催) 学外はなし。

[学会]

1990年 1名 (D. Omingo in Prague)

1991年 1名 (D. Omingo in Dakar)

4. 上級学位取得教官数 (2人)

1992. 3 1名 (P. K. Kihato, Msc. in Tottori Univ.)

他の1名は不明 (Mushoki?, Mumba?)

II. 学生数と進級試験

1. 在学生数 (59人)

第1学年 30名、第2学年 29名 計59名である。

2. 進級率 (100%)

第1学年から第2学年への進級は全員がパスしたが、2年次で2名が登録していない。

III. 大学教育・研究の状態

1. 大学予算定員に対する教官充足率 (72%)

1990/92の予算定員25名に対して、現在の教官数は18名である。

2. 予算定員に対する技管充足率 (56%)

1990/92の予算定員18名に対して、現在の技官数は11名 (61%) である。

3. 教材充足率 (30%)

学生実験に関しては、機材の絶対数が不足しており、ほとんどの科目で1つの実験が2回に分けて実施している。しかしながら、2学年までに関しては機材不足で実験ができないという状態ではない。専門書・雑誌は大幅に不足している。

4. 教官定着率 (94%)

1名のみ採用決定後1ヶ月以内で辞職しているが、理由は不明。

5. 常勤教官講義負担率 (70%)

第1学年 74%、第2学年 63% 日本人専門家が1科目担当

6. シラバス整備率 (100%)

第5学年までのシラバスについて学科内の議論は尽くされている。第3学年までのシラバスは承認されている。しかしながら、一般教育科目と専門科目の間の整合性 (例えば行列を数える時間) に若干の問題がある。

9. 年間1学科当りセミナーなど開催数 (0.5)

1991年・1992年に各1回開催 (0.7)

10. 大学経常予算に対する人件費率 (0.5)

11. 教官1人当り学生数 (4:1 [9:1])

[]内はディプロマ課程学生を含めた場合を示す。

(10) 終了時評価目標値（内部資料）指標別コメント

終了時評価目標値については、その定義や取扱いが難しく、また数値がひとり歩きする危険性を含むため、今回の協議議事録には取り上げなかった。しかし、あえて終了時目標値を（ ）で示すと次の通りである。

1) 教官の活動

1. 年間教官1人当り研究数（0.3）

1994年（終了評価時点）の教官数を36名と想定し、10件の研究を目標とする。

研究数の定義をはっきりさせる必要がある。

2. 年間教官1人当り論文など掲載および発表数（0.1）

年間3～4件を目標としているが、教官の意識改革が進めばもう少し高い目標を達成できるであろう。

3. 年間教官1人当り学会等出席数（0.3）

年間10名を想定。

4. 上級学位取得者数（5）

（1990-1992）2名+（1992-1995）3名（Ngoo, Mumba, Weke）

2) 学生数と進級試験

1. 在学生数（120人）

1994年時点では $30 \times 4 = 120$

2. 進級率（90%以上）

中間評価値から判断すると十分達成可能な目標である。

3) 大学教育・研究の状態

1. 予算定員に対する教官充足率（80%以上）

2. 予算定員に対する教官充足率（90%以上）

3. 教材充足率（80%以上）

4. 教官定着率（96%以上）

5. 常勤教官講義負担率（80%以上）

一般教育科目を含む。

6. シラバス整備率（100%）

1994年は4年次までの整備状況

9. 年間1学科当りセミナー開催数（1）

年間1回の学科主催セミナーを定着させる。

10. 大学経常予算に対する人件費率

11. 教官 1人当り学生数 (4:1 [8:1])

[]内はディプロマ課程学生を含めた場合を示す。

(II) その他特記事項

教官も徐々に充実しつつあり、学科長Mboghoと石見専門家を中心に学科としてのまとまりを見せつつある。今回の調査で特に気付いた点は次の通りである。

1) ローカルコスト負担による2件の現地研究が4月よりスタートし、現在新たな2件の研究テーマを申請中である。研究の重要性が任命的に始められたことは喜ばしいが、自主的な研究テーマを選定し、精力的に研究を推進する雰囲気にはなっていない。現有設備・機器（ある面ではかなり充実）で遂行できるテーマが多くあるはずであり、時間的・経済的障害も努力によって乗り越えうらと思われる。今後の電気電子工学科の発展のためには、個々の教官の大学教官としての意識改革が必要であろう。

2) 学科主催セミナーの継続的開催が必要である。非常に良い試みであるので、自主的運営によってより発展させる方向にもっていくべきであろう。それには運営組織をより強固にするとともに、高い目標に向かって地道な努力が期待される。また、本セミナーのみならず国内他大学や外国での研究発表を積極的に推進すべきであろう。

3) 1992年度中に工学部棟が完成し、衝撃電圧発生装置などの実験装置が納入される予定である。今後の機材供与が順調に進めば、学生実験については絶対数は足りないものの、授業科目はカバーできる見通しである。電子工学分野でも、コンピュータ関連を除き学生実験については、今後の供与機材で十分にカバーできる。

4) 文部省国費留学生の候補者選定をめぐる、学科内の教官の人間関係が多少ぎくしゃくしたと聞いている。昨年度候補になったから今年も候補に必ずなるという訳でなく、その年度の新規採用教官を含めて改めて候補者の選考をすべきであり、学科としての選択は間違っていなかったと思われる。教官の留学に対する期待は大きい、文部省国費留学の枠は少ないので上記のことを周知すべきであろう。

5) 教官（特に35才以上）の日本の論文博士制度に対する期待が非常に大きい、その難しさは十分には理解されていないと思われる。現実問題としては、本人の研究推進能力と努力にかかっており、容易には博士を取得できない。指導教官や研究テーマの選定、討論、一部の実験の遂行、論文のまとめなどにはJICA・C/P研修を有効に利用できる。しかしながら、大部分の研究はJKUCATで行う必要があり、長期間にわたる（修士所有者でも最低5～6年はかかる）努力が要求

される。教官に論文博士の期待を持たせ、JKUCATに定着させることは重要であるが、過度の期待は禁物で、論文博士に至るプロセスの正しい理解をさせる必要がある。

6) ケニアの経済状態があまり良くなく、大学への予算もかなり削減されている。しかしながら、総額 200万K. Shs. の教育用機材費のうち、25万K. Shs. が電気電子工学科に割当てられた。これまでの経常予算の執行に関しては、学科長も把握できないほど不明瞭であった。十分な額ではないが、早急の使用計画を立て、予算を執行すべきであろう。

表-12 Teaching Load for 1st Semester in April~July, 1992

Academic Staff

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO COVER	
						B. Sc.	Diploma
1	M. S. Mbogho	43	M. Sc.	S. L. / C. O. D	Power system, Electrical, Machine	EE2208 Electrical Principle II	
2	Dr. S. M. Kangethe	36	Ph. D.	S. L.	Power Electronics, Machine Control	EE2205 Electrical Researments	EE0304 Control & Measurement.
3	P. K. Hinga	39	M. Sc.	L.	Power Electronics		EE0202 Electrical Measurement, EE0309 Power Electronics
4	D. Osaba	40	M. Sc.	L.	Power Electronics		EE0216 Electronics Practice, EE0311 Electronics
5	D. Omingo	37	B. Ed., P. G. D.	L.	Digital Electronics, Physical Elect		EE0203 Digital Electronics, EE0204 Elect. Meas. & Testing, EE0301 Elect. Meas. & Testing.
6	J. K. Riitho	43	M. Sc.	L.	Electrical Machines, Power Systems		EE0104 Elect. Instal. Principle, EE0201 Workshop Practice, EE0307 Estimating & Tendering.
7	P. O. Anangi	36	M. Sc.	L.	Electrical Machines	EE2205 Electrical Engineering II	EE0206 Electrical Machines I
8	L. M. Ngoo	32	M. Sc. (Canada)	L.	Control Engineering		
9	E. N. Nungu	34	M. Sc.	L.	Electrical Filters	EE2208 Circuit & Network Theory	EE0211 Elect. Engi. Principles
10	D. O. Konditi	42	M. Sc.	A. L.	Electromagnetism, Telecommunications		EE0212 Electronics EE0214 Telecommunications
11	V. Magoha (Mrs.)	36	M. Sc.	A. L.	Electronics	EE2204 Physical Electronics I	EE0208 Electronics
12	F. Nyongesa	34	M. Sc.	A. L.	Telecommunication		EE0312 Television I, EE0314 Television II, EE0307 Electronics
13	M. O. Kebasso	32	M. Sc.	A. L.	Communication Systems		EE0103 Elect. Engi. Principle, EE0315 Telecommunication II, EE0313 Telecommunication I
14	P. K. Kihato	33	M. Sc.	A. L.	Power Electronics, Electrical Mach.		EE0306 Elem. of Elect. P. Sys. I, EE0305 Electrical Machines, EE0310 Elem. of Elect. P. Sys. II
15	F. Mumba	26	B. Tec. (Japan)	T. A. (Ethiopia)	Computer Engineering, Digital Elect		
16	F. G. Nalwa	51	B. Sc.	L.	Power Systems, Electrical Machines		EE0110 Workshop Practice, EE0209 Elect. Instal. Tech, EE0210 Workshop Practice, EE0207 Elect. Instal. Techniques
17	C. Wakesa	23	B. Sc.	T. A.	Electrical Machines		EE0110 Workshop Practice, EE0207 Electrical Engineering I.
18	E. Weke	25	B. Sc.	T. A.	Electronics		EE0107 Elect. Principle, EE0205 Elect. Engi. Principles

Technical Staff

1	E. W. Wanki		IND	S. L.	Electronics, Television		EE0213 B/W Television I, EE0215 B/W Television II
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Japanese Expert

1	Y. Iwami		M. Sc.	Expert	Electronics, Semiconductor	EE2202 Analogue Electronics I	
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5. 支援分野

5-1 理学部・コンピュータ学科

支援分野である理学部については、ケニア政府との当初の合意が十分に守られているとは言いがたく、ケニア政府側のより一層の財政的・人的負担が望まれる。

理学部より基礎学の提供、その中でも特にコンピュータ教育分野の農学部・工学部への提供には両学部の教官や学生からの不満も多い。それらの原因になっていると思われる事項とそれらへの対応策について述べる。

(1) 人材の不足

計算機室のパソコンの実習の指導をする技官が現在1人だけで、過重な労働を強いられており、現状を早急に改善しないと、現在の技官をも失うことになろう。現状の打開には勿論技官の増員が必要であり、学長も約束をしているが、コンピュータの実地指導を技官だけに頼らず、教官も進んで学生の実習などに参加する必要があると思う。

(2) 機材の不足

現在パソコンが20台（JICA支援機材）あるが、学生数に比して大変少ない。幸い、世界銀行の融資により40台設置のラボを2室予定しており、1992年度中には改善される見通しはある。

(3) 有資格教員の不足

現時点（1992年8月）で1人の採用を予定しているとのことだが、まだ言明できない状況だという。主として日本人専門家（小野泰文、1993年10月まで）と短期専門家（仲尾善勝、1992年12月まで）が講義を担当しており、日本で研修中の助講師（Miss Gatheria、1993年3月まで琉球大学）の帰国を待ち望んでいるところである。

この分野の現地専門家の養成を我が国がより積極的に行う必要があるのではいかと思われる。

(4) 電気・電子工学科のコンピュータ教育

電気・電子工学科専攻学生がこの学科の提供する教育を受けても、電気系としての専門教育には充分ではないので、電気・電子工学科のなかで、専攻学生に適したコンピュータ教育のカリキュラムの創生も必要かと思われる。

その他のコメント

JKUCATをコンピュータネットワークでつなぐことを提案する。リーズナブルなコストで実現可能であると思うので、是非検討して欲しい。JKUCATで度々話題になっている論文博士の実現にも大いに役に立つものと思うし、既に日本で修学し帰国した職員のフォローアップにも、ま

た、現地とJICA本部との連絡にも有益であると思う。

5-2 研究・生産部門と図書館

(1) 工学部実習場 (Workshop) について

1) 工学部実習場の現状について

現在、JKUCATには、研究・生産部門として、IPI (Institute for Production and Innovation)、SEMU (Scientific Equipment Maintenance Unit)、IEEF (Institute for Environmental and Energy Technology)、IRASAL (Institute for Research in Arid, Semi-Arid and Wastelands) および農場 (Tuition Farm) が組織されている。これらは、いずれも学部から独立した全学的な組織であり、独自の研究および生産活動を行っている。

一方、これらの研究・生産部門とは別に、工学部機械工学科および建築学科には実習場 (Workshop) が設置されており、機械工学科実習場においては、工作機械、自動車、建設機械および溶接、また、建築学科実習場においては、木工および配管などについて、学生の実験・実習を中心とした教育がなされている。さらに、これらの実習場は、学生の教育以外にも工学部と他学科の実習のみならず、学内の各種車両の整備や施設の保守・修繕、さらにIPIおよびSEMUなど他学部・他の研究・生産部門などの生産活動にも全学的な立場から使用されている。

このように、工学部における実習場は、単に工学部学生の実習を行うに留まらず、現在では、JKUCATの教育および研究を支える重要な役割を果たしているのが現状である。しかしながら、現在の実習場の運営は、機材および施設の利用の面からも数多くの問題を抱えており、必ずしも十分に活用がなされていない側面も見受けられる。1993年度には、本格的に学士課程の学生を専門課程に迎え、より充実した実験・実習教育が必要となる現在、実習場をより効率的かつより効果的に活用することが強く望まれている。

