

ケニア測量地図学院プロジェクト 巡回指導調査団報告書

平成10年2月

国際協力事業団
社会開発協力部

序 文

ケニア共和国では社会・経済インフラ整備の需要が増大しているにもかかわらず、測量技術者の不足から、開発に不可欠な地理情報が整備されていない。このためケニア土地定住省は、地図・測量分野の技術訓練を実施する訓練所を設立し、技術者育成を図りたいとして、我が国に無償資金協力とプロジェクト方式技術協力を求めてきた。

これを受けて国際協力事業団は、無償資金協力の進捗にあわせて、技術協力のための各種調査を重ねた上で、1994年8月に実施協議調査団を派遣し、討議議事録(R/D)の署名を取り交わして、同年10月から5年間にわたる「ケニア測量地図学院プロジェクト」の技術協力を開始した。

今般は協力開始から3年あまりが経過したので、プロジェクトの実施状況と問題点を把握し、中間評価を行うとともに、プロジェクト終了までの活動計画を策定するため、1998年(平成10年)1月18日から同31日まで、建設省建設大学校測量部部長の海津 優氏を団長とする巡回指導調査団を現地に派遣した。同調査団によればプロジェクトは着実な成果をあげており、ケニア側が自らの責任で学院を運営していこうとしている努力が認められた。

本報告書は同調査団の調査・協議結果を取りまとめたもので、今後のプロジェクト進展のために広く活用されることを願うものである。ここに調査団の各位をはじめ、ご協力頂いた外務省、建設省、国土庁、在ケニア日本大使館など、内外関係機関の方々に深く謝意を表するとともに、今後とも一層のご支援をお願いする次第である。

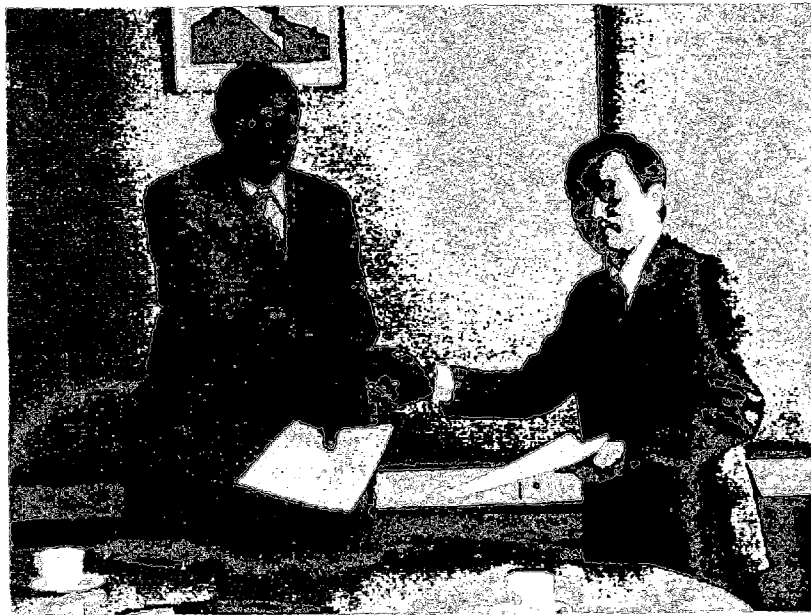
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社会開発協力部部長 神田道男

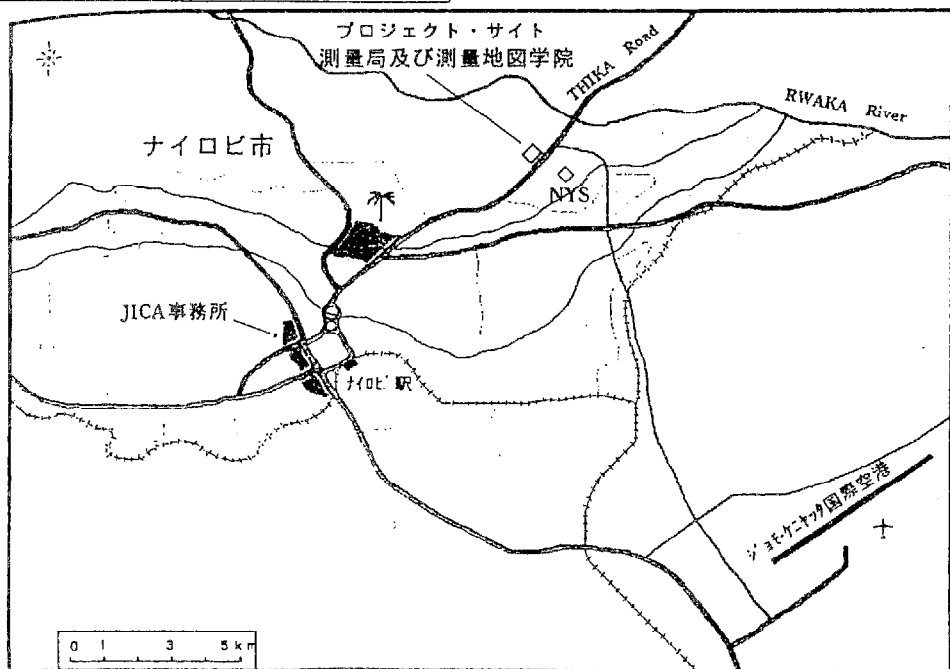
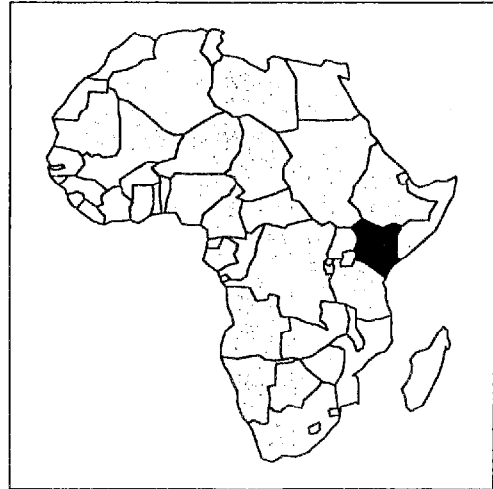
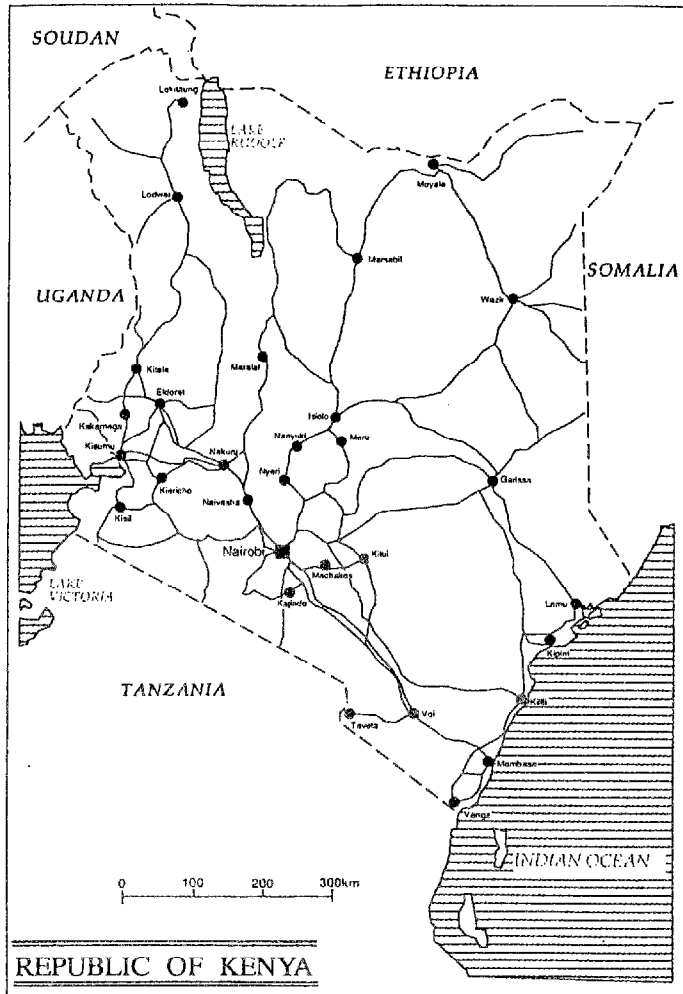


協議の様



ミニッツ署名・交換

プロジェクト位置図



目 次

序 文

写 真

プロジェクト位置図

1 . 巡回指導調査団派遣 -----	1
1 - 1 調査団派遣の経緯と目的 -----	1
1 - 2 調査団の構成 -----	1
1 - 3 調査日程 -----	2
1 - 4 主要面談者 -----	2
2 . 要 約 -----	3
3 . 主要協議内容 -----	4
3 - 1 専門家チームとの協議 -----	4
3 - 2 ケニア側管理部門との協議 -----	5
3 - 3 学科別ケニア側教官との協議 -----	6
4 . 合同委員会の開催 -----	8
5 . その他 -----	9
付属資料	
1 . ミニッツ -----	13
2 . チーフアドバイザー報告書 -----	32
3 . KISM 校長報告書 -----	47
4 . 評価表 -----	62
5 . KISN の人員配置状況 -----	64
6 . 合同委員会議案 -----	70

1 . 巡回指導調査団派遣

1 - 1 調査団派遣の経緯と目的

ケニア共和国においては社会・経済インフラ整備の需要が増大しているが、その開発に不可欠な地理情報が整備されていない。このような状況の中、ケニア土地定住省は地図・測量分野の技術訓練を実施し、同分野の技術者を養成する訓練所の設立を計画し、1992年8月、日本に対しプロジェクト方式技術協力及び無償資金協力を要請した。これを受け、日本国政府は無償資金協力の実施を決定するとともに国際協力事業団は1994年10月から5年間のプロジェクト方式技術協力「ケニア測量地図学院プロジェクト」を開始した。本プロジェクトの目的は、ケニア測量地図学院(KISM)組織の確立、適切な訓練施設・資機材の整備、教官の育成、教材整備、訓練の適切な実施である。現在、土地測量、地図作成、写真測量/リモートセンシング、地図複製のディプロマコース及び短期訓練を実施しており、1998年1月からは地図複製を除く3分野のハイアーディプロマコースが開設される。なお、1996年2月に計画打合せ調査団が派遣され、実施計画・PDMの見直しを行った。

本調査においては、以下の事項について調査・協議を行い、ケニア側と合同で中間評価を行って、今後の協力量針を検討し、プロジェクト終了までの活動計画を策定する。

- (1) プロジェクト開始から3年あまりが経過したことから、過去の協力内容、協力分野について中間評価を行うとともに、今後の協力量針を策定する。
- (2) 討議議事録(Record of Discussions: R/D)に記載されている活動計画に対し、現在までの実施体制による実施の状況を確認するとともに、プロジェクトの実施・運営の問題点を整理し、専門家チーム及び先方機関と協議して、解決を図る。
- (3) 今後の活動計画を確認するとともに、各学科の技術上の支援を行い、問題点の解決を図る。
- (4) 協議の結果を双方の合意事項としてミニッツに取りまとめる。

1 - 2 調査団の構成

担当業務	氏 名	所 属
団長/測地測量	海津 優 (かいづ まさる)	建設省建設大学校測量部部长
地図作成・複製	常住春夫 (つねすみ はるお)	建設省国土地理院 地理調査部研究官
写真測量・ リモートセンシング	久保紀重 (くぼ のりしげ)	建設省国土地理院測地部測地第三課
地籍測量	斉藤 栄 (さいとう さかえ)	国土庁土地局国土調査課
協力企画	高原敏竜 (たかはら としろう)	国際協力事業団社会開発協力部社会開発協力第二課

1 - 3 調査日程

日順	月 日 (曜)	移 動 及 び 業 務
1	1月18日(日)	成田～ロンドン
2	19日(月)	ナイロビ着 JICA 事務所打合せ、土地定住省表敬、測量局表敬、協議
3	20日(火)	プロジェクトサイト訪問 ケニア測量地図学院 (KISM) 校長表敬、協議 日本人専門家チーム打合せ
4	21日(水)	KISM ケニア側管理部門と協議
5	22日(木)	KISM ケニア側スタッフ学科別協議
6	23日(金)	合同協議、大使招宴
7	24日(土)	秋山チームリーダーと協議
8	25日(日)	資料整理
9	26日(月)	セミナー参加、合同協議
10	27日(火)	ミニッツ作成
11	28日(水)	ミニッツ署名・交換、JICA 事務所報告
12	29日(木)	ナイロビ～チューリッヒ
13	30日(金)	チューリッヒ発
14	31日(土)	成田着

1 - 4 主要面談者

M. Kaittany	Permanent Secretary, Ministry of Land and Settlement
P. B. Ngugi	Deputy Secretary (Finance) Ministry of Land and Settlement
A. K. Njuki	Director of Survey, Survey of Kenya
B. W. N. K. Murage	Deputy Secretary (Development) Ministry of Land and Settlement
J. K. Karu	Deputy Chief Economist Ministry of Land and Settlement
J. R. R. Aganyo	Deputy Director, Survey of Kenya
H. Nyapola	Principal, KISM
K. Mwero	Deputy Principal, KISM
J. K. Mwaura	Administrative secretary, KISM
K. K. Magere	Public Relations Officer Ministry of Land and Settlement
I. O. Ouma	Academic Secretary, KISM
C. M. Kamamia	Land Survey Department, KISM
D. O. D. Ondiek	Head of Cartography Department, KISM
E. Njubi	Head of Photogrammetry and Remote Sensing Department, KISM
M. O. Omach	Map Reproduction Department, KISM
Shinsuke Horiuchi	Ambassador of Japan
Ryuji Uematsu	Second Secretary, Embassy of Japan
M. Tagami	Resident Representative, JICA Kenya Office
M. Akiyama	Project Team Leader

2. 要 約

調査目的に従い、これまでの協力の内容、分野について現況確認を行うため、合同協議、専門家及びカウンターパート（C/P）からの聞き取り調査、文書資料調査を行った。これに基づき、プロジェクトが滞りなく進捗していること、その成果としてケニア測量地図学院（KISM）のディプロマコース第1期生、第2期生は順調に2年次、1年次をそれぞれ終了し、第3期生の入校と併せてフルオペレーションの状態に入ったこと、ハイアーディプロマコースが開始され、1998年1月から第1期生が入校して来る予定であることなどを確認した。これらについてミニッツに取りまとめ、署名を取り交わした。

協力は極めて良好な関係の下、着実に成果を上げている。特にディプロマコースについては、専門家はアドバイザーに徹して、現地スタッフにより教育指導が行われており、現地化が着実に進行しているものと考えられる。現地の経済情勢から、ケニア側環境整備事業の一部に若干の遅れが見られるものの、予算措置はなされており、協議の席上でも最善を尽くして完成する旨言明されている。教官の研修もケニア側負担で年4名ずつ教員訓練所（ITTC）で進められており、ケニア側が自らの責任で学院を運営していく努力の一環として好感が持てる。

総じて状況は良好であり、前回協議後の計画どおり進めていってよいものと思われる。

一連の協議、調査に際して、プロジェクトの運営上の問題についても調査を行った。その結果、以下の諸点について、今後考慮することが好ましいと考えられる。

- (1) 既に何回か試みられているところであるが、特に新技術対応を中心に、教官のレベル維持のために専門家チームによる短期集中講義を定期的に企画することが有効である。
- (2) ハイアーディプロマコースの学生と教官の技術レベルの差別化を担保するためにトレーニング機会を継続的に提供することは、施設整備がようやく整ったという現実に照らし、なおしばらくの間必要である。
- (3) 協力の成果を維持、発展させるためには、財政基盤の強化が不可欠であり、KISMのコンサルタント機能、他機関及び周辺国関連機関に対する短期研修サービス機能の付加の可能性について積極的な考慮を行う必要がある。
- (4) これに関連して、KISMの教育並びにコンサルティング能力の維持のために、技術能力、研究能力の社会的アピールに関する何らかの方策がとられることは好ましいことである。
- (5) これらに関連して、ケニア側から第2期プロジェクトの要請を提出した旨発言があった。この件については本調査団の目的を越えることから、コミットできないものの、団として技術的観点に限定して言えば、学士相当レベルの教育訓練を行うハイアーディプロマコースを円滑に運営し、併せて学院の財政基盤の強化を図る上では有効と思われた。

3 . 主要協議内容

JICA事務所にて情報収集と打合せを行った後、土地定住省を表敬訪問、次官より、日本がJICAを通じて行っている協力について一般的に謝辞が述べられた。席上、ケニア測量地図学院(KISM)プロジェクトについては、技術者不足解消に向けて本件協力に大きな期待をしていること、ケニア側財政事情によって若干現地負担分に遅れが生じているものの日本側分については着実に実行されており、喜んでいることが表明された。また、これからは成果としての教育結果が問われる重要な段階に入るので、今回の調査が将来を見越した効果的なものとなるよう期待している旨発言があった。これに対し当方より、ケニア側の本件に関する努力について評価するとともに、プロジェクトの中間段階にあたり、その進捗を確認し、問題点があれば問題の所在、対処等につき協議を行うことを通じてプロジェクトを効率的に推進し、KISMは土地定住省が土地問題を扱うにあたっての最も強力な資源となるよう期待している旨発言した。

測量局では、次長に面会し、今回の調査が中間評価の意味合いもあることから、忌憚のない意見を聞き取りたいと思っていることを述べ、協力を依頼した。測量局側からは、財政事情の厳しい中であるが、努力をしていること、新たな次官の下、全力を尽くして粘り強くやっていくので引き続き協力を願いたい旨の発言があった。

翌日以降プロジェクトサイトでKISM校長に表敬の後、秋山リーダーの案内で校内施設を視察、日本人専門家チーム、KISM 管理部門、ケニア側スタッフとの協議を行った。

主な協議内容は以下のとおりである。

3 - 1 専門家チームとの協議

専門家チームとの打合せでは、主としてケニア側の KISM 運営の能力を中心に現状評価を行ったが、その要点は次のとおりである。

- (1) ディプロマコースについては、専門家はアドバイスに徹し、現地教官によりほぼ問題なく運営がなされている旨報告があった。特にケニア側として、教官を国内の教官研修に送るなどの努力をしており、教授能力も着実に向上している旨の報告があった。教育の効果は教官の資質に強く依存するところ、このような自助努力が着実に払われている点、評価できると考える。
- (2) ハイアーディプロマコースについては、シラバスの内容が高度であるので、それぞれに勉強しているものの、なお専門家の指導が不可欠であるとの感想が述べられた。また、実務経験を積んだ研修生を教育しなければならないことから、教官の学力の更なる向上が必要であり、これについてはカウンターパートトレーニングが極めて有効であること、文部省スカラシップによる修士課程履修が既に開始されていて極めて有効である旨報告があった。ケニア国内での

努力としては、実地研修ということで、国立公園の地形図の作製、ナイロビ地区の5万分の1地形図の作製、航空局の委託による空港のグローバル・ポジショニング・システム（GPS）による測量、リフトバレー地区の地殻変動測量などを通じて実務経験を積むほか、分野別の知識を一連の事業に取りまとめて執行する技術の習得を図り、もって研修の実務的側面の強化にあてているとの報告があった。この事業は併せて学校運営の財政的側面からも好ましい効果を期待できる。

- (3) 財政的にはケニア全体として、総選挙、洪水などを通じて厳しい中でかなりの努力が認められるとの報告があった。併せて上記事業などを通じて歳入の道の確保が、当地の財政システムの中で、運営の自由度を上げる効果があり、一石二鳥の施策として期待されているとの言明があった。
- (4) 学校運営については、教材、参考書としての図書の整備が緊急の課題として意識されている。現地運営スタッフについては、特に総務的工作に従事するもの及び学科長相当のものの能力に若干の危惧が表明された。これは経験の不足によるもので、なおしばらくの実務経験が必要であるとの意見が出された。これについては、たとえば総務スタッフを日本に送り、測量専門学校の運営に携わっているものについて研修させるなどの手立てが考えられるが、カウンターパート研修枠の中では主として教官の能力向上が優先されているところから、今後の考慮を要するポイントであると考えられる。
- (5) KISM に対するケニア国内及び周辺諸国の期待として、土地関連情報のサービス並びに維持管理につき測量局以外のものへの短期研修コースを求める声があること、またウガンダ及びタンザニアからは特に新技術関連の研修を中心に研修生の受入れを期待する声があることなどにつき報告があったが、現プロジェクトの目的を越えるものがあり、この扱いは今後の検討に待つ必要がある。しかし、測量分野については地域ごとの対応が適当な規模であることから、第三国研修の実施などによる地域センターへの格上げは十分考慮に値する。短期コースと第三国研修は収入が見込まれることでもあり、財政健全化の意味でも魅力的な考えであると思われる。また、専門家から特に教室用器材の充実があったことが、教育効果の向上とケニア側教官のやる気の向上にあずかって大きかったので、日本側のサポートに感謝したい旨発言があったので特記する。

3 - 2 ケニア側管理部門との協議

ケニア側管理部門との協議では、専門家を交えず、忌憚のない意見を聴取した。協議では専門家とのコミュニケーション、教授技術の移転状況、適時適切な指導の有無などについて主として協議を行ったが、その結果は次のとおりである。

- (1) 専門家とのコミュニケーションは円滑に行われており、適切なタイミングで指導が行われている。
- (2) 技術の移転については現地教官の自主性を尊重しながら特に器材の使用、新技術の扱い方など十分なアドバイスがなされているとの評価であった。
- (3) 学院の運営についても、学科別、管理部門別に週1回の会議を通じて必要なアドバイスを受けており、満足している旨発言があった。また、ケニア側スタッフの経験の不足については、実際に問題を生じた際の専門家の対処ぶりをいっしょに仕事をしながら観察することで、着実に経験が蓄積されているとの発言があったが、専門家チームとの打合せにおける評価と併せて考えて、ケニア側の積極的姿勢と技術移転の着実な進捗がうかがえる。
- (4) KISM 校長からは、ディプロマコースについてはあと2～3年でルーチンとして現地のみで運営して行くことが可能になるであろうが、ハイヤーディプロマについてはなお4年程度経験を積みねばルーチン化できないのではないかと観測が述べられた。ハイヤーディプロマは内容も高度で、研修生も経験者であることから、2サイクル程度は問題の抽出と対処法の確立にかかると思われ、4年程度という観測は適切なものであると考えられる。少なくともこの期間は何らかのアドバイザーサービスが必要であろうと思われる。
- (5) 専門家側から説明のあった、短期コース、第三国研修についてはケニア側からも同様の指摘があったが、前項で述べたように施設の有効利用、財政健全化の観点から十分考慮に値する。

専門家及び管理部門との打合せ協議に基づいて判断するに、本件協力は途中若干の遅れがあったものの基本的に極めて順調に推移しており、ディプロマコースについては予定どおりである。また、ハイヤーディプロマコースについても若干のソフト面での支援を行うことで、技術的には着実に現地化が見込まれると考える。しかしながら、今後の財政的基盤の強化、教官の技術力維持等の問題にかんがみて、上位の協力の可能性について検討が必要であると考えられる。