2) 工学部実習場の問題点

工学部実習場に関する問題点の多くは、当該学科はもとより、他学部および他の研究・生産部門などが実習場施設を使用することに伴う、実習場および各種機材などの管理・運営上の問題である。しかしながら、他学科および他の研究・生産部門には実習場に相当する独自の施設がない上、技官、特に機械操作に習熟した技官がいないという実情を考慮すれば、実習場のこのような現状は、ある程度やむを得ないことかもしれない。この点については、JKUCATの将来計画の中で真剣に検討する必要があるものと思われる。

以下に機械工学科実習場において現在考えられる主な問題点を列記する。

1. 他学科およびIPI、SEMUなど他の研究・生産部門による施設・機材の使用に伴う工具の紛失や機材の摩耗および損傷が頻発している。さらに、一部機材は、機械工学科以外で管理されているが、このことも業務遂行上の障害となっている。

2. 他学科および他の研究・生産部門など、特に機械工学科以外の実習場使用業務について、業務調整者としての主任技官がいないため、技官の間で業務分担が明確でなく、業務の効率的な遂行が困難となっている。

3. 実習場で必要な各種部品、機材および備品などの購入手続きが煩雑であるため、各種業務に対して即応することが困難な状況である。また、機械工学科と実習場の位置的関係にもよるが、両者の連絡は必ずしも密接に行われていないため、業務の停滞・重複など業務の円滑な遂行が妨げられている。

このように、実習場をより効率的・効果的に使用し、学生の実習教育のみならず教官の研究面においても十分な貢献を果たすためにも、工学部実習場の管理・運営については、抜本的な改革を行う必要があるように思われる。

3) 工学部実習場の改善案と実施方法

2)で述べたように工学部実習場は、ディプロマ課程の学生のみならず、学士課程の学生の実習教育および教官の研究、さらには全学的な施設の保守・修繕など、現在のJKUCATには必要不可欠な施設であるにも拘らず、その管理・運営面では数多くの問題を抱えており、その機能が十分に発揮されていないのが現状である。これは実習場施設および機材が当該学科のみでは管理できない状況にあることも主な要因である。しかし、現実的に他学科および他の研究・生産部門による実習場使用を制限することは、学科内での業務調整が煩雑になるのみならず、全学的な業務に支障をきたす可能性があり、実務上困難であると考えられる。

このような実習場の立場および実習場を取り巻く状況を考えれば、実習場施設およびその能力を最も効果的かつ効率的に活用するためには、実習場を機械工学科から切り離し、各学科から独立した工学部共通の付属施設とすると共に、新しく実習場運営組織を設け、全学的な立場から実習場の施設および機材を効果的かつ効率的に管理・運営していくことが望ましいものと結論される。さらに、このような実習場に関する改善案は、JKUCATの将来を考えれば、当該学科のみではなく、全学的な合意の上で、できるだけ速やかに実行されることが重要である。

以上述べた工学部共通付属施設としての実習場に関する組織図を図-1に示す。詳細は以下のようになる。

- a) 工学部実習場の管理・運営を該当学科から独立させ、工学部実習場として工学部の共通付属施設とする。
- b) 工学部実習場には、実習場責任者として実習場管理者 (Workshop director)を置き、その下に、監督者 (Controller)、資材管理者 (Store)および会計担当者 (Account)を置く。
- c) 実習場管理者は、実習場に関する全ての業務を総轄し、監督者は各実習場の業務を調整し、主任技官 (Chief technician) がこれを担当する。また、資材管理者は、資材や機材および各種部品などの購入およびその管理を行い、資材調達および他の研究・生産部門に関する会計業

務は、会計担当者がその任に当たる。

(4)工学部実習場に関する運用上の具体的な問題については、工学部を中心に議論を行い、全学的な合意が得られるよう努力する。

(2) 農学部附属農場 (Tuition Farm) について

農学部附属農業は、以下の5つの機能を有する。

- ①農学部各学科の実習農場機能
- ②農学部各学科の研究農場機能
- ③農学部各学科への技術移転成果のデモンストレーション機能
- ④栽培された作物・家畜を市場で換金し、収入を大学運営予算の一部へ還元する機能
- ⑤主に食品科学ポストハーベスト学科への材料供給機能

農場へは、青年海外強力隊OBの喜田専門家が派遣され、指導に当たっている。

農場職員のJICA・C/P研修への参加者の増員と、農場に対する機材供与の割当て増の要望があったが、C/B枠と機材予算には限りがあるので、各学部・各学科との間で調整するよう回答した。

(3) IPI (Institute for Production and Innovation)とSEMUE (Scientific Equipment Maintenance)について

供与された機材は、各学科の所属となるため、借用するのが難しいとの現状報告があったが、機材の効率的な利用のためにセクショナリズムを排し、機材の共用化を図るべきであることを提言した。

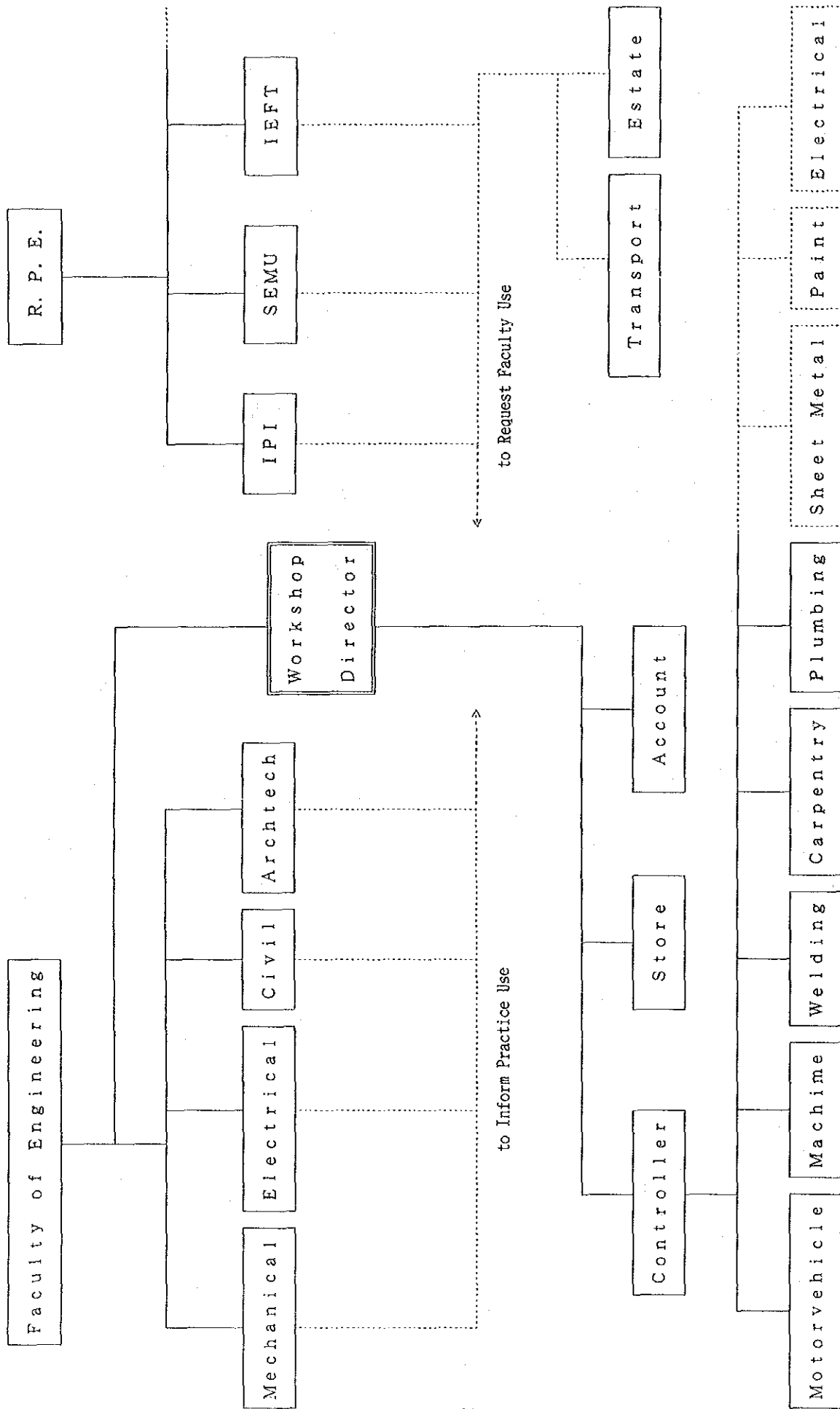
また、機材修理チーム派遣の要望があったので、ケニアNYS技術学院プロジェクトと併せて派遣できるように検討する旨回答した。

(4) 大学図書館 (University Library)

蔵書数2万7千冊、座席数210席は、1日平均700名の利用者があり、現在工事中の拡張が終了すると、4万6千冊が収納可能となり、座席数も600席に拡充される。

図書館への専門家の派遣は行われていない。

図書館職員の日本での研修と、製本機・裁断機などの機材供与の要請があったが、C/P枠と機材予算には限りがあるので、各学部・各学科との間で調整するよう回答した。



New Establishment Workshop

图-1 工学部実習場組織図

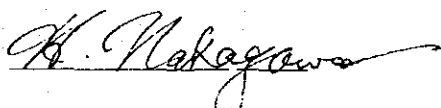
附屬資料① 協議議事錄 (Minutes of the Meeting)

MINUTES OF THE MEETING
BETWEEN
THE JAPANESE CONSULTATION TEAM AND THE AUTHORITIES
CONCERNED OF THE GOVERNMENT OF THE REPUBLIC OF KENYA
ON
THE JAPANESE TECHNICAL COOPERATION FOR THE JOMO KENYATTA
UNIVERSITY COLLEGE OF AGRICULTURE AND TECHNOLOGY
PROJECT (UNDERGRADUATE PROGRAMME)

The Japanese Consultation Team organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and Kenyan Authorities had a series of discussions on the interim evaluation of the Jomo Kenyatta University College of Agriculture and Technology Project (Undergraduate Programme) (hereinafter referred to as "the Project") based on the Record of Discussions signed on 5th April, 1990.

As a result of these discussions, both parties came to an understanding and agreement concerning the matters referred to in the attached document.

Nairobi, 13th August, 1992



Prof. Hiroji Nakagawa
Leader,
Japanese Consultation Team,
JICA



Prof. J. M. Waithaka
Director of Education,
Ministry of Education

ATTACHED DOCUMENT

1. It was observed that the Project has made progress despite some constraints.

This progress includes:

- i) Setting up of physical facilities and equipment
- ii) Staff recruitment
- iii) Staff training
- iv) Completion of B. Sc. syllabuses
- v) Admission of students to undergraduate programmes
- vi) Setting up of production units

2. It was noted that the Team had studied the evaluation reports on the progress of the Project through studies and analysis of the evaluation data and a series of meetings with Japanese experts and Kenyan staff.

Both sides agreed that the Project had made satisfactory progress as a whole since the commencement of the Project in April, 1990.

Through discussions and observation of the Project, both parties agreed that the highest priority of the Japanese Cooperation should be placed in the consolidation of undergraduate programmes in view of the following :

i) Faculty of Science

It was noted that due to the relatively large number of students registered in the Faculty of Science, the students in Agriculture and Engineering were not getting adequate access to some facilities especially computers which are indispensable for basic technological education.

The University authorities would ensure that the students in Agriculture and Engineering have adequate access to facilities by taking the following steps :

- (a) Setting up additional Computer Laboratories through other sources of funding.
- (b) Recruiting an adequate number of technicians to support various programmes.
- (c) Completing the additional Science Laboratories which were under construction.

ii) Staff Recruitment

It was noted that a large number of qualified staff had been recruited, and that it would be necessary to continue recruiting.

It was agreed that steps should be taken to maintain high level of staff morale by retaining incentive-oriented promotion criteria which recognize academic performance.

iii) Staff Training

It was noted that the staff training programme for the Project was effective.

The scholarships provided for the Project by the Government of Japan and the Government of Kenya were being fully utilized.



It was noted that there was a need to expand the training programme. In this respect the following steps were recommended :

- (a) The Government of Kenya would continue allocating funds for staff training.
- (b) The Team would convey a request to the Government of Japan to consider allocating more scholarships for the Project.
- (c) The Kenyan side would strive to obtain additional scholarships for the Project from other sources, e.g., World Bank.
- (d) The Japanese side would strive to increase local training of technical staff to Higher National Diploma.

iv) Equipment

It was noted that the Project had received a large quantity of equipment under current cooperation agreement.

The Team agreed to convey the gratitude of the Kenyan side to the Government of Japan. The Project would continue requiring additional equipment.

The Team further agreed to convey a request for additional equipment to the Government of Japan.

It was further noted that the Project was likely to experience problems of unserviceable equipment and lack of spare parts. It was agreed that the following steps would be taken to solve the problem:

- (a) The Kenyan authorities would ensure the servicing and maintenance of the equipment supplied to the Project.
- (b) The Team would request the Government of Japan to consider the replacement of unserviceable equipment including vehicles and the provision of related spare parts.

v) Research

It was noted with appreciation that the Project has been receiving research funds from both the Government of Kenya and the Government of Japan.

It was agreed that the following steps be taken in order to strengthen research at the Project :

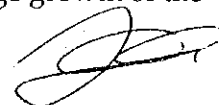
- (a) Continued provision of research funds to the Japanese experts and the Kenyan counterparts by JICA.
- (b) Encouragement of collaboration in research between the Japanese professors and the Kenyan staff with assistance from JICA.
- (c) Vigorous attempts by the Project to establish collaboration with industry and to obtain research funds from other sources.

vi) Production Units

It was noted that the Project has set up production units within various departments in addition to other income generating units.

It was observed that the income from these units would be used to supplement funds provided for academic programmes.

Both parties agreed that a proportion of income generated by production units in a department should be ploughed back to the same unit to encourage growth of the units.



vii) Workshops

It was agreed that engineering workshops needed to be utilized more effectively.

Both sides agreed that the proposed restructuring of the management of the workshops be implemented.

viii) Financial Provision and Management

It was observed that allocation of funds to departments for academic expenses was not adequate. Hence the proportion of the budget going to personal emoluments was too large.

It was noted that the inadequate budget provision was a result of constraints currently beyond the control of the authorities concerned.

The Team requested the Kenyan authorities to secure additional funds for expenditure in academic affairs in addition to personal emoluments.

The Team expressed satisfaction with the transparency exercised in allocating financial resources within the Project.

ix) Postgraduate Training

It was noted that the Project had set up a Board of Postgraduate Studies.

It was observed that the Board would facilitate the provision of postgraduate studies and research and hence make it possible to conduct the academic staff training within the Project.

With a view to encouraging the above, the Team agreed to explore ways and means of accelerating the staff training using the Postgraduate Studies Programmes set up by the Project. This would initially concern selected programmes where staff and facilities are available.

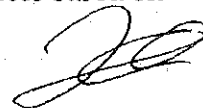
x) Department of Architecture

It was observed that the Department of Architecture needed to be considered for special assistance within the Project in order to develop fully and meet the national demand for training in architecture.

Both sides agreed that :

- (a) The Department of Architecture at the Project would endeavour to establish a Kenyan approach to architectural study and training.
- (b) The Kenyan authorities would request to use the counterpart fund to provide facilities which were not covered by the Project Grant Aid.
- (c) The Department of Architecture needed to be consolidated before it could develop into a faculty.

3. Both parties agreed to make efforts to improve the performance indices based on the 1992 figures (Annex I).



JKUCAT (Undergraduate Programme) in June 1992

ITEM	PRESENT BY DEPARTMENT										JKUCAT
	Hort.	Agric. Eng	Food S.&PT	Civil Eng.	Architec.	Mech. Eng.	Elect. Eng.	Agriculture	Engineering		
	92	92	92	92	92	92	92	92	92	92	92
I. Staff Activities											
1. No. of Researches/An Academic Staff/Year	0.2	0.3	0.5	0.3	0.2	0.2	0	0.4	0.2	0.2	0.3
2. No. of Publications/An Academic Staff/Year	0.2	0.3	0.1	0.3	0.1	0.2	0.1	0.2	0.2	0.2	0.2
3. No. of Participations in Conference, Seminar/An Academic Staff/Year	0.4	0.9	0.5	0.7	0.1	0.2	0.2	0.5	0.3	0.3	0.5
4. No. of Academic Staff who obtained Higher Degree	0	4	1	1	0	0	2	3	3	3	6
II. Student Intake and University Examinations											
1. No. of Students in Degree Programme in Total	165	59	33	51	43	62	59	257	215	472	
2. Pass Rate of University Examinations (average %)	95	96	90	96	100	100	100	95	99	97	
III. Consolidation of University Education and Research											
1. % of Academic Staff deployed to the Established Posts	82	88	93	84	70	53	72	88	70	79	
2. % of Technical Staff deployed to the Established Posts	56	73	75	83	89	39	56	68	67	68	
3. Adequacy of Equipment in Quality and Quantity based on Syllabus	50	35	30	35	20	40	30	39	32	36	
4. Stability of Academic Staff (%)	90	100	100	100	100	100	94	97	99	98	
5. % of Teaching Load by Full-Time JKUCAT Staff	61	90	78	83	52	36	70	77	62	70	
6. Preparation of Syllabus(%)	100	100	100	100	100	100	100	100	100	100	
7. No. of Library Books								4,230	12,600	27,000	
8. No. of Periodicals currently subscribed								19	13	42	
9. No. of Seminars, Conferences organized per Year	3	1	2	5	1	0	0.5	6	6.5	12.5	
10. % of Personal Enrolment to Total Recurrent Budget											68

Note:

Section I : To assess Staff Activities

- I 1. is calculated as Total No. of researches conducted was divided by academic staff present in the Department between 1990 and 1991.
- I 2. is calculated as Total No. of publications was divided by academic staff present in the Department between 1990 and 1991.
- I 3. is calculated as Total No. of participations was divided by academic staff present in the Department between 1990 and 1991.

Section II : To assess Student Affairs

- Section III : To assess the University Education and Research
- III 1. is estimated on the basis to cover the entire syllabus of the degree programme.
- III 2. is estimated as % of No. of Academic Staff who have left and remained.
- III 3. is estimated as % of No. of Academic Staff who have left and remained.
- III 4. is estimated as % of No. of Academic Staff who have left and remained.
- III 5. is expressed as 100% if the syllabus for any given year of study is approved.




ATTENDANCE

JAPANESE CONSULTATION TEAM

1. Prof. NAKAGAWA Hiroji Dean, Faculty of Engineering, Kyoto Univ.
2. Prof. YOMOTA Atsushi Prof., Faculty of Agriculture, Okayama Univ.
3. Prof. KYAN Seiki Prof., Faculty of Engineering, Univ. of the Ryukyus
4. Prof. SUZUKI Yukio Prof., Research Institute for Bioresources, Okayama Univ.
5. Prof. FUKUI Yutaka Prof., Faculty of Engineering, Tottori Univ.
6. Prof. MASUDA Masaharu Prof., Faculty of Agriculture, Okayama Univ.
7. Prof. WAKA Ryoji Associate Prof., Faculty of Engineering, Tottori Univ.
8. Mr. NAKAZAWA Hajime Project Coordinator, JICA

JICA KENYA OFFICE

1. Mr. SHIBATA Shinji Assistant Representative

JAPANESE EXPERTS AT JKUCAT

1. Mr. SUGIYAMA Takahiko Team Leader
2. Prof. IWASA Junkichi Academic Advisor
3. Mr. OSHIYAMA Kazunori Coordinator
4. Dr. TSUNODA Manabu Dept. of Civil Engineering
5. Mr. KOAZE Hiroshi Dept. of Food Science & Postharvest Technology

MINISTRY OF EDUCATION

1. Prof. J. M. WAITHAKA Director of Education
2. Mr. R. M. MBATO Deputy Secretary
3. Mr. W. N. WAMBUGU Under Secretary
4. Mr. J. K. MIGWI Assistant Director of Education
5. Mrs. G. L. KIRIKA Assistant Director of Education (Liaison Office)
6. Mr. J. E. ECHESSA Principal Planning Officer
7. Mr. W. M. MUTHUMBI Education Officer

MINISTRY OF FINANCE

1. Mr. C. I. SHAKABA Under Secretary

JKUCAT

1. Prof. R. W. MICHIEKA Principal
2. Dr. R. W. MUTUA Deputy Principal (R. P. E.)
3. Dr. J. K. YEGO Deputy Principal (Administration)
4. Mr. J. M. MBERIA Deputy Registrar (Academic)
5. Mr. G. C. NJINE Senior Assistant Registrar
6. Prof. S. M. MARANGA Dean, Faculty of Engineering
7. Miss. V. W. NGUMI Chairman, Dept. of Biological Sciences

Ch. N.



附属資料② Project Interim Evaluation Report

**JOMO KENYATTA UNIVERSITY COLLEGE OF
AGRICULTURE AND TECHNOLOGY**

**PROJECT
INTERIM EVALUATION REPORT
1990 - 1992**

**PREPARED FOR THE JICA EVALUATION MISSION
BY THE UNIVERSITY COLLEGE ACADEMIC BOARD**

AUGUST 1992

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PREFACE

The Technical Cooperation Project for the expansion and improvement of Jomo Kenyatta University College of Agriculture and Technology commenced in April 1990. It is due expire in April 1995. The broad objective of the project is to consolidate undergraduate programmes at the University College.

It is desirable that an interim evaluation be made, so as to determine the extent to which the objectives of the project have been achieved so far. It is also important that the interim evaluation be used as a guide to determine the future direction of the project; this should be achieved through discussion and mutual agreement.

This report by the University College Academic Board aims at providing the Japanese Evaluation Mission with relevant information on the state of the project, the achievements of the past two years, and recommendations for the future. Various Departments have prepared additional documents for more detailed discussions with members of the Mission. This report should, therefore be complemented by the departmental evaluation charts.

The University College is in the process of preparing an up-to-date Master Plan for development. It is our hope that in the process of evaluation the Mission will input valuable ideas as pointers to further cooperation in the project.

It is our desire that the forthcoming discussions between the Evaluation Mission and the Kenyan Authorities will lead to deeper understanding for continued cooperation and friendship between the two countries.

JKUCAT

AUGUST 1992

PART I OVERALL REPORT

1.0 OBJECTIVES OF THE PROJECT

The objective of the project is to provide facilities to enable the University College to successfully offer degree level education and training. To this end the project aims at providing physical facilities such as laboratories, lecture rooms and workshops. It also provides equipment, staff development for Kenyan staff, research assistance and expert Japanese personnel.

2.0 GOVERNANCE

2.1 The Chancellor who is also the President of the country is the head of the University College. Below him is a Council with members representing various public interests. The Council has the responsibility of overseeing the management of the College. The Chairman and members of the Council are appointed by the Chancellor.

2.2 The Academic Board comprising of the Principal (Chairman), the Deputy Principals, the Japanese Team Leader, Deans, Chairmen of Department and other academic and administrative heads deliberates and makes decisions on matters affecting the academic and administrative affairs of the University College.

2.3 The day to day affairs of the College are carried out by the Principal who is the accounting officer and the executive head of the institution. He is assisted by three Deputy Principals, Deans and the Japanese Team Leader.

Each Deputy Principal is the head of a division. The Academic Division is in charge of all matters pertaining to students including curriculum, examinations students admission, teaching resources and academic planning. The division also services the Academic Board.

The Administration Division is in charge of staff matters such as recruitment and staff welfare. The division also services the University College Council.

The Research, Planning, Production and Extension Division is in charge of research activities, various income generating units and extension services.

3.0 ACADEMIC PROGRAMMES

3.1 Jomo Kenyatta University College of Agriculture and Technology has three faculties namely, the faculty of Agriculture, the faculty of Engineering and the faculty of Science.

3.2 The faculties have departments as follows:

Faculty of Agriculture

- Department of Agricultural Engineering
- Department of Horticulture
- Department of Food Science and Post Harvest Technology

Faculty of Engineering

- Department of Mechanical Engineering
- Department of Civil Engineering
- Department of Electrical/Electronics Engineering
- Department of Architecture.

Faculty of Science

- Department of Physical Sciences
- Department of Biological Sciences
- Department of Mathematics and Computer Science

3.3 The academic as well as administrative head of each faculty is the Dean. The dean also advises the Principal and the Academic Board on matters concerning staffing and staff development, curriculum development, teaching and research in the faculty.

3.4 Degree programmes

The following degree programmes are offered in the various departments.

- Bachelor of Science in Agricultural Engineering. This is a five year programme offered to KCSE graduates.
- Bachelor of Science in Food Science and Post Harvest Technology. This is a 4 year programme offered to KCSE graduates.
- Bachelor of Science in Horticulture. There are two programmes leading to this degree. One, a three year course is offered to A level candidates. This programme is being phased out. The second, a four year course is offered to KCSE graduates.
- Bachelor of Science in Mechanical Engineering - A five year programme.
- Bachelor of Science in Electrical/Electronics Engineering - A five year programme.
- Bachelor of Science in Civil Engineering - A five year programme
- Bachelor of Architecture - A six year programme.
- Bachelor of Science - A three year programme. and a four year programme

3.5 Diploma Programmes

The faculties of Agriculture and Engineering run 3-year Diploma programmes concurrently with the degree programmes.

The following diplomas are awarded:

Diploma in Agricultural Engineering
Diploma in Food Science and Post Harvest Technology
Diploma in Horticulture
Diploma in Mechanical Engineering
Diploma in Electrical/Electronics Engineering
Diploma in Irrigation and water engineering
Diploma in Construction
Diploma in Architecture

3.6 Preparation of Syllabi

Syllabuses for all these programmes were prepared in consultation with other University institutions, Japanese experts and representatives from Industry within the faculty. Each department has a Chairman whose role is to coordinate all administrative and academic activities in the department.

4.0 RESEARCH ACTIVITIES

Research is carried out by members of the academic staff in collaboration with various institutes and centres that are co-ordinated by the Research Production and Extension division.

4.1 Centre for Biotechnology:

Currently the centre is carrying out studies on rapid multiplication of various horticultural plants of economic importance.

This year the centre established rapid multiplication technique of banana which is an important food crop in Kenya. We could now produce 2 million plants from one explant in eight months if there was enough facilities. This would greatly benefit our farmers who are always short of banana suckers for planting. It would also give the College a substantial revenue.

4.2 Institute for Energy and Environmental Technology:

This institute is currently engaged in research in environmental and energy technology with special emphasis on the effects of degradation on rural folk, biogas, etc. The institute also offers service courses to the faculties of Agriculture and Engineering.

4.3 Institute for Production and Innovation:

This institute is involved in the design and manufacture of simple implements suitable for use in rural areas in Kenya. It also offers facilities for internal attachment and training

4.4 Departmental Research:

Members of staff in various departments are involved in research in their areas of interest. A lot of the research carried out involves cooperation between two or more members of staff and often include the Japanese expert in the department.

5. INSTITUTE FOR HUMAN RESOURCES DEVELOPMENT

The Institute for Human Resources Development offers service courses in such areas as communication and economics to all students. In addition the institute organizes short courses for members of staff and former students.

The Institute is hosting the first postgraduate programme (Master of Science in Entrepreneurship Education) in collaboration with the University of Illinois, USA and the International Labour Organisation.