3 - 3 学科別ケニア側教官との協議

- (1) 学科別にケニア側教官と協議を行い、教官の自己評価を求めたが、専門家のカウンターパートとの日常的コミュニケーション、適時適切な助言などについては、どの学科も基本的に満足しており、問題は生じていない旨回答があった。また、自己評価については、専門家が、助言に徹してコース運営を教官に任せながら指導していることから、日常的な問題についてはかなりの自信をつけてきていることがうかがわれたが、なお、問題が生じた場合の対処、実務担当者の育成というKISMの目的にかなう教官のレベルの維持に関して、引き続き指導助言を期待する旨の発言が多かった。これは、施設の整備がようやく完了したところであり、その運用に関して、これから技術移転しなくてはならないという当面の状況にかんがみて当然の意見で

あり、新施設を用い、全学年揃って研修を行う状況になって以後の最初の卒業生がどの程度の実力をつけて研修を終了するか、また測量局をはじめとする雇用者が満足するかを待たないと最終的に客観的判断を下すのが容易でないことから理解ができる。

- (2) 各学科に共通して教官側から強い要請があったのは、特に新技術を中心に、専門家チームによる、教官向けの短期集中講義(実習を含む)を通じて、教官とハイアーディプロマコースの学生との技術的差別化を進めることである。これは、当地の財政事情から、必ずしも潤沢な実務経験機会を与えられていなかった教官が、ある程度の経験を有する学生に教える立場に立たされている状況を考慮すれば、理解できる要求である。教官への集中講義的なことはこれまでも本協力の中で試みられたこともあり、この提案は前向きに検討し、実現の方向で対処すべきであると考え。また、同様の理由から、研究機会及び学士、修士などの学位に結びつく研修機会への期待が共通して表明されたが、これはJICAを通じての協力スキームの中にはうまくはまりにくいこともあり、文部省の奨学生制度の活用や、ケニア側の自助努力に期待しなければならぬ面が多いかと思える。しかしながら、教官が必然的に経験を積んだ比較的年齢の高い層に偏りがちな現状にかんがみて、何らかの手立てについて考えることも必要であろう。この点に関しては、専門家のアイデアであるが、欧州諸国との連携など、幅広いアプローチを視野に入れて考えることも有効であろう。また、教育の効率化のためには、参考書の整備、AV教材の整備などについても希望が述べられたが、専門家の指摘にもあるように効果の大きなものであるから、条件の許す範囲で早期に積極的に進めて行く必要がある。
- (3) 新技術に関しては、最新機材、ソフトウェアを学生の人数分そろえなければ実習に差し支えるとの意見があったが、教育の目的に照らして、デモンストレーションと実習は分けて考えるのが当然であり、実務機関でないところに高価なソフトウェアを大量に導入するのではなく、実務レベルのものはデモンストレーションにまわし、実習は必要最低限の機能のもので行い、原理を理解して実際の場に応用する能力をつけさせるという工夫も必要であることを理解してもらわなければならない。厳しい財政事情の中で学校を運営して行くことについて、教官としても経営感覚を持って臨まなければならないので、今後現地化を進める上で、専門家チームとしても粘り強く指導して欲しいと考えている。
- (4) 個別の学科の問題については、技術的かつ特殊個別の問題が多かったので、その場で指導を行うとともに、専門家と相談するよう指導し、内容について専門家に伝達した。

4 . 合同委員会の開催

巡回指導調査に伴い、ケニア側とプロジェクトとの合同委員会が開催された。

協議では、KISM 校長、専門家チームリーダーそれぞれの報告に基づいて、現状を確認し、ケニア側整備事項について財政状況の説明などがあったが、調査団がケニア側負担事項の着実な実行について特に努力を促したところ、測量局長は誠意を持って実行にあたる旨言明し、土地定住省次官補から省としても最善を尽くしたい旨発言があった。さらに、教官配置についても測量局が責任を持って必要数を配置する旨の言明があった。また、KISM 校長から、ケニア側が内部努力として定期的に教官の研修を国内研修施設を用いて行っているとの報告があり、調査団はそのような内部努力を歓迎する旨発言した。

協議結果はミニッツにまとめ、双方署名確認の上 2 通を作成して交換した。

5 . その他

JICA 事務所報告にあたっては、調査結果に基づき、着実に進捗しているとの評価を報告した、この中で、教育機関としては蔵書数が貧弱であることが話題になった。今後関係者の努力で蔵書の増強に努める必要がある。また、第2期協力の要請についての技術的立場での意見を求められたので、調査団としては、現協力の現地化が着実に進行している状況にかんがみ、第2期というより、今後の財政基盤強化、東アフリカ諸国に対するサービス拠点としての機能強化などを考え、新たな協力を立ち上げる方がよいのではないかと考えを述べた。また、現地化が進んでいるとはいえ、ルーチン化するには時間が必要なことも事実であり、何らかの形で協力を続行することが当面必要であることを述べた。所長からは、ケニア測量局は自助努力、人材の定着などの点で比較的に対応のよい協力相手であるとの認識が示された。

付 属 資 料

- 1 . ミニッツ
- 2 . チーフアドバイザー報告書
- 3 . KISM 校長報告書
- 4 . 評価表
- 5 . KISM の人員配置状況
- 6 . 合同委員会議案

1. ミニッツ

MINUTES OF THE MEETINGS
BETWEEN
THE JAPANESE ADVISORY TEAM
AND
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE REPUBLIC OF KENYA
ON
THE JAPANESE TECHNICAL COOPERATION
FOR
THE KENYA INSTITUTE OF SURVEYING AND MAPPING PROJECT

The Japanese Advisory Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Masaru KAIZU visited the Republic of Kenya from January 19 to 29, 1998 for the smooth and successful implementation of the Kenya Institute of Surveying and Mapping Project (hereinafter referred to as "the Project").

During its stay in the Republic of Kenya, the Team exchanged views and had a series of discussions with the Kenyan authorities concerned in respect of the implementation and progress of the technical cooperation programs for the Project.

As a result of the discussions, both sides made the Minutes of Meetings attached hereto.

Nairobi, January 28, 1998

海津 優

Mr. Masaru KAIZU

Leader,
Advisory Team,
Japan International Cooperation Agency

Mohammed Kaityany

Mr. Mohammed KAITTANY

Permanent Secretary,
Ministry of Lands and Settlement,
The Republic of Kenya

ATTENDANTS LIST OF THE MEETING

KENYAN SIDE

1. Mr. P. B.M Ngugi
Chairman
Deputy Secretary (Finance),
Ministry of Lands and Settlement
2. Mr. A. K. Njuki
Director of Surveys
Ministry of Lands and Settlement
3. Mr. W. N. K. Murage
Deputy Secretary (Development)
Ministry of Lands and Settlement
4. Mr. J. K. Karu
Deputy Chief Economist
Ministry of Lands and Settlement
5. Mr. J. R. R. Aganyo
Ag. Deputy Director of Surveys
Ministry of Lands and Settlement
6. Mr. H. Nyapola
Ag. Principal of KISM
Ministry of Lands and Settlement
7. Mr. K. Mwero
Ag. Deputy Principal of KISM
Ministry of Lands and Settlement
8. Mr. J. K. Mwaura
Administrative Secretary of KISM
Ministry of Lands and Settlement
9. Mr. J. K. M'Agere
Public Relations Officer
Ministry of Lands and Settlement
10. Mr. I. O. Ouma
Academic Secretary of KISM
Ministry of Lands and Settlement
11. Mr. W. N. Kamau
Ag. HOD Land Surveying Department / KISM
Ministry of Lands and Settlement
12. Mr. E. O. T. Ondiek
Ag. HOD Cartography Department/ KISM
Ministry of Lands and Settlement
13. Mr. D. Njubi
Ag. HOD Photogrammetry and Remote Sensing
Department / KISM, Ministry of Lands and Settlement
14. Mr. S. Mugadi
Ag. HOD Map Reproduction Department/ KISM
Ministry of Lands and Settlement



JAPANESE SIDE

- | | |
|----------------------|--|
| 1. Mr. M. Kaizu | Leader, Advisory Team,
Construction College, Ministry of Construction |
| 2. Mr. H. Tsunesumi | Geographical Survey Institute, Ministry of Construction |
| 3. Mr. N. Kubo | Geographical Survey Institute, Ministry of Construction |
| 4. Mr. S. Saito | National Land Agency |
| 5. Mr. T. Takahara | Social Development Cooperation Department, JICA |
| 6. Mr. M. Akiyama | JICA Chief Advisor, KISM |
| 7. Mr. S. Yasui | JICA Project Coordinator, KISM |
| 8. Mr. H. Murayama | JICA Expert for Training Planning, KISM |
| 9. Mr. A. Suzuki | JICA Expert for Geodesy, KISM |
| 10. Mr. S. Onishi | JICA Expert for Cartography, KISM |
| 11. Mr. B. Urabe | JICA Expert for Photogrammetry and Remote Sensing, KISM |
| 12. Mr. K. Fukasawa | JICA Expert for Cadastral Survey, KISM |
| 13. Mr. S. Iida | JICA Expert for Map Reproduction, KISM |
| 14. Mr. A. Matsumoto | Deputy Resident Representative, JICA Kenya Office |
| 15. Mr. T. Murase | JICA Kenya Office |



THE ATTACHED DOCUMENT

I. Review of the progress

The Team studied the progress reports submitted by the Kenya Institute of Surveying and Mapping (hereinafter referred to as "the Institute"). Through discussions with the Kenyan authorities, the Team observed the following progress and the efforts made by the Institute.

1. Activities of the Project

Activities of the Project are shown in Annex-1.

2. Input from both sides

(1) Japanese side

1) Dispatch of Japanese experts

a. Long-term experts

In accordance with Tentative Schedule of Implementation for the Project, the Japanese side dispatched long-term experts in eight (8) fields as follows:

- (a) Chief Advisor
- (b) Project Coordinator
- (c) Training Planner
- (d) Expert on Geodesy
- (e) Expert on Cadastral Surveying
- (f) Expert on Cartography
- (g) Expert on Photogrammetry & Remote Sensing
- (h) Expert on Map Reproduction

Details of their assignment are shown in Annex-2.

b. Short-term experts

The Japanese side dispatched twenty (20) short-term experts .

Details of their assignment are shown in Annex-3.

2) Training of counterpart personnel in Japan

The Japanese side received sixteen (16) Kenyan counterpart personnel.

Details of their training are shown in Annex-4.

3) Provision of machinery and equipment

The Japanese side provided the machinery and equipment as follows;

JFY 1994	42 million Yen	Total Station System, vehicle etc.
JFY 1995	55.5 million Yen	LIS, GPS receiver, film processor etc.
JFY 1996	99 million Yen	Cadastral Information System, vehicle, Desk Top Publishing System etc.



(2) Kenyan side

1) Counterpart and administrative personnel

Assignment of counterpart personnel and administrative personnel are shown in Annex-5.

2) Building and facilities

The building and facilities requested by the Government of Kenya and provided for under the Japanese Grant Aid scheme were completed by the end of November 1997, and are now in use.

3) Recurrent budget

The Kenyan side allocated Ksh 12,627,640 in Kenyan fiscal year 1997/98 as recurrent budget for the Project.

4) Development budget

The Kenyan side allocated Ksh 18,127,860 in Kenyan fiscal year 1997/98 as development budget for the Project.

3. Achievement of Project purpose

(1) Evaluation (Internal Examinations)

During the academic year 1997, 67 out of 69 Stage II trainees passed examinations and proceeded to Stage III.

All 76 Stage I trainees passed examinations and proceeded to Stage II.