6. PRODUCTION UNITS

The College has a number of production Units. Some of these units in addition to being income generating have a teaching function. The department of Food Science and Post Harvest Technology for example has a production unit for bread, jam, butter, fruit juices, ham etc. These are sold to the college and to members of staff. The unit is used for demonstration purpose. Other production units are to be found in the Institute of Production and Innovation, Scientific Equipment Maintenance Unit and various staff cafeteria. The Scientific Equipment Maintenance Unit repairs college equipment as well as equipment for outsiders at a fee.

7. PHYSICAL FACILITIES

7.1 JKUCAT stands on 200 hectares of land in Juja, thirty five kilometres from Nairobi. The initial facilities comprised laboratories, workshops, lecture rooms, library, hostels, kitchen, dining hall, student hall and administration block.

Later a pilot farm an irrigation pond and a farm administration building were added.

- 7.2 During the current phase of cooperation, new laboratories and workshops, a new library and a new administration block have been added through Japanese Grant Aid. Also added a new common lecture building, a library and a water supply system.
- 7.3 The Kenya Government has in the meantime constructed new science laboratories, new halls of residence, a kitchen, a new health unit and staff houses.
- 7.4 Construction for some of the these facilities is still in progress.

8. STAFF RECRUITMENT AND TRAINING

- 8.1 The College has embarked on a rapid staff recruitment programme. In the past two years one professor and three (3) associate professors have been recruited. In addition there are 14 senior lecturers, 85 lecturers, 60 assistant lecturers and graduate assistants on the academic staff.

The quality of academic staff has continued to improve. There are 15 members of staff with a doctorate degree while 135 hold a masters degree. The occupancy rate of staff range from 45% in the department of Electrical/Electronic Engineering to 93% in the department of FoodScience and Postharvest Technology.

- 8.2 During the current phase 36 members of staff have been so far trained with Japanese funds with the following breakdown of programmes.

Jica Counterpart training	14
Third Country training	2
Mobusho Scholarships	12
Local Training	4

* Mombusho (non project) 4 *awarded by Universities trainees while in Japan.

9. LIBRARY FACILITIES.

The JKUCAT library is still small by University standards. However it has rapidly increased in stock to the current holding of about 27000 volumes. In addition it subscribes to 50 technical and general journals. The congestion in the sitting area is expected to end when the new library block is completed. The new block has a capacity of 46000 volume and a sitting capacity of 600 readers.

10. EQUIPMENT

Some teaching departments have attained an 80% rate of installation of equipment. In addition some equipment that has been acquired has university-wide use. These include some computers for administration purposes and a research vehicle. About 5 million shillings per department is set aside by JICA annually for the purchase of equipment. Recently the Government of Kenya used 13 million shillings to purchase equipment for the Science laboratories.

11. JAPANESE EXPERTS

During the period under review Japanese experts continued to be posted to the college. Most were long term experts with each department receiving on the average one long term expert. Many short term experts have come and worked on special projects in collaboration with Kenyan counterpart staff.

12. STUDENT INTAKE

JKUCAT currently has 1,700 registered students. Out of these about 1200 are taking degree programmes while the remaining 500 are taking Diploma Programmes.

The following is the breakdown of student number per department/course:

	Degree	Diploma	Total
Department of Agriculture Engineering	59	96	155
Department of Horticulture	165	93	256
Department of Food Science & Post Harvest Technology	39	66	105
Department of Mechanical Engineering	60	79	139
Department of Electrical/Electronics Engineering	59	86	145
Department of Civil Engineering	51	52	103
Department of Architecture	43	48	91
Faculty of Science	706	-	706
	118	520	1702

13. EXAMINATIONS

The examinations for the 1990/91 academic year were finalized in March/April 1992. The pass rates for undergraduate programmes were high. The summary of the pass rates by faculties is as follows:

Agriculture - 95.9%
Engineering - 96.3%
Science - 95.5%
Overall rate 95.54%

It is expected that with continued consolidation of the programmes a high pass rate will be maintained.

PART II DEPARTMENTAL REPORTS

DEPARTMENT OF AGRICULTURAL ENGINEERING

1. STAFF ACTIVITIES

1. Research

In 1991/92 twenty (20) researches were done by nine (9) singly or cooperatively.

80% lecturers actively involved in research.

Final year students projects have been enhanced to make them part of staff research activities.

2. Publications

In 1991/92 eighteen (18) publications were done by ten (10) lecturers.

3. Participation in Seminars, conferences etc.

In 1991/92 nineteen (19) lecturers participated in seminars conferences & workshops organized at regional or national level.

II STUDENTS AND EXAMINATIONS

1. Student intake

Bachelor degree 1st and 2nd years total = 59 students

Diploma 1st year - 3rd years total = 96 students.

Total = 155 students

2. Examinations

(a) Degree courses	b) Diploma
Did rather well	1st Year 92.1% Pass
Degree 96% passed	2nd year 92.9% Pass
One student repeated (4%)	3rd year 100% Pass
No discontinuation	

III CONSOLIDATION OF UNIVERSITY EDUCATION AND RESEARCH

1. Staff recruitment

Presently 70% academic staff deployed to established posts.

Two new lecturers in Power & Machinery
(One to report, on 1st September) Both Assistant Lecturers.

3 TSC were staff employed by University Council (1992)

Plan to recruit one/two new technicians (1992)

2. Equipment

Equipment for teaching 80% adequate in quality & quantity

Extra equipment needed to cater for 4th and 5th year students.

Equipment for laboratory experiments/practicals needed.
Equipments needed for the new Agricultural Engineering building.

3. Stabilization of staff recruited

No academic staff employed by the Council left since 1990
TSC staff - 3 returned to employer

4. Teaching load

90% teaching load by full time staff
Kenyan Staff 90%
Japanese Experts 5%
Part timers 5% (Technical Drawing)
The average teaching load is 7 hours per week/member of staff

5. Preparation syllabus

Bachelor degree syllabus 100% completed (revised June 1992)
BSc revised 1st - 5th year approved by University
BSc 1st-3rd years approved by by 8-4-4 Senate committee by July 1992

Diploma syllabus 100% completed but under review.
Masters degree syllabus 50% completed.

6. **Library book and periodicals**

Good progress in supply.
Hope to improve year by year since number of students has increased. Will appreciate some books for departmental library for use by lecturers.

7. **Seminars Conference, workshops organized**

The department has organised seminars as follow:
1990 - Two seminars (National level)
1991 - three seminars (national level)
1992 - one seminar (International level)

8. **Recruitment budget**

Finance Officer to supply

9. **Staff and student ratio**

BSc + diploma students population 155
Total active members of staff 15
BSc + Diploma lecturer to students ratio 1:10

10 **Staff who left for further study and returned with higher degrees**

One returned from Japan with PhD (1991)
Four returned from UoN with MSc. (1990/91)
One returned from Canada with MSc. (1990)
Seven on study leave for PhD in Japan and elsewhere

One expected to go to Britain for MSc. (1992)
One expected to go to UoN for PhD (1992)
One expected to go to Canada for PhD (1992)

IV **ADMINISTRATION AND MANAGEMENT OF THE DEPARTMENT**

Aim to have all lecturers actively involved in research.
Aim to train staff to attain good professional standard.
Aim to recruit qualified staff for teaching and research.
Aim to attaining high efficiency in the Department.
Aim to offer our students the best education possible.
We greatly appreciate the presence of Japanes experts in the department.

V **REMARKS**

Great appreciation to the Japanese government for the great help received. We hope the cooperation will grow stronger.

DEPARTMENT OF FOOD SCIENCE & POST HARVEST TECHNOLOGY

1. STAFF ACTIVITIES

1. Research

After Prof. Y. Suzuki and Prof. S. Nakajima conducted a workshop in July/August 1991, three (3) research projects were proposed and are being funded by JICA. One other research project is continuing (funded) by IFPRI. More research proposals are expected soon.

2. Publications

The department published the proceedings of a Seminar on Postharvest Management of Food Crops.

3. Participation in seminars, conferences etc.

There is a high interest with staff members to participate in seminars. Increased participation is expected when the current research projects are completed. This will require some financing.

II STUDENTS AND EXAMINATIONS

1. Student intake

The numbers of students admitted to the bachelor degree programme were:

1990 - 23 some have discontinued.

1991 - 23

Admission to diploma programme has remained at 20.

2. Examinations

Students performance in the examinations for the courses offered in first year of the degree programme was good. The pass rate was 90%.

III CONSOLIDATION OF UNIVERSITY EDUCATION AND RESEARCH

1. Staff recruitment

One senior lecturer has been recruited and is expected to join us in August. Two teaching assistants joined in July 1992.

As the BSc. students will be expected to be taught fully by the

departmental staff when they enter the 3rd year, there will be need to recruit more staff.

2. Equipment

For the last two years, we have concentrated on equipment for the workshops. New laboratories have now been completed and it is necessary to equip them adequately for research and teaching purposes. New postharvest and microbiology laboratory will be completed soon and needs more equipment. There is need to have a provision for spare parts and replacement of old outdated machinery.

3. Stabilization of staff recruited

Mobility is negligible.

4. Teaching Load

The current teaching load is normal. However, next year the teaching load is expected to be more than two (2) units per lecturer per semester. This is because many staff members will be on study leave. The department would like to request for the assistance with Japanese experts to teach when staff is on training.

5. Preparation Syllabus

The syllabus for 1st, 2nd and 3rd year BSc. students has been approved by the senate. The 4th year syllabus is expected to be approved soon. A review of the complete syllabus will be done after the first group of students graduate.

6. Library books and periodicals

There is need to increase the number of periodicals and collection of back numbers.

7. Seminars, conferences, workshops organized

The department is conducting monthly seminars where members of staff discuss current topics in Food Science & Post Harvest Technology.

A quality control seminar is planned to be held in January/February 1993, for food quality controllers from industries in Kenya.

8. Staff and student ratio

Staff and student ratio is expected to be *1:24.4 by next year.

*Note that the number of students includes both diploma and degree

9. Staff who left for further study and returned with higher degrees

In April, 1991, Dr. G. M. Kenji returned from Japan after completion of an MSc. and Ph.D degree.

The staff members who are currently persuing degree courses are as follows:

- C. Kiiyukia - Hiroshima University; to complete Ph.D in 1993
- F. Mathooko - Okayama University; started Ph.D in 1992
- M. Mwasaru - Malasia Agric. University - started Ph.D in 1992

IV ADMINISTRATION AND MANAGEMENT OF THE DEPARTMENT

The department has enjoyed good relationship with the College administration and Japanese experts which has made it easier to manage it.

V REMARKS

The department would request for:

1. dispatch of experts to teach while staff members are on training
2. provision of assistance in purchasing of teaching materials
3. financial support to attend conferences
4. financial support to organize seminars
5. more Monbusho and Third Country training scholarships

DEPARTMENT OF HORTICULTURE

1. STAFF ACTIVITIES

1. Research

Number of staff engaged in active research meant for publication has increased from 30% in Many to 50% by July 1992. However, all members of staff are involved in research with students where they supervise their departmental projects. With the recent implementation of the college's Promotion Scheme which requires publication, staff have taken research more seriously than ever before.

2. Publications

A few members of staff have or are in the process of writing papers for publication in reputable journals. Generally, staff have data from research work already completed or about to be completed. There were at least two publications in journals and four in proceedings by members of staff. A college owned publication, should however speed up publication.

3. Participation in Seminars, conferences etc.

Generally, staff are encouraged and very eager to participate in seminars, conferences, workshops, and symposiums when funds are available. This is especially so with more senior members of the department (Lecturer and above). The percentage of staff engaged in research is on sharp increase this year as evidenced by the number of proposals submitted.

II Students and Examinations

1. Student intake

For effective teaching and student participation in acquisition of the necessary skills, students intake should be kept to the number planned according to the available facilities. The 1991 BSc. class does not reflect this trend. However, this is so due to repeat cases which increased the number beyond planned limits. In future, this element should be kept in mind while considering new intakes.

2. Examinations

Almost 100% students enrolled for exams obtain pass grades. A policy to be formulated at the departmental level soon will require that examination reflects full coverage of the course description in the syllabus. As a college of Technology, basic sciences should also be seen to support strongly applied areas. Limited funds that would support acquisition of the necessary teaching and test materials could easily become a serious bottle-neck to such a programme.

III Consolidation of University education and research

1. Staff recruitment

The Department has clearly identified and quantified the necessary staff needs for each area of teaching and non-teaching. Recruitment of staff therefore is now controlled by this need. However, previous recruitment did not have a clear plan culminating in over-recruitment in certain areas eg. Genetics and Plant Breeding. At the moment, where recruitment of staff at senior level is not possible, young trainable persons are recruited to fill such positions. The Department has planned to recruit at least one graduate from its own students per year for staff development.

2. Equipment

The department has so far acquired ample equipment for quality teaching and research. However, more equipment is necessary in some areas.

3. Stabilization of staff recruited

Promotion and personal emoluments are the major stabilizing factors for staff in any establishment. Also, training needs of such staff especially in the case where most staff are below PhD degree level. With the government's restructuring of the University terms and conditions of service, this is bound to stabilize the staff recruited. Due to limited staff that results in overloading and hence less time allocation for research, the college should not be too strict on promotion matters when they arise.

4. Teaching Load

There are few qualified staff and limited establishments for each category of teaching staff e.g lecturers, senior lecturers, associate professors. There are many specialized areas where the department offers course work and teaching services to other departments. This results in overloading in some areas. More than two units per staff is considered overloading due to the nature of courses offered by the Department.

5. Preparation Syllabus

Preparation of the syllabus for the BSc. (8-4-4) program has proceeded quite well. So far, the Senate has approved upto the 3rd year courses. However, in future, revision will be necessary.