(2) Recruitment of Trainees

With the completion of KISM facilities, and in accordance with the Minutes of Meeting of the first Joint Coordinating Committee, the Institute has managed to recruit the number of trainees as stated in R/D in both Diploma and Higher Diploma programs with effect from January 1998.

II. Implementation schedule of the Project

The Project will be implemented in accordance with the TSI in Annex-6 and Plan of Operation for Whole Period in Annex-7.



III. Issues of discussion

-Revision of the Project Design Matrix (PDM)

According to the minutes of meeting of the first Joint Coordination Committee held in February 1996, the PDM for the Project is to be revised.

The Institute submitted the draft of revised PDM to the second Joint Coordinating Committee meeting held in January 1998, and both Kenyan authorities and Japanese advisory team reviewed and agreed on the new PDM shown as ANNEX-8

IV. The Future of KISM

During the discussion, both sides agreed on the necessity of enhancement of continuity and sustainability of the Institute.

In addition to the internal effort being taken by Kenyan side, the mission was notified that the Government of Kenya had already submitted to the Government of Japan a request of related new projects comprising of Project Type Technical Cooperation, Grant Aid and the Third Country Training Program to ensure there is continuity and sustainability of KISM.

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ANNEX-1 Activities of the Project

1. Curriculum Development

1.1. Diploma Courses

The following four (4) courses at diploma level are being conducted at KISM since January 1996.

- Land Surveying
- Cartography
- Photogrammetry and Remote Sensing
- Map Reproduction

1.2. Higher Diploma Courses

Kenya Institute of Education (KIE) is currently in the process of finalizing the development of Higher Diploma curricula for the disciplines below. Meanwhile the Institute will use the draft of the syllabi awaiting approval.

- Land Surveying
- Cartography
- Photogrammetry and Remote Sensing

2. Teaching Material Development

Text books for core subjects in Diploma courses have been continuously developed in collaboration with Japanese experts and Kenyan counterparts. The table below shows the list of text books developed. In 1998, each department will embark on the revision of all the existing text books for all stages.

Department	Title
Land Surveying	1. Survey Control (I) 2. Survey Control (II) 3. Surveying Instruments (I) 4. Surveying Instruments (II) 5. Land Surveying Practice 6. Topographical Surveying Notes 7. Engineering Surveying (I)
Cartography	1. Cartography (I) Vol. 1 2. Cartography (I) Vol. 2 3. Cartography (II) Vol. 1 4. Cartography (II) Vol. 2 5. Topographic and Cadastral Cartography
Photogrammetry and Remote Sensing	1. Photogrammetry (I) 2. Photogrammetry (II)
Map Reproduction	1. General Printing Studies 2. Printing Science 3. Printing Origination (I) 4. Printing Origination (II) 5. Photomechanical Processes 6. Machine Printing (I) 7. Machine Printing (II)
Physical Science	1. Geography (I) 2. Geography (II)

3. Projects

3.1. Revision of the Nairobi National Park Map

The implementation of this project is on-going and is being carried out in phases through four major stages which were shared out among the four technical departments of KISM, namely - The Land Surveying, Photogrammetry and Remote Sensing, Cartography and Map Reproduction. Each department took charge of functions that were relevant to their respective disciplines. So far the Land Surveying and Photogrammetry and Remote Sensing departments have completed their part. Meanwhile the Cartography and Map Reproduction departments are to complete their portions and finally publish the map.

3.2. Determination of transformation parameters between WGS 84 and Clarke 1880 spheroids

The implementation of this project has been on-going, and has so far covered about three quarters of the intended total coverage. The areas that have so far been covered include the coast, parts of Rift Valley, Nairobi and western regions. The overall coverage in these areas has yet to be intensified so as to be able to determine the most probable transformation parameters.

3.3. Co-ordinating Kenyan airports navigation utility installations into WGS 84 reference system

The project was implemented in collaboration with the clients namely the Directorate of Civil Aviation, Department of Defence and Ministry of Transport and Communication. The aim of the project was to co-ordinate Kenyan airports navigation installations by WGS 84 system. The field survey was carried out by KISM staff. All logistics were met by the clients.

3.4. GPS monitoring station

The Land Surveying Department of the Institute established a continuous GPS monitoring station upon which all referencing of observed values would be made.

3.5. Monitoring of Crustal Deformation of the Kenyan Rift

The Land Surveying Department of the Institute in collaboration with the researchers from Japanese Universities jointly are conducting this project.

3.6. Accuracy Evaluation of DEM derived from Digital Chart of the World in Kenya

The Cartography Department of KISM and The Geographical Survey Institute of Japan jointly conducted this project. The results were presented at the International Cartographic Association Conference held in Stockholm in June 1997.

4. KISM Seminar on Survey New Technology

In order to introduce new technology in the fields of surveying and mapping to the Kenyan surveying and mapping society as well as commemorating the inauguration of KISM new facility, a one week seminar was held from January 26 to 29, 1998. The seminar activities included technical paper presentations, demonstrations of equipment performance and video shows.

ANNEX-2. List of Japanese Long Term Experts dispatched

1) Chief Advisor

Taketsune Hosono (October 1 1994--May 27 1995)

Minoru Akiyama (June 1 1995--)

2) Project Coordinator

Kenji Isomoto (October 16 1994--December 15 1996)

Shigemi Yasui (November 29 1996--)

3) Training Planner

Hideki Murayama (February 22 1995--)

4) Cartography

Tamotsu Saito (October 1 1994--March 28 1996)

Sumio Onishi (March 13 1996--)

5) Geodesy

Kiyohiro Miyazaki (July 1 1994--June 30 1997)

Akira Suzuki (June 12 1997--)

6) Map Reproduction

Shoichi Hara (October 1 1994--August 12 1997)

Shigeru Iida (July 31 1997--)

7) Cadastral Surveying

Masato Nakashima (June 29 1995--June 28 1997)

Kazuaki Fukasawa (June 12 1997--)

8) Photogrammetry and Remote Sensing

Bokuro Urabe (September 1 1995--)

ANNEX-3. List of Japanese Short Term Experts dispatched

JFY 1995

1. Tetsuro Imakiire (Geodesy)
2. Hiroyuki Katsuta (Cartography)
3. Katsuhiko Goto (Geodesy)
4. Shunro Hokugo (Geodetic Survey)
5. Rikizo Miyasaka (Cartography)
6. Shigeru Iida (Map Reproduction)
7. Hiroshi Hada (Cadastral Surveying)
8. Jun Sato (Photogrammetry)
9. Yoshikazu Fukushima (Training Management)
10. Yuki Kuroishi (Training Management)

JFY 1996

11. Shunro Hokugo (Geodesy)
12. Kenji Yoshihara (Map Reproduction)
13. Junichi Koseki (Cadastral Surveying)
14. Takeshi Hirai (Cartography)
15. Kesami Koido (Photogrammetry and Remote Sensing)

JFY 1997

16. Ryosuke Suzuki (Cadastral Information System)
17. Tsukasa Hosomura (Cadastral Surveying)
18. Joji Harada (Photogrammetry and Remote Sensing)
19. Masaki Murakami (Surveying and Mapping)
20. Takeshi Hirai (Cartography)



ANNEX-4. List of counterpart personnel who received training in Japan

1. K. NGENO (Photogrammetry)
2. W. MUASYA (Cartography)
3. A. K. NJUKI (Surveying and Mapping)
4. J. O. SOGOH (Global Mapping)
5. C. M. K. MWANGI (Cartography)
6. S. F. MUGADI (Map Reproduction)
7. G. O. AYOO (Land Surveying)
8. W. N. KAMAU (Surveying and Mapping)
9. H. NYAPOLA (Training Administration)
10. K. MWERO (Training Administration)
11. P. W. K. GATHIORI (Land Surveying)
12. E. J. AWINO (Cartography)
13. M. O. OMACH (Map Reproduction)
14. E. T. ONDIEK (Cartography)
15. S. AYUGI (Photogrammetry)
16. C. M. LWANGA (Land Surveying)



ANNEX-5. List of Actual Counterpart Personnel

H. Nyapola	Ag. Principal
K. Mweru	Ag. Deputy Principal
J. K. Mwaura	Administrative Secretary

Department of Land Surveying

1. W. N. Kamau	Ag. HoD
2. C. M. Kamamia	
3. G. Ayoo	
4. I. L. Ateya	
5. G. O. Owino	
6. J. A. Amimo	
7. H. E. Waithaka	
8. C. M. Ndegwa	
9. T. G. Ngigi	
10. P. Kioi	
11. C. M. Lwanga	

Department of Cartography

1. E. Ondiek	Ag. HoD
2. P. Ogao	
3. C. Mwangi	
4. D. E. Musiega	
5. W. Muasya	
6. E. Awino	
7. H. Jumba	
8. E. Mandi (Ms)	
9. S. Ng'ang'a (Ms)	
10. O. Otweyo	

Department of Photogrammetry & Remote Sensing

1. D. Njubi	Ag. HoD
2. O. Ayugi	
3. A. Imwati	
4. I. Ouma	
5. R. K. Rugut	
6. C. Kalenywa (Ms)	
7. K. Ng'eno	
8. J. M. Njaibu	
9. D. Korir	
10. J. Ileri	



Department of Map Reproduction

1. S. Mugadi Ag. HoD
2. P. Congo
3. J. M. Owino
4. M. O. Omach
5. W. K. Ng'etich
6. C. Ochieng (Ms)
7. J. W. Ezra (Ms)
8. S. Rotich

Humanity Courses

1. O. M. Kitonyi Ag. HoD
2. J. K. Katunga
3. M. Kimani
4. M. Ng'ang'a (Ms)
5. P. M. Kyalo
6. J. Matheka

Administration Personnel

31 Administration personnel are assigned.

Security Personnel

16 Security personnel are assigned.



ANNEX -6. TENTATIVE SCHEDULE OF IMPLEMENTATION

Year	1994	1995	1996	1997	1998	1999
Month	1 4 7 10	1 4 7 10	1 4 7 10	1 4 7 10	1 4 7 10	1 4 7 10
Term of Cooperation	---	---	---	---	---	---
1. Activities						
(1) Pre-service Diploma Course						
1st						
2nd						
3rd						
a. Land Surveying						
b. Cartography						
c. Photogrammetry & Remote Sensing						
d. Map Reproduction						
(2) In-service Higher Diploma Course						
1st						
2nd						
3rd						
a. Land Surveying						
b. Cartography						
c. Photogrammetry & Remote Sensing						
(3) In-service Short Term Training						
2. Inputs of Japanese Side						
(1) Dispatch of Long Term Experts						
a. Chief Advisor						
b. Project Coordinator						
c. Training Planner						
d. Geodesy						
e. Cadastral Surveying						
f. Cartography						
g. Photogrammetry & Remote Sensing						
h. Map Reproduction						
(2) Dispatch of Short Term Experts						
a. Land Surveying						
b. Cartography						
c. Photogrammetry & Remote Sensing						
d. Map Reproduction						
(3) Training of Kenyan Personnel in Japan						
(4) Provision of Equipment						
3. Inputs of Kenyan Side						
(1) Land, Buildings and Facilities						
a. Land for the KISM at SOK Field H.Q.						
b. Buildings & Facilities for Training						
c. Housing for Staff						
d. Buildings & Facilities for Welfare						
(2) Budget for the Implementation of the Project						
(3) Assignment of Counterpart & Administrative Personnel						

Note: (a) This is tentatively formulated on condition that the necessary budget will be secured.

(b) This Schedule is subject to change within the scope of the Record of Discussions, if necessity arises.

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ANNEX-7. Plan of Operation for Whole Period

Project: Kenya Institute of Surveying and Mapping (KISM)

Project Purpose: The Kenya Institute of Surveying and Mapping (KISM) will be established as the training organization for fostering qualified officers in the fields of surveying and mapping.