6. Library books and periodicals

Great improvement has been made to have books available for students through JICA donations and the Bookshop. However, reference books particularly those from Britain and America though costly need to be stocked. Periodicals are greatly lacking mainly due to financial constraints. There is need to have periodicals of Plant Physiology, Agronomy, American Journal for Hort. Sci. etc. Donation by JICA is serving a very useful purpose to students and staff. The Department has recently made a comprehensive list of books which could be acquired through JICA.

7. Seminars, conferences, workshops organized

A seminar is organized during the current budget year which we anticipate to attract a large population of the Agricultural and Horticultural scholars, scientists, industrialists and farmers.

Seminars organized to evaluate student research projects were also successfully conducted within the department. Departmental staff seminars are planned to take place during the 2nd semester beginning August 1992 where staff will present proposals, progress and/or concluded research work.

8. Staff and student ratio

Current staff and student ratio of 1:9 for BSc. students looks quite good considering that the recommended one is 1:12. However, due to service courses and the continuing diploma programme, the ratio is about 1:15. This also does not reflect some areas which lack staff at the moment like landscape design, animal science, soil microbiology and agricultural entomology.

9. Staff who left for further study and returned with high degrees

None

IV Administration and Management of the department

So far, there is well co-ordinated academic and administrative management. However, the only constraints are in the acquisition of teaching material in time and allocation of sufficient funds for teaching material and transport services. also, due to the size of the Department in terms of staff, students and equipment, there is need for a departmental clerk/recorder to assist with record keeping and also to facilitate with efficient coordination of acquisitions of Departmental materials and their use. With the recruitment of more Technicians, full usage of Labs and equipment will be achieved.

V Remarks

1. Increase staff establishments of academic grade particularly lecturer and above
2. Increase training opportunities for staff to PhD degree in Japan or any other country.
3. Extend cooperation between JICA and JKUCAT.

DEPARTMENT OF CIVIL ENGINEERING

1. STAFF ACTIVITIES

1. Research

Five research programmes have been completed in the period April, 1990 - June, 1990. Three of these researches have been under the JICA research fund programme.

Final year student projects have been strengthened to be part of staff research activities. Six such research are on-going while six others were finished in the 1990/91 academic year.

2. Publications

In the two year period between April, 1990 and June, 1990, a total of nine (9) publications have been done. Of these five (5) were at the National level while two (2) were at East Africa level. Two (2) were performed at continental (Africa) level.

3. Participation in Seminars, Conferences etc.

Many staff have attended and presented papers in National, Regional and Continental seminars organised by WEDC, KEWI, KENGO, UNEP, KSAE, AND WFEO. On-going departmental seminars are a great inspiration. Eleven seminars have taken place. Of these, eight (8) were from departmental staff while three (3) were from invited speakers from KU, UON and Kyoto University.

II STUDENTS AND EXAMINATIONS

1. Student Intake

	B.Sc. IN CIVIL ENGINEERING	DIPLOMA IN IRRIGATION & WATER ENGINEERING	TOTAL
1st year	24	24	48
2nd year	27	14	41
3rd year	-	18	18
TOTAL	51	56	107

2. Examinations

In 1990/91 Degree examinations, of the 28 students who sat for examinations one student entered private company while all the others passed.

III CONSOLIDATION OF UNIVERSITY

1. Staff Recruitment

There are currently 21 members of staff. Three (3) of these were absorbed in April 1992 from TSC. Nine (9) are on study leave, four (4) in Japan and Five (5) at University of Nairobi. Senior staff are proving hard to get. After three advertisements, there is no senior lecturer in the department. Junior staff (lecturer and below) are available. These should be employed and developed through Ph.D training.

2. Equipment

B.Sc. 1st and 2nd year equipment has no problem and all equipment is available currently in the department. 3rd, 4th and 5th year equipment is not enough.

3. Stabilization of staff recruited

Up to now, there is almost no problem in retaining staff. With the economy as it is, care need to be taken as staff may go to the industry-both private and public for better pay. Proper housing, salary, commuting and other benefits should be reviewed.

4. Teaching Load

The teaching load now is very heavy. Service lectures are very many, especially to the diploma in construction offered by the department of Architecture. Other services are offered to Horticulture, Agricultural Engineering and Food Science departments especially on Technical Drawing, Surveying and Public Health Engineering.

5. Preparation syllabus

The degree syllabus has been approved by the Senate 8-4-4 syllabus sub-committee up to third year. Fourth and fifth year syllabus is ready for the Senate syllabus sub-committee. The diploma syllabus is under review.

6. **Library Books and Periodicals**

There are not many technical books in the library. Recent and appropriate periodicals both regional and international should be increased.

7. **Seminars, Conferences, Workshops Organized**

The department organised a national seminar on "Technology solutions for Kenya in the year 2000" in March 1991 (13-14). This was very well attended and the proceedings were published in a 568 page document. Internal departmental seminars have also been frequent, at least one every month.

8. **Recurrent Budget**

The recurrent departmental budget is currently very tight. With an annual allocation of KSh.200,000 for teaching materials, only the very well essential teaching materials can be requisitioned. Staff recruitment has been slow, especially for senior staff.

9. **Staff and student ratio**

The prevailing staff to student ratio is currently 1:11. Nine of the staff members are on study leave. With the slow recruitment, 1st semester of 1992/93 will push the ratio to say 1:15.

10. **Staff who left for further study and returning with higher degrees**

One member of staff has finished an M.Sc. from Nairobi University. Three have also finished M.Sc. from Nairobi although they have not been awarded the degrees. One has finished an M.Sc. in Japan but has proceeded on his Ph.D.

IV **ADMINISTRATION AND MANAGEMENT OF THE DEPARTMENT**

The Chairman's office is over loaded with teaching and administrative work. Without a secretary, this over loading is unbearable. As a minimum, a department should have a secretary copy typist and a messenger.

V **REMARKS**

19 members require Ph.D training. This figure forms 90% of the department staff. The average one Ph.D scholarship/year will take 19 years to train staff! more mombusho (MOE) and other scholarships are urgently required.

DEPARTMENT OF ELECTRICAL/ELECTRONICS

I STAFF ACTIVITIES

1. Research

Two (2) Research proposals accepted by JICA. These are:

- (a) a study of metal/semi-conductor activity
- (b) computer aided central engineering education

2. Publications

Members of staff have had their papers published in a number of conference reports. The following papers were published in the report of seminar on Technological solutions for economic development in Kenya.

- (i) The role of telecommunication in economic development
- (ii) Reflections on the current trends in telecommunication
- (iii) Detection of faults in dynamic systems
- (iv) Engineering method in economic development
- (v) Magnetic properties of Bent Amorphous Ribbons
- (vi) Realization of floating inductance using three operational

3. Participation in seminars, conferences etc.

In 1990 one member of staff participated in a seminar while in 1991, 6 members of staff participated. In 1992/93, 14 members of staff participated.

II STUDENTS AND EXAMINATIONS

1. Student intake

In 1990/91, the department registered 31 students including 27 males and 4 females. The 1991/92 first year intake had 24 males and 5 females. This brought a total of 51 males and 9 females currently registered in the department.

2. Examinations

Examinations are conducted once every semester. There are 2 semesters in the year. In addition students are assessed on the basis of continuous assessment tests. Students who fail in 4 units are not allowed to proceed to the following year.

III CONSOLIDATION OF UNIVERSITY EDUCATION AND RESEARCH

1. Staff recruitment

The department has recruited the following categories of academic staff.

1990	Senior lecturers	2
	Lecturers	4
	Teaching Assistants	5
1991	Lecturer	2
	Assistant Lecturer	1
	Assistant Lecturer	0
	Teaching Assistant	0
1992	S. Lecturer	1
	Teaching Assistant	2

Currently the department has 2 senior lecturers, 7 lecturers, 6 assistant lecturers and 3 teaching assistants.

2. Equipment

The following equipment has been acquired.

1990	GPIB interface Board, cable, D-C Ammeters & Voltmeters
1991	Electrical Machines model, 3-phase, 1-phase induction voltage regulator, P-C.B. T.V.S. Video deck, A/D and D/A converter, GPIB Interface, Board, Harvard Computers, mouse and T-switch, digitizer, Auto-CAD.

3. Stabilization of staff recruited

Nearly all staff recruited are still in the department. Only one member of staff left in 1990.

4. Teaching load

1990	- 74% Fulltime Kenyan staff
	- 26% Parttime Kenyan staff
1991	- 63% Fulltime Kenyan staff
	- 23% Parttime Kenyan staff
	- 13% Japanese Expert staff

The teaching load for the staff is quite heavy. On the average a member of staff teaches hours per week.

5. Preparation syllabus

- 1990 - First year B.Sc. approved by senate
- 1991 - Second year B.Sc. approved by senate
- 1992 - Third year B.Sc. approved by senate

6. Library books and periodicals

The Library acquired a significant number of books in 1991. In addition 3 journals were subscribed for in 1992.

7. Seminars, conferences, workshops organized

In 1991 the department organized a seminar entitled "First Annual Electrical Enngineering Seminar"
In 1992 the department organized a seminar entitled "Second Annual Electrical Enngineering Seminar"

8. Staff and student ratio

The staff/student ratio deteriorated from 1:6.9 in 1990/91 academic year to 1:9.4 in 1991/92 academic year. These ratios include the diploma students.

9. Staff who left for further study and returned with higher degrees

Since 1990 one member of staff has returned every year with a higher degree.

IV ADMINISTRATION AND MANAGEMENT OF THE DEPARTMENT

We have had only 2 senior lecturers, 7 lecturers, 7 assistant lecturers and no professors. Therefore, the administration of the Department has been rather difficult due to lack of senior staff. All the administration is in the hands of the head of the department. He is assisted by some members of staff who take care of areas such as timetables, examinations etc.

V REMARKS

We look forward to recruiting senior staff in the professorial positions to enhance our administration.

DEPARTMENT OF MECHANICAL ENGINEERING

1. STAFF ACTIVITIES

1. Research

The department carried out 3 researches involving 5 members of staff in 1990/91. In 1991/92 academic year 6 laboratory apparatus were fabricated by two members of the academic staff. This is an on going exercise in the department.

2. Publication

2 papers/2 staff members/september, 1991 and may 1992

In September 1991 and may 1992 members of staff in the department published 2 papers.

3. Participation in seminars, conferences etc.

One staff member attended a seminar in August 1991. Two technical staff attended technical training.

II. STUDENTS AND EXAMINATIONS

1. Student intake

Total number of students is 132 distributed as follows:-

BSc. 1st year = 26

BSc. 2nd year = 31

Diploma 1st year = 23

Diploma 2nd year = 29

Diploma 3rd year = 23

2. Examinations

B.Sc. in 1990/91 academic year - 100% pass rate

Diploma 1 1990/91 academic year - $22/27 \times 100\% = 81.48\%$

Diploma 2 1990/91 academic year - $23/28 \times 100\% = 82.14\%$

Diploma 3 1990/91 academic year - $19/19 \times 100\% = 100\%$

III CONSOLIDATION OF UNIVERSITY EDUCATION AND RESEARCH

1. Staff recruitment

The department has 1 associate professor, 1 senior lecturer, 10 lecturers, 1 assistant lecturer and 2 teaching assistants. One has ~~AND~~ 2 members of ~~staff have Ph.Ds~~ 9 have masters degree and 5 have bachelors degree. 53.6% of established posts are occupied.

2. Equipment

Equipment available represents about 8% of what is required for the 5 year programme.

3. Stabilization of staff recruited

One staff member left.

4. Teaching load

36% of the teaching load is by full time members of staff. The remaining 64% is accounted for by Kenya part-time lecturers.

5. Preparation syllabus

All syllabuses in the department are 100% complete.

6. Library books and periodicals

The library does not subscribe to any relevant periodicals for the department.

7. Seminars, conferences, workshops organized

None but we expect to mount the following

- Seminar on creativity and entrepreneurial engineering
- short courses for engineering graduates and engineers
- workshop on pollution control in motor vehicles
- workshop on engineering education
- Engineering education and job opportunities for women:
Practical approach for Kenya.

8. Staff and student ratio

1:11 excluding staff members on study leave

1:8:8 taking into account staff on study leave

9. Staff who left for further study and returned with higher degrees

No member of staff has left for further studies and come back with higher degrees. However 3 members of staff are currently abroad for further training.

IV ADMINISTRATION AND MANAGEMENT OF DEPARTMENT

2 senior staff are in ~~position~~. There are 8 established posts. All academic and administrative.

V REMARKS

There is very little meaningful engineering research which can be done without equipment.

The administrative element in departments is taking a heavy toll of chairmen's time at the expense of research.

No recent periodicals in the library.

DEPARTMENT OF ARCHITECTURE.

I. Staff activities

1. Research

The research objective of the department include the development and transfer of appropriate material and Technology the evolvement of appropriate design solutions especially in low-income housing and improving the quality of life through environment design. Research carried out since 1990 are:

- i) Traditional Architecture in Kenya.
- ii) Studies on the structural use of light weight reinforced concrete with pumice as coarse aggregate.

2. Publications

So far there has been no publications from staff members within the department.

3. Participation in seminars, conferences etc.

One member of staff has participated in seminar.

II. STUDENTS AND EXAMINATIONS.

1. Students intake

Degree course 43

23 males and 1 female are registered in the department as first year. ~~There are 19~~ males and 2 females registered as second year students in the department. One student dropped out in the transition between first and second year.

2. Examinations

Examinations are done every semester. The pass rate for the degree students is 100%.

II. CONSOLIDATION OF UNIVERSITY EDUCATION AND RESEARCH

1. Staff recruitment

The department has recruited qualified staff in various specialized areas one member of staff has a Ph.D. while most of the other members of staff have a Master's degree. There is one Senior lecturer, 10 Lecturers, 5 Assistant Lecturers, 3 Tutorial fellows and 3 Japanese experts in the department.