Output	Activities	Target	Schedule (Japanese Fiscal Year)						Responsible Person in Project Team	Inputs*	Remarks
			1994	1995	1996	1997	1998	1999			
1. Organization for KISM is to be established	1.1 To assign Appropriate Personnel	Number of Personnel Counterparts : 60 Administrative : 30 Annual Intake of Trainees Diploma : 103 Higher Diploma: 30	---	---	---	---	---	---	Principal Chief Advisor	Deputy Principal Project Coordinator Admin. Secretary Training Planner Long Term Experts Administrative Staff	Personnel Assignment shall be completed by beginning of 1998
	1.2 To establish the Administration System of KISM		---	---	---	---	---	---			
	1.3 To establish the Recruiting & Selection System of the Trainees		---	---	---	---	---	---			
2. Appropriate Training Facilities and Equipment are to be installed	2.1 To establish Training Facilities	Land, Building and Facilities Management Committee for Equipment and Supplies	---	---	---	---	---	---	Principal Chief Advisor Deputy Principal Project Coordinator Admin. Secretary	Facilities Equipment Heads of Departments, Long Term Experts, Staff of Stores	Facilities and Equipment under Grant Aid Scheme are expected to be installed by September 1997
	2.2 To establish Management & Maintenance System of Equipment & Supplies		---	---	---	---	---	---			
	2.3 To keep Maintenance & Utilization Records of Equipment & Supplies		---	---	---	---	---	---			
3. Sufficient Number of the Kenyan Lecturers for KISM are to be upgraded	3.1 To introduce Preparation, Managing & Evaluating Method of the Training Courses	Counterpart Personnel Heads of Department Senior Lecturers Lecturers Assistant Lecturers	---	---	---	---	---	---	Principal Chief Advisor Deputy Principal Training Planner	Heads of Departments Long Term Experts Lecturers Short Term Experts	Monthly, Quarterly and Annual Report for Institute shall be developed
	3.2 To improve the Level of Technical Knowledge and Teaching Method		---	---	---	---	---	---			
	3.3 To evaluate the Acquisition of Technical Knowledge		---	---	---	---	---	---			
4. Guidelines, Syllabi and Curricula for Training Courses are to be developed	4.1 To develop Guidelines	Geodesy Cadastral Surveying Cartography Photogrammetry & Remote Sensing Map Reproduction	---	---	---	---	---	---	Principal Chief Advisor Deputy Principal Training Planner	Heads of Departments Long Term Experts Lecturers Short Term Expert	Syllabi for All Courses shall be authorized by KIE
	4.2 To develop Syllabi		---	---	---	---	---	---			
	4.3 To develop Curricula		---	---	---	---	---	---			
5. Text Books & Teaching Materials for Training Courses are to be developed	5.1 To develop Text Books	Geodesy Cadastral Surveying Cartography Photogrammetry & Remote Sensing Map Reproduction	---	---	---	---	---	---	Deputy Principal Training Planner	Heads of Departments Long Term Experts Lecturers Short Term Experts	Random Survey for the Project shall be implemented by Management Committee
	5.2 To develop Teaching Materials		---	---	---	---	---	---			
6. Training in the fields of Surveying and Mapping are to be implemented	6.1 To implement Pre-service Diploma Course	Diploma : 4 courses Higher Diploma : 3 courses Short Term Training and/or Seminar	---	---	---	---	---	---	Principal Chief Advisor	Deputy Principal Training Planner Heads of Departments Long Term Experts Lecturers Short Term Experts	Higher Diploma Course will be postponed until the facilities are available
	6.2 To implement In-service Higher Diploma Course		---	---	---	---	---	---			
	6.3 To introduce Up-to-date Technology		---	---	---	---	---	---			

*Personnel, Equipment and other Measures necessary for implementing the activities

ANNEX-8.

PROJECT DESIGN MATRIX (PDM)

	Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Old	<p><Overall Goal></p> <ul style="list-style-type: none"> - The required number of the qualified officers in the fields of surveying and mapping will be satisfied 	<ul style="list-style-type: none"> - Number of the qualified officers in the Survey Department and other related organizations 	<ul style="list-style-type: none"> - Monthly, Quarterly and Annual Reports of the Survey Department and other related organizations - Circular letters of appointments of the Survey Department and other related organizations - Random survey of the Project 	
Addendum		<ul style="list-style-type: none"> - Number of vacant posts for technical officers in the Survey Department 	<ul style="list-style-type: none"> - List of approved personnel by DPM and posts filled by technical staff, description of staff by Job Group and profession 	<ul style="list-style-type: none"> - Technical officers approved by DPM shall be recruited
Reason	<ul style="list-style-type: none"> - No change 	<ul style="list-style-type: none"> - More practical indicator shall be introduced 	<ul style="list-style-type: none"> - More quantitative evaluation table shall be introduced 	<ul style="list-style-type: none"> - More practical target shall be introduced
New	<p><Overall Goal></p> <ul style="list-style-type: none"> - The required number of the qualified officers in the fields of surveying and mapping will be satisfied 	<ul style="list-style-type: none"> - Number of the qualified officers in the fields of surveying and mapping in the Survey Department and other related organizations - Number of vacant posts for qualified officers in the fields of surveying and mapping in the Survey Department and other related Governmental organizations 	<ul style="list-style-type: none"> - Monthly, Quarterly and Annual Reports of the Survey Department and other related organizations - Circular letters of appointments of the Survey Department and other related organizations - Random survey of the Project, questionnaires to ex-graduates, famis, etc. - List of approved personnel by DPM and posts filled by technical staff, description of staff by Job Group and profession 	<ul style="list-style-type: none"> - Technical officers approved by DPM shall be recruited

Old	<p><Project Purpose></p> <ul style="list-style-type: none"> - The Kenya Institute of Surveying and Mapping (KISM) will be established as the training organization for fostering qualified officers in the fields of surveying and mapping 	<ul style="list-style-type: none"> - Number of trainees who have completed training courses - Number of successful candidates of the national examinations - Number of trainees who have been taking training courses 	<p>Annual Reports</p> <ul style="list-style-type: none"> - Lists of trainees - Results of national examinations 	<ul style="list-style-type: none"> - Successful candidates of national examination for Diploma shall be employed by the Survey Department or other related organizations - Successful candidates of national examination for Higher Diploma shall be retained by the Survey Department or other related organizations
Addendum		<ul style="list-style-type: none"> - Number of Diploma graduates employed - Average years of service by the Higher Diploma graduates to the Survey Department or other related organizations 	<p>Annual Reports</p> <ul style="list-style-type: none"> - Lists of successful graduates of the Diploma course employed by the Survey Department or other related organizations - Present employers of each Higher Diploma graduates 	

20

Reason	- No change			- No change
New	<p><Project Purpose></p> <p>The Kenya Institute of Surveying and Mapping (KISM) will be established as the training organization for fostering qualified officers in the fields of surveying and mapping</p>	<ul style="list-style-type: none"> - Number of trainees who have completed training courses - Number of successful candidates of the national examinations - Number of trainees who have been taking training courses - Number of Diploma graduates employed - Average years of service by the Higher Diploma graduates to the Survey Department or other related organizations 	<p>Annual Reports</p> <ul style="list-style-type: none"> - Lists of trainees - Results of national examinations - Lists of successful graduates of the Diploma course employed by the Survey Department or other related organizations - Present employers of each Higher Diploma graduates 	<ul style="list-style-type: none"> - Successful candidates in the national examination for Diploma shall be employed by the Survey Department or other related organizations - Successful candidates in the national examination for Higher Diploma shall be retained by the Survey Department or other related organizations

Old	<p><Outputs/Results></p> <ol style="list-style-type: none"> 1. Organization for KISM is to be established 2. Appropriate training facilities and equipment are to be installed 3. Sufficient number of the Kenyan lecturers for KISM are to be upgraded 4. Guidelines, syllabi and curricula for the training courses are to be developed 5. Text books and teaching materials for the training courses are to be developed 6. Precise training in the fields of surveying and mapping are to be established 	<ol style="list-style-type: none"> 1.1 Experienced and qualified administrative personnel 1.2 Recruiting & selection system of trainees 2. Management system of equipment & supplies 3. Experienced and qualified lecturers 4. Approved guidelines, syllabi and curricula 5. Variety, quantity and quality of text books & teaching materials 6. Course contents 	<p>Annual Reports for the Institute</p> <ul style="list-style-type: none"> - Financial Reports - Plan & actual results of training courses - Maintenance records of equipment - Utilization records of equipment & supplies - Lists of entrance requirements - Service records of qualified officers - Lists of text books & teaching materials <p>Regular Reports by Experts and Lecturers</p> <ul style="list-style-type: none"> - Check lists of lectures by Experts <p>Random survey of the Project</p> <ul style="list-style-type: none"> - Questionnaires to trainees about training 	<ul style="list-style-type: none"> - Counterpart Personnel shall be retained - Administrative Personnel shall be retained - Selected trainees shall be retained - Operating Expenses for KISM shall be secured
Addendum / change		<ol style="list-style-type: none"> 1.1 Adequate administrative function 1.2 Budget for operating expenses 1.3 Average lecture hours of one lecturer 1.4 Mean KCSE scores of admitted trainees for Diploma course 4. Consistent guidelines, syllabi and curricula 5.1 Subject coverage by text books & teaching materials 5.2 Appropriateness of text books & teaching materials 	<p>Annual Reports for the Institute</p> <ul style="list-style-type: none"> - Organization Chart - Service records of qualified officers - Budget for operating expenses - Average lecture hours of one lecturer - Mean KCSE scores of admitted trainees for Diploma course - Subject coverage by text books & teaching materials 	
Reason	- No change			- No change

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<p>New</p>	<p><Outputs/Results></p> <ol style="list-style-type: none"> 1. Organization for KISM is to be established 2. Appropriate training facilities and equipment are to be installed 3. Sufficient number of the Kenyan lecturers for KISM are to be upgraded 4. Guidelines, syllabi and curricula for the training courses are to be developed 5. Text books and teaching materials for the training courses are to be developed 6. Precise training in the fields of surveying and mapping are to be established 	<ol style="list-style-type: none"> 1.1 Adequate administrative function 1.2 Budget for operating expenses 1.3 Average lecture hours of one lecturer 1.4 Mean KCSE scores of admitted trainees for Diploma course 2.1 Sufficient facilities, equipment & supplies 2.2 Management system of facilities, equipment & supplies 3 Experienced and qualified lecturers 4 Consistent guidelines, syllabi and curricula 5.1 Subject coverage by text books & teaching materials 5.2 Appropriateness of text books & teaching materials 6 Course contents 	<p>Annual Reports for the Institute</p> <ul style="list-style-type: none"> - Organization Chart - Service records of qualified officers - Financial Report - Budget for operating expenses - Plan & actual results of training courses - Average lecture hours of one lecturer - Lists of entrance requirements - Mean KCSE scores of admitted trainees for Diploma course - Maintenance records of equipment - Utilization records of equipment & supplies - Lists of text books & teaching materials - Subject coverage by text books & teaching materials <p>Regular Reports by Experts and Lecturers</p> <ul style="list-style-type: none"> - Check lists of lectures by Experts <p>Random survey of the Project</p> <ul style="list-style-type: none"> - Questionnaires to trainees about training 	<ul style="list-style-type: none"> - Key function of KISM administration shall be implemented by respective personnel - Operating Expenses for KISM shall be secured - Sufficient number of lecturers shall be assigned - Selected trainees shall be retained - Equipment & materials shall be properly managed - Trained counterparts shall be retained
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Activities	Target (Original)	Target (New)	Reason	Responsible Person	Inputs* (Original)	Inputs* (New)	Reason
1.1 To assign Appropriate Personnel 1.2 To establish the Administration System of KISM 1.3 To establish the Recruiting and Selection System of the Trainees	Number of Personnel Counterpart : 60 Administrative : 30 Annual IT of Trainees Diploma : 103 Higher Diploma: 30	Smooth and proper administration and course operation Annual IT of Trainees Diploma : 103 Higher Diploma: 30	Staff number is determined by DPM. Number itself does not mean much.	Principal, Chief Advisor	Deputy Principal, Coordinator, Admin. Secretary, Training Planner, Long Term Experts, Admin. Staff	Deputy Principal, Coordinator, Admin. Secretary, Training Planner, Long Term Experts, Admin. Staff	No change
2.1 To establish Training Facilities 2.2 To establish Management and Maintenance System of Equipment and Supplies 2.3 To keep Maintenance and Utilization Records of Equipment and Supplies	Land, Building and Facilities Management Committee for Equipment and Supplies	Land, Building and Facilities Management Committee for Equipment and Supplies	No change	Principal, Chief Advisor Deputy Principal, Coordinator, Admin. Secretary	Facilities, Equipment Heads of Departments, Long Term Experts, Staff of Stores	Grant Aid Facilities, Equipment Heads of Departments, Long Term Experts, Staff of Stores	Grant Aid shall be added
3.1 To introduce Preparation, Managing and Evaluating Method of the Training Courses 3.2 To improve the Level of Technical Knowledge and Teaching Method	Counterpart Personnel Heads of Department, Senior Lecturers, Lecturers, Assistant Lecturers	Committee for Course Operation Annual Technical Reports Teaching Manual	Clearer target shall be introduced	Principal, Chief Advisor Deputy Principal, Training Planner	Heads of Departments, Long Term Experts, Short Term Experts, Lecturers	Counterpart Training on New Technology and Teaching Method Heads of Departments, Long Term Experts, Short Term Experts, Lecturers	Way of action shall be added
4.1 To develop Guidelines 4.2 To develop Syllabi 4.3 To develop Curricula	Geodesy, Cadastral Surveying, Cartography, Photogrammetry, Remote Sensing, Map Reproduction	Improvement and authorization of Syllabi Consistency among Guidelines, Syllabi and Curricula	Original target does not mean much. More practical target shall be introduced	Principal, Chief Advisor	Deputy Principal, Training Planner, Heads of Departments, Long Term Experts, Lecturers	Deputy Principal, Training Planner, Heads of Departments, Long Term Experts, Lecturers	No change
5.1 To develop Text Books 5.2 To develop Teaching Materials	same as above	Sufficient and appropriate Text Books and Teaching Materials	Ditto	Deputy Principal, Training Planner	Heads of Departments, Long Term Experts, Lecturers	Heads of Departments, Long Term Experts, Short Term Experts, Lecturers	Short Term Experts are also involved
6.1 To implement Pre-service Diploma Course 6.2 To implement In-service Higher Diploma Course 6.3 To introduce Up-to-date Technology	Diploma : 4 courses Higher Diploma : 3 course Short Term Training and Seminar	Diploma : 4 courses Higher Diploma : 3 course Short Term Training and Seminar	No change	Principal, Chief Advisor	Deputy Principal, Training Planner, Heads of Departments, Long Term Experts, Lecturers, Short Term Experts,	Deputy Principal, Training Planner, Heads of Departments, Long Term Experts, Lecturers, Short Term Experts,	No change

* Person, Equipment and others necessary for implementing the activities

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2. チーフアドバイザー報告書

Chief Advisor's Report as of February 22, 1996

1. Dispatch of Japanese Experts

1.1 Long Term Experts

According to the R/D, eight experts are being dispatched during the project period. This has been completed by September, 1995 when a photogrammetry expert gathered to KISM. Experts assigned to KISM since October, 1994 are those as follows.

1. Chief Advisor :	Mr. Taketsune Hosono	(Oct. '94 - May '95)
	Mr. Minoru Akiyama	(Jun. '95 -)
2. Coordinator :	Mr. Kenji Isomoto	(Oct. '94 -)
3. Training Planner :	Mr. Hideki Murayama	(Feb. '95 -)
4. Geodesy Expert :	Mr. Kiyohiro Miyazaki	(Oct. '94 -)
5. Cartography Expert :	Mr. Tamotsu Saito	(Oct. '94 -)
6. Photogrammetry and Remote Sensing Expert :	Mr. Bokuro Urabe	(Sept. '95 -)
7. Map Reproduction Expert :	Mr. Shoichi Hara	(Oct. '94 -)
8. Cadastral Survey Expert :	Mr. Masato Nakashima	(Jun. '94 -)

1.2 Short Term Expert

According to the R/D, short term experts in four fields as Land Surveying, Cartography, Photogrammetry and Remote Sensing, and Map Reproduction are being dispatched at appropriate occasions during the project period. Ten short term experts have been dispatched for services since October 1994 as listed below.

1. Experts for New Technology

Two experts for GPS surveying and one expert for GIS technology came in July, 1995 and stayed three weeks to introduce new technology mainly for the Model Course students.

1. Mr. T. Imakiire	July 19, 1995 - Aug. 12, 1995	Expert in GPS
2. Mr. K. Goto	July 19, 1995 - Aug. 12, 1995	Expert in GPS
3. Mr. K. Katsuta	July 19, 1995 - Aug. 12, 1995	Expert in GIS

2. Experts for Text Book Development

Five experts in respective fields came in October, 1995 and stayed six weeks to work with Long Term Experts and Kenyan Counterparts to develop textbooks for each core subjects.

4. Mr. T. Hokugo	Oct. 16, 1995 - Nov. 30, 1995	Expert in Geodesy
5. Mr. R. Miyasaka	Oct. 16, 1995 - Nov. 30, 1995	Expert in Cartography
6. Mr. S. Iida	Oct. 16, 1995 - Nov. 30, 1995	Expert in Map Reproduction
7. Mr. H. Hada	Oct. 16, 1995 - Nov. 30, 1995	Expert in Cadastral Surveying
8. Mr. J. Sato	Nov. 4, 1995 - Nov. 30, 1995	Expert in Photogrammetry

3. Experts for Management

Two experts in Administration and Management came in November, 1995 and stayed two weeks to advise KISM management and administration.

9. Dr. H. Kuroishi	Nov. 19, 1995 - Dec. 2, 1995	Expert in Management
10. Mr. Y. Fukushima	Nov. 19, 1995 - Dec. 2, 1995	Expert in Management

2. Provision of Machinery and Equipment

According to the R/D, the Government of Japan (GOJ) will provide such machinery, equipment and other materials necessary for the implementation of the project. In the Japanese fiscal year 1994, equipment etc. in the value of ¥ 42 million were provided. In the fiscal 1995, equipment etc. values ¥ 55.5 million are confirmed to be provided, and most of them have already provided. Besides, one Land Information System brought and demonstrated by a short term expert was donated to KISM.

3. Training of Kenyan Personnel in Japan

According to the R/D, GOJ is expected to train some Kenyan counterpart personnel in Japan to improve their abilities. Nine officers have been trained since October, 1994 as listed below:

1. Mr. K. Ngeno	Oct. 18, 1994 - Feb. 28, 1995	Counterpart Training in Photogrammetry
2. Mr. W. Muasya	Nov. 29, 1994 - Feb. 28, 1995	Counterpart Training in Cartography
3. Mr. A.K. Njuki	Mar. 19, 1995 - Apr. 2, 1995	Counterpart Training in Administration
4. Mr. J.O. Sogoh	Jun. 19, 1995 - Aug. 27, 1995	Group Training in Environmental Mapping
5. Mr. C.M.K. Mwangi	Jun. 19, 1995 - Dec. 16, 1995	Counterpart Training in Cartography
6. Mr. S.F. Mugadi	Jun. 19, 1995 - Dec. 16, 1995	Counterpart Training in Map Reproduction
7. Mr. G.O. Ayoo	Jul. 17, 1995 - Dec. 16, 1995	Counterpart Training in Land Surveying
8. Mr. W.N. Kamau	Jul. 31, 1995 - Jul. 7, 1996	Group Training in Surveying and Mapping II
9. Mr. H. Nyapola	Oct. 16, 1995 - Dec. 16, 1995	Counterpart Training in Administration

4. Major Activities

4.1 Model Training in Geodesy and Cartography

Model Training Course had been conducted from Oct., 1994 to Oct., 1995 in Geodesy and Cartography. Japanese experts provided technical supports, equipment, materials and other services to operate the courses. Through the courses, Kenyan lecturers could be acquainted with teaching methods, course planning and course operation. Besides the traditional techniques in geodesy and cartography, the contemporary technology as GPS (Global Positioning Systems) and GIS (Geographic Information Systems) had also been introduced and demonstrated by the short term experts during the course. The major result of Geodesy Course is reconstruction of triangular points and the major result of Cartography course is the revision of the "City of Nairobi" map. Those results were transferred to the Survey of Kenya and qualified as the official survey results.

4.2 Syllabus for Diploma in Map Reproduction

Since the diploma course in map reproduction is completely new course in Kenya, its syllabus have to be developed before the course starts. Japanese experts and Kenyan counterparts jointly worked in developing the draft of the syllabus. In October, 1995, Kenya Institute of Education (KIE) hold a technical workshop to examine the draft. Japanese experts and Kenyan counterparts participated the workshop and gave major contributions to decide the draft from the technical points of view. The draft syllabus is now waiting for its authorization by subject panel and academic board expected to be held early this year. However, KISM can use the draft syllabus for the course operation since it has passed the technical workshop.

4.3 Teaching Material Development

Adequate text books for core subjects in Diploma courses were not available in Kenya. Therefore, Japanese experts and Kenyan counterparts have developed new text books with the help of short term experts. Seven volumes of text books for the first stage were developed before the start of the Diploma course. They are "Survey Control", "Surveying Instruments", "Land Surveying Practice", "Topographical Surveying Notes", "Cartography", "Photogrammetry" and "Print Origination". Those text books were distributed to each students and used in lectures and practical.

4.4 Improvement of Lecturer's Teaching Ability

Most Kenyan counterparts had no experience of teaching students in class. Therefore, the project hold one week seminar for teaching method in December, 1995. The seminar was conducted by the

Kenya Technical Teacher's College under the sponsorship of the project. Through the seminar, expecting lecturers could improve their communication skills, could grasp how to prepare and follow up their lectures and how to evaluate students.

4.5 KISM Management

According to the R/D, Joint Coordinating Committee will meet once a year. The first committee is which this report is to be submitted. In order to make mutual cooperation in KISM more effective, the Steering Committee chaired by the Director of Surveys was established under the Joint Coordinating Committee. Three meetings as listed below were held so far.

- | | |
|-----------------------|---------------|
| 1. The first meeting | Aug. 16, 1995 |
| 2. The second meeting | Oct. 11, 1995 |
| 3. The third meeting | Feb. 19, 1996 |

5. Land, Buildings, Facilities, Equipment, etc.

According to the R/D, the Government of the Republic of Kenya (GOK) is expected to take necessary measures to provide land, buildings, facilities, equipment etc., other than the equipment provided through JICA under the project. In this regard, the GOK requested the GOJ for the Grant Aid Assistance on establishment of KISM. In response to the request, GOJ decided to conduct a Basic Design Study and sent three teams listed below to Kenya till its completion.