2. Equipment

About 70% of the equipment needed for teaching in the department has been acquired.

3. Stabilization of staff recruited

All the staff recruited since 1990 are still in the department.

4. Teaching Load

On the average each member of staff teaches for _____ hours. 77% of the teaching time for first years is by Kenya full time staff. While the corresponding figures for second and third years are 57% and 86% respectively. The rest of the teaching is by Japanese experts part time staff. There is need to reduce part time staff.

5. Preparation syllabus.

All the syllabus have now been successfully completed.

6. Library books and periodicals

In 1991/92, 1,114 relevant books were in the library. In 1992/93 the figure shot up to 1500.

7. Seminars, conferences, workshops

The department organized one seminar and one Architectural Exhibitions. In 1990/91 Prof. Kato organised a seminar entitled 'Architectural expression'. In 1992 the department organized an exhibition.

9. Staff and student ratio

The staff/student ratio is 1.10 at present. If however one includes the 4 staff members who are on leave the ratio improves to

1.8. There is however considerable foreign and part time component 23% of first year teaching time 43% of second year and 14% of third year is accounted for by foreigners or part time teachers.

10. Staff who left for further study and returned with higher degrees

No member of staff has left and returned with higher degree during the period.

IV Administration and management of the department

The administration of the department is in the hands of the Chairman of the department. He is assisted by various committees such as the time table committee, examinations committee etc.

DEPARTMENT OF BIOLOGICAL SCIENCES

1. STAFF ACTIVITIES

1. Research

Four (4) individual research programmes are currently in progress. (1990 - present)

1. Avian ecology in Kenya
2. Molecular Karyotypes of Leishmania species
3. A study of medical plants
4. A study of livestock parasites

The above listed researches have been part of higher degree programmes for members of staff.

2. Publications

Four (4) publications have been produced (1990 - 1992)

3. Participation in Seminars, Conferences etc.

Four (4) ~~members~~ of staff have participated and/or attended seminars (1990 - 1992)

II Students and Examinations

1. Student intake

1990/1991 - 97 students registered in the department
1991/1992 - 46 students registered in the department

In 1990/91 academic year 90 males and 7 females registered in the department of whom 85 males and 6 females continued to the following year. In 1991/92 academic year 47 males and 5 females registered as first years. This brought a total of 132 males and 11 females registered in the department currently.

2. Examinations: The department has examined the following

(a) 1990/91

- Departmental units - first year - 6 units)
- service course - Diploma + Degree - 11 units) Total 17 units
(Horticulture/Food Science & Post Harvest Technology)

(b) 1991/92

- Departmental Units First year - 6 units)
Second year - 12 units) Total 29 units
- Service Course units Diploma/Degree - 11 units)

III Consolidation of University Education and Research

1. Staff recruitment

The department has 1 senior lecturer, 6 lecturers, 5 assistant lecturers and 7 teaching assistants. In addition it has 5 part-time lecturers. Two members of staff has a Ph.D while all the others except 4 have at least a masters degree.

Year	Staff in the Department			
	Academic	Technical	Support Staff	Casual Staff
1990	9	1	1	1
1991	8	5	2	5
1992	19	5	2	5

2. Equipment

The department has one laboratory which is used for teaching practicals in Botany, Zoology and Biochemistry. One other laboratory is under construction. The department has acquired basic biology equipment for teaching for example microscopes, spectrophotometers, centrifuges, oven/incubators, refrigerators etc. These equipment is however in small numbers and the students have to share them while working in large numbers in the practical classes. The department needs more.

3. Stabilization of staff recruited

The department has recruited academic staff and technical staff with the three sections in the department being considered namely Botany section, Zoology section and Biochemistry section. Within the three sections the staff numbers have increased steadily as follows:

	1990		1992		No. of Staff who left the Department
	Academic	Technical	Academic	Technical	
Botany Section	4	0	8	2	1 academic staff 1991
Zoology Section	4	1	8	2	1 academic staff 1992
Biochemistry Section	1	0	3	0	-

NB Technical Staff in the three sections have been shortlisted for interviews soon.

4. Teaching Load

1990 Average teaching load was 11 hrs/week for every academic staff. The department recruited 3 part time lecturers from other Universities to teach at 6 hrs/week.

1991 Average teaching load was 11 hrs/week and the department recruited 3 part time lecturers.

1992 Average teaching load is 6 hrs/week and the department recruited 5 part time lecturers.

NB More staff will be recruited into the department so that no more hiring of part time lecturers will be required.

5. Preparation syllabus

1989 - 1990 A syllabus for Botany, Zoology and biochemistry was drafted.

1990 - 1991 reviews of the syllabus were made at departmental level and approval made by 8-4-4 committee and senate.

1992 - Further reviews and discussions at the department, faculty and senate.

6. Library books and periodicals

Library books have increased from 129 titles in the areas of botany, zoology and biochemistry in 1987 to a total of 371 titles in 1992. Periodicals in Biological Sciences have been ordered and more book titles.

7. Seminars, conferences, workshops organized

Due to lack of funds the department has not organized any seminars. This unhealthy situation will be corrected as soon as funds are available. However staff have attended and participated in seminars organized by other departments.

8. Staff and student ratio

The staff/student ratio has improved from 1:10 in 1990/91 academic year to healthy 1:7 in 1991/92 academic year. However about 25% of the staff are part-timers and there is need to reduce this reliance on them.

9. Staff who left for further study and returned with higher degrees

A number of members of staff have left for further studies and completed as follows:

Dr. V.C.S. Nyambati - PhD (Biochemistry) 1991 Kenyatta University
Mrs. E. Omino - MSc (Botany), 1991 Nairobi University

Mrs. H. Kutima - MSc (Zoology), 1991 Kenyatta University
Mr. E. Mwangi - PhD (Zoology), in progress - Nairobi University

Other staff are expected to leave for higher degrees in the year 1992/93.

IV Administration and management of the department

The department is managed under a Chairman of department who coordinates all academic and administrative matters - V. W. Ngumi.

Various committees have been appointed with coordinators who are academic staff members:

1. Examination officer (J.M. Mberia)
2. Timetable coordinator (P. Mbogho)
3. Secretary/social affairs (V.C.S. Nyambati)
4. Seminars coordinator (H. Kutima)
5. Student academic advisors
D. B. Mutoro/E.Omino - 1st year
J.M. Mberia/P. Mbogho/V. Nyambati - 2nd year
6. Student academic clubs/societies coordinator (E. Mwangi)
7. Senior technician - in charge (J.D. N. Gachanja)

V Remarks

The department of Biological Sciences is a very young department (3 years). Intentions are to expand within the three sections of Botany, Zoology and Biochemistry both in staff and physical facilities. The department would benefit from three (3) more laboratories that is in botany, zoology and biochemistry with basic equipment. The department would also need two large rooms to convert into a herbarium and a zoological museum. Japanese experts in Botany, Zoology and Biochemistry would help boost the area of research in the department.

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

1. STAFF ACTIVITIES

1. Research

Individual effort has been realised on various research projects but this has been hampered by limited research funds. Two researches were carried out by members of staff in 1990/91 academic year. One led to the award of a postgraduate diploma while the other led the award of a masters degrees.

2. Publications

A few members of staff have either published books or are preparing a manuscript for publication.

3. Participation in seminars, conferences etc.

Outside attendance of conferences has been difficult due to limited funds but we have managed to send staff to African Mathematics Union ~~conference~~ held in Kenya. Some staff members will ~~be~~ presenting papers at Kenya Mathematical Society conference in August. Five seminars have been held at Faculty and/or departmental level. One computer training workshop was held in 1991 year.

II STUDENTS AND EXAMINATIONS

1. Student Intake

Students are admitted once every academic year and registered under the Faculty of Science. They start off with three subjects and may choose to major in Mathematics in the subsequent years of their course. Service courses are offered to other departments. The 1990/91 intake has 414 males and 28 females. Out of these 401 males and 26 females continued into second year. The 1991/92 academic year had a fresh intake of 61 males and 6 females making a total of 67. When transfers are taken into account this leaves the department with 632 males and 38 females bringing a total of 670 students in 1991/92.

2. Examinations

They are conducted on a regular semester basis. Those who do not qualify either sit for a supplementary or discontinued. Continuous assessment is done on the basis of at least three CATS.

III CONSOLIDATION OF UNIVERSITY EDUCATION AND RESEARCH

1. Staff recruitment

It is still a young department but recently eight lecturers were recruited. The establishment is yet to be filled. Currently the department has one senior lecturer, 5 lecturers, 5 assistant lecturers, one tutorial fellow and 5 teaching assistants. One member of staff has a Ph.D while all the others except two have at least a masters degree.

2. Equipment

We have about 20 computers which due to the workload is about 20% effective. To achieve a fair ratio of computer to students the department would need at least 2 additional computers, laboratories each having 40 micro-computers would be needed.

3. Stabilization of staff recruited

As much as possible the staff retention is taken serious by promoting those who meet the stipulated requirements for promotion. We however rely heavily on part-time staff who form nearly 60% of the total work force in the department.

4. Teaching load

Too heavy! We have on average 61 units and only about 14 full time lecturers. Every lecturer teaches a minimum of 3 units or 9 hours per week.

5. Preparation syllabus

This is an on-going process with about 70% of the syllabus having been approved.

6. Library books and periodicals

This is usually organized by the library. Reference books and books to be brought by students from the bookshop have been made available.

7. Seminars, conferences, workshops organized

African Mathematics Congress, Kenya Mathematics Society Conference are attended by staff members who are sponsored by the college. 5 seminars have been organised by Faculty or Science and Mathematics Department. 1 workshop was organized by the department.

8. Staff and student ratio

Staff/student ratio is quite high. We have a staff/student ratio of about 1:100. Attempt to solve the problem have resulted in high dependence on part time lecturers. Part time and foreigners account for about 40% of total teaching time.

9. Staff who left for further study and returned with high degrees

To date there is no staff member who has left for further education and come back with higher degrees. However a number of staff have left for higher degrees.

IV ADMINISTRATION AND MANAGEMENT OF THE DEPARTMENT

The Chairman heads the department assisted by members of staff in various sub-committees such as time-table committee, etc. The department has support staff i.e. 1 secretary, 1 messenger and 1 technician.

V REMARKS

The department requires at least two additional computer laboratories each having 40 microcomputers in order to cope with the needs of both its students and of other departments.

The laboratory space is planned in the GOK funded science complex while ~~computers~~ have been requested for under the University Investment Project (World Bank Fund).

DEPARTMENT OF PHYSICAL SCIENCE

1. STAFF ACTIVITIES

1. Research

Some four members of staff are on programmes of obtaining higher degrees through research among coursework and examinations. Prof. F. Kaberia of the department has done some research on the determination of conformational energy in a gaseous medium.

2. Publications

F. Kaberia, determination of conformational energy in a gaseous medium using a combination of GLC retention time and GLC head-space analysis method. J. Biochemphysics 1, 27 (1991). Mr. George Thuku has published a paper entitled "Chemistry for Home Economics" study material with Nairobi University Press.

3. Participation in seminars, conferences etc.

Prof. Ndombi and Prof. Kaberia involved in the international planning conference on establishing sub-regional centres for Master of Science degree programme in insect science in Africa.

II. STUDENTS AND EXAMINATIONS.

1. Students intake.

Current dept. has about 600 students in all the years.

2. Examinations.

Examinations are done on semester basis. Each academic year has two semesters and 2 examinations. In addition students are assessed on the basis of at least 3 continuous assessment tests per year students must pass a minimum number of units before they are allowed to proceed to the next year. Anyone failing in 4 units is not allowed to proceed. The failure rate is low.

III. CONSOLIDATION OF UNIVERSITY EDUCATION AND RESEARCH.

1. Staff recruitment.

This is going on. There is a problem in getting academic staff in Physics but staff to teach chemistry are readily available for recruitment. The department has 3 members of staff with Ph.D degrees and 18 who have at least a Master's degree. There are 7 members of staff with only a Bachelor's degree. The department has 1 Professor, 1 Associate Professor 1 Senior Lecturer 8 Lecturers, 10 Assistant Lecturers and 7 teaching assistants.

2. Equipment

The departments laboratories are poorly equipped for both research and teaching. This is hampering research work in the department. Efforts are continuing to acquire more equipment.

3. Stabilization of staff recruited

It is too early to comment on this as this is a new department . However out of of the 20 staff who have been recruited since 1990 none has left the department. It is hoped that with improved terms of service the department will be able to retain its staff for considerably long periods of time.

4. Teaching load

On average member of staff is teaching hours a week. This is quite heavy as it leaves the member of staff little time for research and other academic activities.

5. Preparation syllabus

B.Sc. three year programme syllabus is ready but B.Sc. 8-4-4 in progress. The latter is a 4 year programme for students who have passed the Kenya certificate of secondary Education.

6. Library books and periodicals

There are insufficient but the department is happy with on going JICA assistance.

7. Seminars, conferences, workshop organized

A workshop on B.Sc. 8-4-4 syllabus had been organised from 25th June 1993 - 1st July 1992 in Nyeri. Members of staff have participated in seminars organized by other departments

8. Staff and student ratio

Staff - student ration isx about 1:30 currently. This is quite worrying.

9. Staff who left for further study and returned with higher degrees

One has returned recently with a Masters degree from Japan. (Miss Mungai)

IV. ADMINISTRATION AND MANAGEMENT OF THE DEPARTMENT.

The department has a Chairman who is assisted by staff in various

areas such as examinations timetabling etc.

V. REMARKS.

The department requires assistance in equipment, physical facilities and staff recruitment particularly at Ph.D level.