- | | |
|-------------------|------------------------|
| 1. October, 1994 | led by Mr. Y. Nakahori |
| 2. February, 1995 | led by Mr. M. Akiyama |
| 3. November, 1995 | led by Ms. F. Yoshida |

Based on the result of the Basic Design Study, it is expected that GOJ will start Detailed Design Study as soon as possible followed by its implementation.

6. Plan of Operation for 1996

6.1 Dispatch of Japanese Experts

Eight long term experts will continue to provide services, while some of them may be alternated by his successor. Short term experts in Geodesy, Cartography, Photogrammetry and Remote Sensing, Map Reproduction, and Cadastral Surveying are expected to be dispatched to help teaching material development and to introduce new technology.

6.2 Provision of Machinery and Equipment

In the fiscal 1996, equipment etc. values more than that of fiscal 1995 is expected to be provided.

6.3 Training of Kenyan Personnel in Japan

As far as the Individual Counterpart Training is concerned, four officers in Administration, Land Surveying, Cartography and Map Reproduction are being requested to be trained. Requests for Group Training has not yet been processed.

Chief Advisor's Report (No. 2) as of November 26, 1996

1. Dispatch of Japanese Experts

1.1 Long Term Experts

According to the R/D, eight experts are being dispatched during the project period. Experts completed their term of duty were taken over by their successor so that eight experts are on duty all the time over the project period. Experts assigned to KISM since February 1996, the day of the last report, are those as follows.

(1) Chief Advisor :	Mr. Minoru Akiyama	(Jun. '95 -)
(2) Coordinator :	Mr. Kenji Isomoto	(Oct. '94 -)
(3) Training Planner :	Mr. Hideki Murayama	(Feb. '95 -)
(4) Geodesy Expert :	Mr. Kiyohiro Miyazaki	(Oct. '94 -)
(5) Cartography Expert :	Mr. Tamotsu Saito	(Oct. '94 - Mar. '96)
	Mr. Sumio Onishi	(Mar. '96 -)
(6) Photogrammetry and Remote Sensing Expert :	Mr. Bokuro Urabe	(Sept. '95 -)
(7) Map Reproduction Expert :	Mr. Shoichi Hara	(Oct. '94 -)
(8) Cadastral Survey Expert :	Mr. Masato Nakashima	(Jun. '95 -)

1.2 Short Term Expert

According to the R/D, short term experts in four fields as Land Surveying, Cartography, Photogrammetry and Remote Sensing, and Map Reproduction are being dispatched at appropriate occasions during the project period. Three short term experts have been dispatched for services since February 1996 and two other experts are scheduled to be dispatched by the end of Japanese fiscal 1996 as listed below.

1.2.1 Experts for Text Book Development

Three experts in respective fields came in September 1996 and stayed six weeks to work with Long Term Experts and Kenyan Counterparts to develop Syllabi for Higher Diploma courses and textbooks for Diploma courses in each core subjects.

- (1) Mr. T. Hokugo Sept. 25, 1996 - Nov. 5, 1996 Expert in Geodesy
- (2) Mr. K. Yoshihara Sept. 25, 1996 - Nov. 5, 1996 Expert in Map Reproduction
- (3) Mr. J. Koseki Sept. 25, 1996 - Nov. 5, 1996 Expert in Cadastral Surveying

1.2.2 Experts for Text Book Development

Two more experts in respective fields are expected to come in January, 1997 and stayed six weeks to work with Long Term Experts and Kenyan Counterparts to develop textbooks for each core subjects.

- (4) Expert in Cartography
- (5) Expert in Photogrammetry and Remote Sensing

2. Provision of Machinery and Equipment

According to the R/D, the Government of Japan (GOJ) will provide machinery, equipment and other materials necessary for the implementation of the project. In the Japanese fiscal year 1995, equipment etc. in the value of ¥ 55.5 million were provided. In the fiscal 1996, equipment etc. values ¥ 99 million were allocated. while most of them have not been procured yet. The major equipment procured since February 1996 are computers, GPS instruments, tilting levels, a film processor, a paper drier, waxing machine, contact screens, etc.

3. Training of Kenyan Personnel in Japan

According to the R/D, GOJ is expected to train some Kenyan counterpart personnel in Japan to improve their abilities. So far Three officers have been trained since February 1996 as listed below.

- (1) Mr. W.N. Kamau Jul. 31, 1995 - Jul. 7, 1996 Group Training in Surveying and Mapping II
- (2) Mr. K. Mwero May 13, 1996 - July 7, 1996 Counterpart Training in Administration
- (3) Mr. P.W.K. Gathiori Aug. 19, 1996 - Feb. 14, 1997 Counterpart Training in Land Surveying

Two more officers are expected to start their training in Japan from January, 1997.

- (4) Mr. E.J. Awino Counterpart Training in Cartography
- (5) Mr. M.O. Omach Counterpart Training in Map Reproduction

Besides, two officers have applied for Japanese Mombusho Scholarship for Master Degree courses in Japan. The final result is not announced yet, however, it is highly expected that one of the applicants can be approved.

4. Major Activities

4.1 Diploma Course Implementation

The first stage for the first intake of the Diploma Courses in four disciplines have been conducted from Jan. 1996. Japanese experts provided technical supports, equipment, materials and other services to operate the courses. Throughout the courses, Kenyan lecturers could be acquainted with teaching methods, course planning and course operation.

4.2 Syllabus for Diploma in Map Reproduction

After holding a technical workshop at Kenya Institute of Education (KIE) in October 1995, and a subject panel in December 1995, the Syllabus for Diploma in Map Reproduction was passed and authorized through Technical Course Panel on 12th and 13th May 1996, and Academic Board Meeting on 9th October 1996.

4.3 Syllabi for Higher Diploma in Land Surveying, Cartography and Photogrammetry & Remote Sensing

In line of the change of the Education System in Kenya, Higher Diploma was introduced instead of former Higher National Diploma in the Technical Education Programme (TEP). Since the Higher Diploma Courses are completely new courses in Kenya, the syllabi in the above three disciplines have to be developed before the course starts. Japanese experts both long term and short term and Kenyan counterparts jointly worked in developing the draft of the syllabi. The draft Syllabi were developed and submitted to KIE on 28th October 1996. A technical workshop to examine the draft are expected to be held from 25th November to 6th December 1996 for two weeks.

4.4 Teaching Material Development

Text books for core subjects in Diploma courses have continuously developed in collaboration with Japanese experts and Kenyan counterparts. The table below shows the list of text books developed or almost completed so far.

Department	Title of Text Books	Remarks
Land Surveying	1. Survey Control (I)	Printed
	2. Survey Control (II)	Draft Completed
	3. Surveying Instruments (I)	Printed
	4. Surveying Instruments (II)	Draft Completed
	5. Land Surveying Practice	Printed
	6. Topographical Surveying Notes	Printed

	7. Engineering Surveying (I)	Draft Completed
Cartography	1. Cartography (I) Vol. 1	Printed
	2. Cartography (I) Vol. 2	Printed
	3. Cartography (II) Vol. 1	Printed
	4. Cartography (II) Vol. 2	Draft Completed
Photogrammetry and Remote Sensing	1. Photogrammetry (I)	Printed
	2. Photogrammetry (II)	Draft almost finished
Map Reproduction	1. General Printing Studies	Printed / Revising
	2. Printing Science	Draft almost finished
	3. Print Origination (I)	Printed
	4. Print Origination (II)	Draft Completed
	5. Photomechanical Processes	Printed
	6. Machine Printing (I)	Printed
	7. Machine Printing (II)	Draft almost finished
Physical Science	1. Geography (I)	Printed
	2. Geography (II)	Draft almost finished

4.5 Special Lectures to the Students

Besides the ordinary lectures in line with the respective syllabi, some special lectures have been provided to students. The titles and lecturers are those as follows.

1. 8th March 1996 "Survey and Mapping" Mr. C.M. KAMAMIA
2. 22nd March 1996 "GIS - an Introduction and an Application for Japanese Cadastre" Mr. M. NAKASHIMA
3. 10th May 1996 "General overview of training within Survey of Kenya, and expectation by the Department of Surveys from KISM graduates and their role in serving the Society in their respective disciplines" Mr. W.J. ABSALOMS
" The Survey of Kenya Departmental structure and roles" Mr. A.K. NJUKI
"The organizational structure of the Ministry of Lands and Settlement and specific roles" Mr. P.B.M. NGUGI
4. 24th May 1996 "New Technology in Surveying and Mapping" Mr. M. AKIYAMA
5. 28th June 1996 "Modern Survey Technique" Mr. K. MIYAZAKI
6. 19th July 1996 "Japanese Technical Cooperation" Mr. M. TAGAMI
7. 13th Sept. 1996 "Instruction to Students" Mr. H. NYAPOLA
8. 30th Nov. 1996 "AIDS counseling" Dr. R. LENYA

4.6 In-house Seminar for the Kenyan Lecturers

In order to upgrade technical knowledge and teaching skills of Kenyan Lecturers, In-house Seminars to introduce new technologies, new development and teaching know-how have been held occasionally. The titles and presenters are those as follows.

1. 15th March 1996 "Map Printing - A Comparison Between GSI Japan and SOK Kenya" Mr. S. MUGADI
"Cartography on a Monitor" Mr. C. MWANGI
2. 16th Oct. 1996 "How to make slides" Mr. K. YOSHIHARA
3. 23rd Oct. 1996 "GPS and its engineering application" Mr. J. KOSEKI

4.6 KISM Pamphlet

In order to help others understanding KISM well, a pamphlet to explain function, background, organizational structure and activities of KISM was developed and distributed to those who are

interested in KISM.

4.7 Participation to ISPRS Vienna Congress

The 18th International Congress of ISPRS (International Society of Photogrammetry and Remote Sensing) was held in Vienna, Austria from 9th to 19th July, 1996. The Deputy Principal and the Chief Advisor participated in the congress and presented a poster paper to introduce KISM. The paper was printed in the archives of the congress. The title of the paper is as follows.

"KISM - A New Educational Institute for Survey and Mapping in Kenya"

4.8 Revision of PDM

According to the minutes of the first Joint Coordinating Committee held February 1996, the Project Design Matrix (PDM) of the KISM Project is to be revised. Through the internal discussion in KISM, the draft of revised PDM was made which will be submitted to the second Joint Coordinating Committee for authorization.

5. Land, Buildings, Facilities, Equipment, etc.

According to the R/D, the Government of the Republic of Kenya (GOK) is expected to take necessary measures to provide land, buildings, facilities, equipment etc., other than the equipment provided through JICA under the project. In this regard, the GOK requested the GOJ for the Grant Aid Assistance on establishment of KISM. In response to the request, GOJ conducted a Basic Design Study and completed by December 1995. Based on the result of the Basic Design Study, GOJ committed a Detailed Design Study by Grant Aid of 60 million yen and its implementation by Grant Aid of 929 million yen. With these Grant Aid, GOK contracted with Yamashita Sekkei Co. as the consultant, Zenidaka Co. for building construction and Nissho-Iwai Co. for procurement of equipment. It is expected that the new facilities are to be available by the end of 1997.

6. Plan of Operation for 1997

6.1 Dispatch of Japanese Experts

Eight long term experts will continue to provide services, while some of them may be alternated by his successor. Short term experts in Geodesy, Cartography, Photogrammetry and Remote Sensing, Map Reproduction, and Cadastral Surveying are expected to be dispatched to help teaching material development and to introduce new technology.

6.2 Provision of Machinery and Equipment

In the fiscal 1997, equipment etc. values more or less one quarter of that of fiscal 1996 is expected to be provided.

6.3 Training of Kenyan Personnel in Japan

As far as the Individual Counterpart Training is concerned, four officers in Land Surveying, Cartography, Photogrammetry & Remote Sensing and Map Reproduction are expected to be accepted by JICA. Requests for Group Training has not yet been processed.