RESEARCH, PRODUCTION & EXTENSION DIVISION

TUITION FARM

Introduction

The tuition farm has made steady progress over the years in farming activities since the installation of the irrigation network for the 20 hectare portion of the 144 hectare farmland. The installation of the irrigation system was completed in February 1985 and from March of the same year production of various crops was started. Cattle and pigs had been introduced earlier in 1984. These two livestock enterprises have been maintained and plans are underway to improve and expand them. The crop production section of the farm is divided into five equal blocks each covering an area of 4 hectares of land. The blocks are named A, B, C, D and E. Block A is exclusively used by the horticulture department for some of the field practical work for students. Intensive cultivation is carried out in block B, C and E. Block D is an Orchard are planted with Citrus, Pawpaw, Avocado, Mangoes, Grapes and Passion fruits. Block E was opened for the first time in 1988 for use as a museum plot grown on a rotational programme besides having a permanent 1 hectare banana stand.

The college tuition farm was set up to cater for the needs of:

- (i) Tuition - Mainly to those students taking courses in agriculture.
- (ii) Research - Both for students and staff
- (iii) Demonstration - For extension purposes to the community in and around JKUCAT
- (iv) Production
- (v) Producing raw materials - Mainly for other departments especially the department of Food Science and Post Harvest Technology.

The above named objectives of establishing the farm should not be viewed as being exhaustive as there is always room for flexibility in accordance with changing University College development policies.

Staff

The current permanent staff consists of a farm manager, a deputy farm manager in livestock, assistant farm manager for crops, eight technicians and a number of general workers. From time to time the farm recruits casual employees the number of which is determined by the nature of activities on the farm.

At present there is only one Japanese expert on the farm Mr. Kiyoshi Kita who is a graduate in horticulture. He joined the farm in 1988.

Staff development

A lot of improvement has been observed in this area, thanks to JICA for allocating some training opportunities to farm staff. In 1991/92 two technicians went to Japan on JICA Counterpart training programme.

Transfer of Technology

Various Japanese experts and volunteers have, at one time or the other in the development of the farm, worked with Kenyans on the farm and there is no doubt as to the transfer of technology to farm staff during the day to day interactions in the performance of activities in the various farm sections.

Farm Projects

Farm activities are carried out following a cropping map that covers the whole of the 20 hectare irrigable land for a period of one year. The crops to be grown within the specified period are carefully selected on the basis of:

- soil condition
- adaptability
- local demand
- profitability
- yield capacity
- disease and pests resistance as well as
- nutritional value.

Vegetables

Until 1985 these were grown in Block A. This block has the greatest potential in terms of soil fertility. There was an initial nematode attack problem which has to a great extent been eliminated in a variety of ways. This block now falls under the horticulture department and is exclusively used by students and staff for experimental and research work. The farm now grows a variety of vegetables in block B through E following the cropping map and criteria described above. A recently introduced agronomic

practice on the farm is intercropping which has resulted in higher yields per hectare and better utilization of land especially the orchard area which is now regularly intercropped with different legumes.

Livestock

There are two livestock enterprises, cattle and pigs which were introduced way back in 1984. The cattle herd is maintained at around one hundred with twenty milkers and the rest being steers and heifers. The cattle are crosses of various dairy beef and dual purpose breeds. The dairy cross breeds are not high yielders and therefore production fluctuates between three thousand and four thousand kilogrammes of milk per month on the average. This quantity of milk is far much less than the demand from departments, and the College community. The aim of the farm department is to increase the milkers to about fifty by selling the present market weight steers and replacing them with high yielding pure dairy breeds on zero grazing system. A zero grazing unit plan has already been prepared and now only awaits implementation when the funds are available.

The other livestock enterprise in existence is a pig herd that has about one hundred animals in the various growth categories. The present pigsty cannot accommodate more than about one hundred pigs and therefore there is a plan of relocating and expanding the present pig unit.

Other livestock enterprises contemplated are sheep, goats, bees and fish.

Poultry

The poultry house is almost complete. The plan is to simultaneously introduce broilers and layers for both tutorial and commercial purposes.

Crops

The range of crops chosen varies slightly from year to year due to rotational and other management considerations. Since 1990 a french beans project has become a regular inclusion in our cropping pattern.

During these times of financial scarcity the University College has encouraged the introduction of income generating units in all departments and the farm is no exception. Indeed the introduction of the french beans project, the poultry unit, the zero grazing unit and the expansion of the piggery is an attempt to fulfil that need. In its present capacity the farm will most probably only play a secondary commercial role.

CONCLUSION AND RECOMMENDATION

Training

With the growth and expansion of the University College to a fully fledged University there will be need to offer farm staff training for higher qualifications in order to meet the standards of a University tuition farm.

Equipment and Spares

The farm has continued to get support in procurement of machinery and spare parts from JICA. We are grateful for this kind gesture and hope that this support will continue when need arises. Our present irrigation system has been stretched to the limit and any future expansion will need more money to lay the necessary pipe network. Future assistance in this area would enhance the farm's activities.

Intake pumping station and storage pond

Already there is an increased demand for water from the present storage pond due to the recent installation of a water purification plant for College domestic water supply. To meet this more increased demand for water more frequent pumping than was previously the case is already in place. As the pumps and motors will be working more frequently it is felt that there is need to acquire some spare parts specifically for Ndarugu intake pumping station and also for the booster pumping station.

INSTITUTE OF ENERGY AND ENVIRONMENTAL TECHNOLOGY

I. STAFF ACTIVITIES

1. Research

The following researches are being undertaken by staff in the institute:

Energy supply/demand analysis: A case study of Thika Town, Kenya.

Environment and Energy Issues as they Affect Women in Embu District, Kenya.

Solar Water Heating
Solar Refrigeration
Solar Air Conditioning
Biogas Technology

2. Publications - In progress

M. Kinya - Environment and Energy Issues as they Affect Women in Embu District, Kenya.

3. Participation in seminars, conferences etc.

Staff in the institute have participated in the following seminars/conferences:

- (i) Biogas Technology; given at JKUCAT
- (ii) Energy Utilization Alternatives; given at JKUCAT
- (iii) Arid Lands Resource Management; Technological Options; organised by IDRC at ACTS.

UNIVERSITY LIBRARY.

I. INTRODUCTION:

A University Library has often been referred to by some academicians as "Temple" of the University. It is the centre of teaching, learning and research of the University. It is the resource centre without which the academic activities cannot be realized.

The purpose of this report is to briefly give an outline of how we do achieve the above.

II. BOOK STOCK AND PERIODICALS.

a) Book stock by volumes.

Since 1990 the number of books in the Library has been increasing steadily due to budget allocation by JICA. At the beginning of 1990 we had 20,000 books in stock by volume. In 1990 we received 1836 volumes of books from JICA. In March 1991 we received again books totalling 1050 bought by JICA. C. Itoh and Co. donated 144 books later in the year. By January 1992 another consignment of ~~1200~~ books were received from JICA. To-date, the Library has books stock totaling 27,000 volumes.

b) Book stock by titles:-

Book stocks by titles are given in terms of broad subject areas as follows:

<u>CLASS</u>	<u>SUBJECT(S)</u>	<u>NO. OF BOOKS</u>
A	Reference Wokrs	1500
B-M, P, Z	Humanities and Social Sciences	3900
NA & T	Architecture and Technology	12600
Q-QB) QC-QD & QE) QN, QR & R)	Mathematics Physical Sciences Biological Science and Medicine.	4800

c) Periodicals Subscriptions:-

Agricultural Sciences	-	19
Social Sciences	-	1
Science and Technology	-	13
Current Affairs	-	9

S	Agriculture	4200
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Besides the above, we received about 100 titles per annum in donations and complimentary copies.

JICA is expected to subscribe for twenty (20) journals, but we have not been given the tiles and for how long the subscription will last. We do not even know when they will start coming to the Library

III. USERS.

a) Registered:-

The total number of users registered by the start of the academic year 1992/93 is 2740 broken down as follows:-

Students	-	1800
Staff	-	940

b) **Daily Counts:-**

This exercise involves: counting the number of users actually seated in the Library at any one time. Counting the number of users entering the Library throughout the day. The survey found out the following:-

- i) The actual seating capacity of the Library is 210 seats.
- ii) At any one time the average number of users seated were found to be 85 people. Therefore, the average daily seating was determined by multiplying 85 by the number hours we operate in a day. This comes to $85 \times 14 = 510$ seated in a day.

In one semester this figure comes to total of 8160 seatings. In one year we get $8160 \times 2 = 16,320$.
- iii) Potential users - Number of people actually entering the Library. This, the survey gave the following figures:-

- Daily entry counts = 700
- Semester entry = 67200

In one year, when vacation period is excluded, the following figure is obtained: $67200 \times 2 = 134,400$. Therefore, potential users of the Library in one year is approximately 134,400.

IV. **LIBRARY BUDGET 1990/91, 1991/92.**

	1990/91	1991/92
Staff Expenses	260,000	89,000
- Books)		
- Journals) Approx	156,000	100,00
- Equipment)		
- etc)		

V. **BOOKS BOUGHT BY FUNDS PROVIDED BY THE KENYA GOVERNMENT (LIBRARY VOTE).**

	1990/91	1991/92	
Monographs (books)	114	210	
Periodicals subscription	42	42	Titles per annum
Newspapers	34	34	Copies per week
Special collections	21	21	Items per annum.

VI. BINDERY SECTION.

The Bindery section of the Library provides a vital service not only to the Library alone but also to the whole college community.

It repairs Library books which have been made unusable because of torn out parts. It also binds the back issues of Periodicals for reference purposes.

To-date the following binding work have been done:-

1. Books repaired	-	1281 volumes
2. Journals bound	-	440 volumes
3. Newspapers bound	-	252 volumes
4. Students projects bound	-	51 codes

VII NUMBER OF BOOKS LOST.

During the financial year 1990/91 it was estimated that a total of 240 books ~~(are)~~ lost or made unusable due to mutilation and other factors.

VIII OTHER LIBRARY ACTIVITIES BESIDES ROUTINE WORK.

- a) Library has been participating in ASK Nairobi International Show for the last three (3) years.
- b) The Library sends staff to seminars and workshops which are organized by various organizations.
- c) Library is a member of professional associations related to information work. We as institutional members participate in activities organized by these associations.

JKUCAT IN JUNE 1992

ITEM	HORT.	AGRIC. ENG	FSPT	CIVIL ENG	ARCHITECT
I. Staff activities					
(1) No. of researches /an academic staff /year	0.3	1.5	0.5	0.11	0.2
(2) No. of publications/an academic staff/year	0.3	1.5	0.1	0.3	0.06
(3) No. of participations to conference, seminar/an academic staff/year	0.7	2.0	0.5	2.0	0.1
(4) No. of technical staff attended technical training/year	0		1.0	0	0
(5) No. of Academic staff who obtained higher degree since 1990	0	2	2	1	0
II. Student intake and examinations					
(1) No. of students in total	165	59	39	107	43
(2) Exam. pass rate (average %)	95	96	90	96	100
III. Consolidation of university education and research					
(1) % of academic staff deployed to established posts	82	80	78	67	70
(2) Adequacy of equipment in quality and quantity based on syllabus	80	80	95	70	70
(3) % of academic staff left since 1990 to current No. of academic staff	10	0			21
(4) % of teaching load by full time staff to total teaching load	61	95	70	100	73
(5) Progress of syllabus preparation expressed as %	100	100	100	100	100
(6) No. of library books and periodicals currently subscribed					2614
(7) No. of seminars, conferences organized / year	3	3	4	5	1
(8) % of personal emolument to total recurrent budget					
(9) Staff/student ratio	1:9	1:10	1:3	1:11	1:10
IV. Administration and management	1:15				
(1) Senior staff/established posts					
(2) Actual expenditure of recurrent budget in 1991 and 1992				Sh3.24m	
(3) Actual expenditure of development budget in 1991 and 1992					
(4) Income generated by production units					252,200/=

JKUCAT IN JUNE 1992

	MECH.	ENGELECT.	ENGMATH. & COMBIOLOGICAL	PHYSICAL	AC. AGRIC	FAC. ENG	FAC. SCI.	JKUCAT	REF.
0.10	0	-	0.3	0.1	0.3	0.1	0.1	0.2	4.5
0.125	0.08	-	0.4	0.1	0.1	0.3	0.2	0.2	4.8
0.063	0.17	0.4	0.6	0.1	0.6	0.6	0.5	0.6	4.6&4.7
2	1	0	0	0	1	3	0	4	
0	2	0	0	0	4	3	0	7	
62	59	*	143	563	263	215	706	1184	R
100	100	95	96	94	95.9	96.3	95.5	95.5	R
57.1	41.6	54	50	61	89	78	55	72	1.2
84	75	20	33	60	88	79	57	75	
6.25	5.6	2	18	0	7	8	8	5	1.4
36	74	60	100	70	78	69	79	76	1.1
100	100	100	100	100	100	100	100	100	
-	-	-	-	-	4.200	12.600	4.800	27.000	
-	1	5	4	1	10	7	10	27	4.9
49.6	90.1							68	FO
1:9.6	1:9.4	1:50	1:10	1:20	1:5	1:3	1:12	1:7(1:11)	
	Sh.8.4M							70	
								81	FO
								79	FO
	Sh.9.792								FO

*Shared & Serviced students

SUMMARY OF RESEARCH ACTIVITIES

	RESEARCH DURING APRIL-MARCH 1992			CURRENT RESEARCH	PROPOSED FUTURE RESEARCH
	RESEARCH	SEMINARS ON RESEARCH			
<u>Faculty of Agriculture</u>					
Agricultural Engineering	4	11	3	24	
Horticulture	7	4	5	19	
Food Science & Post-Harvest Technology	5	5	7	5	
Sub-Total	<u>16</u>	<u>20</u>	<u>15</u>	<u>48</u>	
<u>Faculty of Engineering</u>					
Electrical Engineering	6	0	2	5	
Civil Engineering	5	8	1	15	
Mechanical Engineering	4	2	0	0	
Architecture	2	1	2	0	
Sub-Total	<u>17</u>	<u>11</u>	<u>5</u>	<u>20</u>	
<u>Faculty of Science</u>					
Physical Sciences	2	1	3	4	
Biological Sciences	2	0	4	0	
Mathematics & Computer Sciences	0	4	2	0	
	<u>4</u>	<u>5</u>	<u>9</u>	<u>4</u>	
Institute of Energy & Environ. Tech.	2	2	2	16	
<u>TOTAL</u>	<u>39</u>	<u>38</u>	<u>31</u>	<u>88</u>	

LIST OF STAFF TRAINEES.

NO.	CATEGORY	NAME	DEPARTMENT	SUBJECT OF STUDY	DEGREE	PERIOD OF STUDY
1.	JICA C/P	C. M. Maloba	Electrical & Electronic	Microcomputer	N/A	1990.9-1991.3
2.	JICA C/P	J. M. Mberia	Administration	Database applications	N/A	1991.2-1991.5
3.	JICA C/P	H. J. Osielei	Electrical & Electronic	High Voltage Engineering	N/A	1991.8-1992.8
4.	JICA C/A	H. Mwangi	Mechanical Engineering	Mechanical Engineering	N/A	1991.8-1992.8
5.	JICA C/A	C. A. Onyango	FSPT	Food Engineering	N/A	1991.8-1992.8
6.	JICA C/A	N. N. Kamau	Farm	Fruit Vegetable Production	N/A	1991.11-92.10
7.	JICA C/A	J. T. Mailutha	Agricultural Engineering	Agricultural Machinery Design	N/A	1992.2-92.12
8.	JICA C/A	P. M. Kutima	FSPT	Food Biotechnology	N/A	1992.3-1992.9
9.	JICA C/A	G. A. Andalia	Farm	Agricultural Machinery	N/A	1992.5-92.11
10.	JICA C/A	L. W. Gatharia	Maths & Computer	Software Engineering	N/A	1992.3-1992.2
11.	JICA C/A	J. M. Mwangi	Electrical & Electronic	High Voltage Engineering	N/A	1992.3-1993.2
12.	JICA C/P	P. M. Mulyungi	Horticulture	Floriculture	N/A	1992.3-1993.2
13.	JICA C/P	F. M. Mburu	Architecture	Urban Design	N/A	1992.3-93.3
14.	JICA C/P	K. Z. Mwatela	Civil Engineering	Transportation Engineering	N/A	1992.3-93.3
15.	JICA C/P	L. O. Odhiambo	Agricultural Engineering	Irrigation	Ph.D	1991.1-1994.5
16.	JICA C/P	M. A. Mwasaru	FSPT	Food Science	Ph.D	1992.7-1995.6
17.	Monbusho	T. G. Muturi	Civil Engineering	Public Health Engineering	Ph.D	1988.4-1994.4
18.	Monbusho	M. C. Kiiyukia	FSPT	Food Hygiene	Ph.D	1988.4-1994.4
19.	Monbusho	S. J. Okwach	Agricultural Engineering	Storage Structure	Ph.D	1988.4-1994.4
20.	Monbusho	H. W. Mwai	Mechanical Engineering	Fluid Mechanics	Ph.D	1992.4-1995.3
21.	Monbusho	S. M. Wanjii	Mechanical Engineering	Thermodynamics	M.Sc.	1990.4-1993.3
22.	Monbusho	G. Wanyoike	Mechanical Engineering	Control Engineering	M.Sc.	1990.4-1993.3

LIST OF STAFF TRAINEES Contd'

No.	CATEGORY	NAME	DEPARTMENT	SUBJECT OF STUDY	DEGREE	PERIOD OF STUDY
23.	Monbusho	S. W. Mugucia	Agricultural Engineering	Farm Machinery	M.Sc.	1990.4-1993.3
24.	Monbusho	F. M. Mathooko	FSPT	Post Harvest	Ph.D	1991.4-1994.3
25.	Monbusho	F. M. Mumba	Electronical & Electronic	Computer Engineering	M.Sc.	1991.4-1994.3
26.	Monbusho	O. M. Nyadawa	Civil Engineering	Construction Engineering	M.Sc.	1991.4-1994.3
27.	Monbusho	F. M. Oduori	Mechanical Engineering	Agricultural Machinery	Ph.D.	1989.10-1993.3
28.	Monbusho	C. I. Nindo	Agricultural Engineering	Process Engineering	Ph.D	1992.3-1995.3
29.	Monbusho	J. M. Thwairi	Architecture	Housing Plan	M.Sc.	1992.3-1994-2
30.	Monbusho	G. M. Ndegwa	Agricultural Engineering	Soil & Water	Ph.D.	1992.4-1996.3
31.	Monbusho	K. Makhanu	Civil Engineering	Water Resources Engineering	Ph.D	1992.2-1996.3
32.	Monbusho	J. M. Keriko	Physical Science	Agricultural Chemistry	Ph.D	1991.4-1994.3
33.	JICA/Local	J. G. Macharia	Maths and Computer	Applied Maths	M.Sc.	1991.10-1993.9
34.	JICA/Local	C. Mungai	Architecture	Urban Planning	M.A	1991.10-1993.9
35.	JICA/Local	D. Standi	Civil Engineering	Structural Engineering	M.Sc.	1991.10-1993.9
36.	JICA/Local	W. Oyawa	Civil Engineering	Structural Engineering	M.Sc.	1991.10-1993.9

附属資料③ 8月10日午前の協議の議題・議事録

AGENDA FOR THE MEETING TO BE HELD BETWEEN JKUCAT ACADEMIC BOARD AND
THE JICA EVALUATION TEAM TO BE HELD ON MONDAY 10TH AUGUST 1992 AT 9.30 A.M.

1. Brief overview of the project by the Principal;
presentation of interim evaluation report.

2. Evaluation reports:

To receive reports on the Meetings held between various
departments and members of the Evaluation Team.

Members of the Evaluation Team to comment on present achievement

3. Targets for the second half of the Project (1992- 1995):

To discuss and propose steps needed for successful completion
of the project:

- Expectations of each Department
- Expectations of JICA
- Staff training and local postgraduate programmes at JKUCAT.

4. Strategy to achieve targets

Request for JKUCAT
: Short-term - Equipment, staff training
: Long-term - Postgraduate study, Architecture

5. Research Programmes at JKUCAT

To note areas of discussion for a meeting at 2.30

6. any other business.

MINUTES OF THE MEETING BETWEEN THE JAPANESE EVALUATION TEAM AND THE JOMO KENYATTA UNIVERSITY COLLEGE OF AGRICULTURE AND TECHNOLOGY ACADEMIC BOARD HELD ON MONDAY 10TH AUGUST, 1992 AT 9.30 A.M.

PRESENT

1. Prof. R. W. Michieka - Principal, JKUCAT/CHAIRMAN
2. Prof. Atushi Yomota - Faculty of Agriculture, Okayama University
3. Prof. Yukio Suzuki - Research Institute for Bioresources, Okayama University
4. Prof. Seiki Kyan - Electronic & Computer Science, University of the Ryukyus
5. Prof. Yutaka Fukui - Electrical/Electronic Engineering, Tottori University
6. Prof. Masahara Masuda - Horticultural Science, Okayama University
7. Prof. Ryoji Waka - Mechanical Engineering, Tottori University
8. Mr. H. Nakazawa - JICA Headquarters
9. Dr. R. W. Mutua - Deputy Principal (R.P.E.), JKUCAT
10. Dr. J. K. Yego - Deputy Principal (Administration), JKUCAT.
11. MR. T. Sugiyama - Japanese Team Leader, JKUCAT
12. Prof. J. Iwasa - Project Academic Advisor, JKUCAT
13. Prof. S. M. Maranga - Dean, Faculty of Engineering
14. Dr. F. K. Lenga - Dean, Faculty of Agriculture
15. Dr. P. G. Ngunjiri - Chairman, Architecture
16. Mr. J. M. Kinuthia - Chairman, Civil Engineering
17. Mr. S. M. Mbogho - Chairman, Electrical/Electronic Engineering
18. Dr. L. M. Masu - Chairman, Mechanical Engineering
19. Dr. I. K. Inoti - Chairman, Agricultural Engineering
20. Dr. G. M. Kenji - Chairman, Food Science & Postharvest Technology
21. Mr. L. S. Wamocho - Chairman, Horticulture
22. Miss V. W. Ngumi - Chairman, Biological Sciences
23. Dr. M. Tsunoda - Civil Engineering
24. Mr. H. Koaze - Food Science & Postharvest Technology
25. Mr. K. Oshiyama - Japanese Team Co-ordinator, JKUCAT
26. Mr. J. M. Mberia - Faculty of Science
27. Miss Mbaari Kinya - Head of Research Department
28. Mr. S. G. Muchira - Farm Manager
29. Mrs. E. M. Kahangi - Director, Centre for Biotechnology

- 30. Mr. S. K. Ngugi - Director, Institute for Production & Innovation
- 31. Mr. P. M. Mativo - Library, JKUCAT
- 32. Mr. J. M. Mberia - Deputy Registrar (recording)
- 33. Mr. G. C. Njine - Senior Assistant Registrar
- 34. Mr. J. S. Mabonga - Administrative Assistant

THE MINUTES

1. WELCOME

The Chairman welcomed members of the Evaluation Team to the University College and to this consultative meeting.

2. OVERVIEW OF THE PROJECT

The Principal presented the report prepared by the University College for the Evaluation Team.

NOTED

That advance copies of the report were used for the interim evaluation of the project.

3. EVALUATION REPORTS AND DISCUSSION

Various aspects of the project were discussed and there was mutual understanding on ways of solving some of the difficulties facing the project.

a) CONSULTATIVE MEETINGS

REPORTED

That each department within the project had held consultations with a member of the Team.

That the members of the Evaluation Team appreciated the evaluation reports prepared and presented by departments.

That the effort of the Kenyan side in implementing the project was generally satisfactory. The project was progressing as planned but a few areas of difficulty existed.

b) ASPECTS REQUIRING IMPROVEMENT

1) FACULTY OF SCIENCE

NOTED

That although the faculty of Science is not covered by the project this faculty offers important support services to the other faculties

That due to the relatively large number of students registered in the faculty of Science, students in Agriculture and Engineering were not getting adequate access to some facilities, especially computers.

DISCUSSED & AGREED

That the University authorities would ensure that students in applied sciences have adequate access to computers by taking the following steps:

- Setting up additional computer laboratories through other sources of funding.
- Recruiting an adequate number of technicians.

ii) FINANCIAL PROVISION & MANAGEMENT

NOTED

That allocation of funds to departments for teaching expenses was not adequate.

That the inadequate budget provision was a result of constraints beyond the control of the University.

AGREED

That the University would explore ways and means of coping with the demand for teaching materials.

That it may be necessary for the university to request for technical assistance in provision of teaching materials.

OBSERVED

That personal emoluments accounted for a very large preparation of the university budget.

That it is necessary to increase the proportion provided for teaching and other academic activities.

iii) ACADEMIC ACTIVITY

OBSERVED

That currently, most staff members appear to be pre-occupied with teaching and have little time for research, except in student projects.

AGREED

That workloads would be reconsidered with a view to encouraging staff to engage in research.

iv) STAFF TRAINING

REPORTED

That it was proving difficult to increase the number of Mombusho scholarships for JKUCAT.

NOTED

That the University College was soliciting scholarships from other sources. That some scholarships had become available through Government of Kenya and World Bank funding.

AGREED

That the University would continue searching for additional scholarships from other sources.

v) USE OF WORKSHOPS

DISCUSSED & AGREED

That the University would consider the proposal structure for reorganization of the workshops to ensure optimum utilization.

vi) PHYSICAL FACILITIES

NOTED

That the Japanese funded facilities would be completed by March 1993.

That furniture for the facilities would be provided using Kenyan funds.

OBSERVED

That for academic facilities which were not covered by the grant Aid, the university could request to use the counterpart fund provided to Government of Kenya.

AGREED

That the University would make the necessary budgetary requests to the Government of Kenya.

4. TARGETS FOR FINAL EVALUATION (1994)

PRESENTED

The evaluation table of figures proposed in the discussions between departments and members of the Team.

NOTED

That certain figures in the table needed to be adjusted to reflect actual expected outcomes.

AGREED

To use the format of the table and the revised data as guides for the evaluation.

5. STRATEGY TO ACHIEVE TARGETS

In order to achieve the targets set for successful completion of the project, it was agreed that the following be considered:

i) STAFF TRAINING

- Both the Kenyan side and the Japanese side to try to increase available scholarship for academic staff.
- Possibility of increasing the number of technician local training awards (HND) using JICA fund.
- Local training at JKUCAT for academic staff using JICA fund to reduce costs.

ii) EQUIPMENT

- Ensure adequate servicing and maintenance of equipment supplied to the project.
- Arrange for replacement of unserviceable equipment (including vehicles)

iii) PRODUCTION UNITS

- To be developed as sources of extra funding for academic programmes.
- Need to plough back some of the income of units to the producing departments for purchase of materials.

iv) DEVELOPING DEPARTMENTS

- The Department of Architecture to be considered for special assistance so that it can develop fully alongside the other departments in the project.

v) RESEARCH

It was agreed that a special session would be held that afternoon to discuss and agree upon strategies for improving research activity at the University College.

There being no other business the meeting ended at 12.35 p.m.

APPROVED FOR ISSUE

R. W. Muziaka

DATE

11/8/1992

CHAIRMAN