Chief Advisor's Report (No. 3) for the period from November, 1996 to January, 1998

1. Dispatch of Japanese Experts

1.1 Long Term Experts

According to the R/D, eight experts are being dispatched during the project period. Experts completed their term of duty were taken over by their successor so that eight experts are on duty all the time over the project period. Experts assigned to KISM since November 26 1996, the day of the last report, are those as follows.

(1) Chief Advisor :	Mr. Minoru Akiyama	(Jun. 1, 1995 -)
(2) Coordinator :	Mr. Kenji Isomoto	(Oct. 16, 1994 - Dec. 1996)
	Mr. Shigemi Yasui	(Nov. 29, 1996 -)
(3) Training Planner :	Mr. Hideki Murayama	(Feb. 19, 1995 -)
(4) Geodesy Expert :	Mr. Kiyohiro Miyazaki	(Oct. 1, 1994 - Jun. 30, 1997)
	Mr. Akira Suzuki	(Jun. 12, 1997 -)
(5) Cartography Expert :	Mr. Sumio Onishi	(Mar. 13, 1996 -)
(6) Photogrammetry and Remote Sensing Expert :	Mr. Bokuro Urabe	(Sept. 1, 1995 -)
(7) Map Reproduction Expert :	Mr. Shoichi Hara	(Oct. 1, 1994 - Aug. 15, 1997)
	Mr. Shigeru Iida	(Jul. 31, 1997 -)
(8) Cadastral Survey Expert :	Mr. Masato Nakashima	(Jun. 28, 1995 - Jun.27, 1997)
	Mr. Kazuaki Fukasawa	(Jun. 12, 1997 -)

1.2 Short Term Expert

According to the R/D, short term experts in four fields as Land Surveying, Cartography, Photogrammetry and Remote Sensing, and Map Reproduction are being dispatched at appropriate occasions during the project period. Three short term experts have been dispatched for services since November 1996 and five other experts are scheduled to be dispatched by the end of Japanese fiscal 1997 as listed below.

1.2.1 Experts for Text Book Development

Two experts in respective fields came in February 1996 and stayed three weeks to work with Long Term Experts and Kenyan Counterparts to develop Syllabi for Higher Diploma courses and textbooks for Diploma courses in each core subjects.

- (1) Mr. T. Hirai Feb. 17, 1997 - Mar. 14, 1997 Expert in Cartography
- (2) Mr. K. Koido Feb. 17, 1997 - Mar. 14, 1997 Expert in Photogrammetry and Remote Sensing

1.2.2 Expert for Installing Cadastral Information System

One Expert in the field of cadastral surveying came in November and stayed three weeks to set up the Cadastral Information System which was procured in fiscal 1996 and offered training of the same to the Kenyan counterparts.

- (3) Mr. R. Suzuki Nov. 10, 1997 - Nov. 29, 1997 Expert for Installing Cadastral Information System

1.2.3 Experts for New Technology

Four experts in respective fields are coming in January, 1998 and stayed two to three weeks to give presentations on new technology at the "KISM seminar on Survey New Technology". They are also expected to transfer knowledge on new technology to the Kenyan counterparts.

- (4) Dr. T. Hosomura Jan. 13, 1998 - Feb. 5, 1998 Expert in Cadastral Surveying
- (5) Mr. J. Harada Jan. 21, 1998 - Feb. 1, 1998 Expert in Photogrammetry and Remote Sensing
- (6) Mr. M. Murakami Jan. 21, 1998 - Feb. 1, 1998 Expert in Geodesy
- (7) Mr. T. Hirai Jan. 21, 1998 - Feb. 12, 1998 Expert in Cartography

1.2.4 Expert on Desk Top Publishing

One expert will come in February, 1998 and will stay six weeks to transfer DTP technology both in theory and practical to the Kenyan counterparts.

- (8) Mr. T. Mori Feb. 7, 1998 - Mar. 19, 1998 Expert in Map Reproduction

2. Provision of Machinery and Equipment

According to the R/D, the Government of Japan (GOJ) will provide machinery, equipment and other materials necessary for the implementation of the project. In the Japanese fiscal year 1996, equipment etc. in the value of ¥ 99 million were provided. In the fiscal 1997, equipment etc. values ¥ 26 million were allocated, while most of them have not been procured yet. The major equipment procured since November 1996 are Cadastral Information System, a pick-up truck, Desk Top Publishing System, a copy printer, aerial photographing, analytical plotter for training, etc.

3. Training of Kenyan Personnel in Japan

According to the R/D, GOJ is expected to train some Kenyan counterpart personnel in Japan to improve their abilities. So far Three officers have been trained since November 1996 as listed below.

- (1) Mr. P.W.K. Gathiori Aug. 19, 1996 - Feb. 14, 1997 Counterpart Training in Land Surveying
- (2) Mr. E.J. Awino Feb. 10, 1997 - Aug. 5, 1997 Counterpart Training in Cartography
- (3) Mr. M.O. Omach Feb. 10, 1997 - Aug. 5, 1997 Counterpart Training in Map Reproduction
- (4) Mr. E.T. Ondiek May 26, 1997 - Nov. 29, 1997 Counterpart Training in Cartography
- (5) Mr. S. Ayugi May 26, 1997 - Nov. 29, 1997 Counterpart Training in Photogrammetry
- (6) Mr. C.M. Lwanga Aug. 18, 1997 - Feb. 21, 1998 Counterpart Training in Land Surveying

One more officer is expected to start her training in Japan from January, 1997.

- (7) Ms. C.A.L. Ochieng Feb. 23, 1998 - Aug. 8, 1998 Counterpart Training in Map Reproduction

Besides, one officer Mr. Ateya got Japanese Mombusho Scholarship for Master Degree course and entered into University of Kyoto from April 1997. Another officer Mr. Waithaka passed the same scholarship for fiscal 1998 and expected to enter Hokkaido University from April 1998.

4. Major Activities

4.1 Diploma Course Implementation

For the first and the second intake student of the Diploma Courses in four disciplines, the first and the second stage of the course have been conducted smoothly. Japanese experts provided technical supports, equipment, materials and other services to operate the courses. Throughout the courses, Kenyan lecturers could be acquainted with teaching methods, course planning and course operation.

4.2 Syllabi for Higher Diploma in Land Surveying, Cartography and Photogrammetry & Remote Sensing

The writing workshop at Kenya Institute of Education (KIE) was held from April 14 to 25, 1997 and the subject panel was held on Nov. 13 and 14, 1997. Japanese experts both long term and short term and Kenyan counterparts jointly worked in developing the draft of the syllabi. The syllabi are expected to be passed and authorized through Technical Course Panel and Academic Board Meeting this year.

4.3 Commencement of the Higher Diploma Courses

In line with the Minutes of the first Joint Coordinating Committee, the Higher Diploma Courses in three disciplines namely Land Surveying, Cartography and Photogrammetry & Remote Sensing are to be started from January 19, 1998.

4.4 Teaching Material Development

Text books for core subjects in Diploma courses have continuously developed in collaboration with Japanese experts and Kenyan counterparts. The table below shows the list of text books developed or almost completed so far.

Department	Title of Text Books	Remarks
Land Surveying	1. Survey Control (I) 2. Survey Control (II) 3. Surveying Instruments (I) 4. Surveying Instruments (II) 5. Land Surveying Practice 6. Topographical Surveying Notes 7. Engineering Surveying (I)	
Cartography	1. Cartography (I) Vol. 1 2. Cartography (I) Vol. 2 3. Cartography (II) Vol. 1 4. Cartography (II) Vol. 2 5. Topographic and Cadastral Cartography	
Photogrammetry and Remote Sensing	1. Photogrammetry (I) 2. Photogrammetry (II)	
Map Reproduction	1. General Printing Studies 2. Printing Science 3. Print Origination (I) 4. Print Origination (II) 5. Photomechanical Processes 6. Machine Printing (I) 7. Machine Printing (II)	
Physical Science	1. Geography (I) 2. Geography (II)	

4.4 Research work

Research work jointly conducted with experts and counterparts are supposed to be beneficial to upgrade ability of counterparts through on the job training. In this regard, the following research work have been conducted since November 1996.

(1) Nairobi National Park Guide/Map Creation

All four departments are involved. Land Survey and Photogrammetric work has been completed so far.

(2) GPS Transformation Parameter Determination

Land Surveying Department conducted this work.

(3) Monitoring of Crustal Deformation of Kenyan Rift

Land Surveying Department and Japanese University Consortium jointly conducted this work. The permission of the Office of the President for the Joint Research was given in October 1997.

(4) Accuracy Evaluation of DCW-DEM in Kenya

Cartography Department and Geographical Survey Institute of Japan jointly conducted this work. The result was presented at the ICA Conference held in Stockholm, in June 1997.

As the succession of the Nairobi National Park Mapping, mapping of Nairobi and Environs is planned to be conducted from fiscal 1998.

4.5 KISM Seminar on Survey New Technology

In order to introduce new technology in the fields of surveying and mapping to the Kenyan Surveying and Mapping society as well as commemorating the inauguration of KISM new facility, one week seminar is being held from January 26 to 30, 1998. Some 20 technical papers are expected to be presented.

4.6 Revision of PDM

According to the minutes of the first Joint Coordinating Committee held February 1996, the Project Design Matrix (PDM) of the KISM Project is to be revised. Through the internal discussion in KISM, the draft of revised PDM was made which will be submitted to the second Joint Coordinating Committee for authorization.

5. Grant Aid Project

According to the R/D, the Government of the Republic of Kenya (GOK) is expected to take necessary measures to provide land, buildings, facilities, equipment etc., other than the equipment provided through JICA under the project. In this regard, the GOK requested the GOJ for the Grant Aid Assistance on establishment of KISM. In response to the request, GOJ granted 929 million yen for building construction and procurement of equipment. The Project started on November 1996 and completed on December 1997. Japanese experts have provided necessary advises to the Kenyan counterparts throughout the project period.

6. Plan of Operation for 1998

6.1 Dispatch of Japanese Experts

According to the R/D, the Training Planner is supposed to be dispatched only in the initial stage of the project. In this regard, the current Training Planner can extend his attachment period by December 1998 and further extension would be difficult. Other seven long term experts will continue to provide services throughout the whole project period, while some of them may be alternated by his successor. Short term experts in Geodesy, Cartography, Photogrammetry and Remote Sensing, Map Reproduction, and Cadastral Surveying are expected to be dispatched to help teaching material development and to introduce new technology.

6.2 Provision of Machinery and Equipment

In the fiscal 1998, equipment etc. values more or less 20 million yen was proposed to be provided.

6.3 Training of Kenyan Personnel in Japan

As far as the Individual Counterpart Training is concerned, four officers in Land Surveying, Cartography, Photogrammetry & Remote Sensing and Map Reproduction are expected to be accepted by JICA. Requests for Group Training has not yet been processed.

Proposed Modification of PROJECT DESIGN MATRIX (PDM)

	Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Old	<p><Overall Goal></p> <ul style="list-style-type: none"> - The required number of the qualified officers in the fields of surveying and mapping will be satisfied 	<ul style="list-style-type: none"> - Number of the qualified officers in the Survey Department and other related organizations 	<ul style="list-style-type: none"> - Monthly, Quarterly and Annual Reports of the Survey Department and other related organizations - Circular letters of appointments of the Survey Department and other related organizations - Random survey of the Project 	
Addendum		<ul style="list-style-type: none"> - Number of vacant posts for technical officers in the Survey Department 	<ul style="list-style-type: none"> - List of approved personnel by DPM and posts filled by technical staff, description of staff by Job Group and profession 	<ul style="list-style-type: none"> - Technical officers approved by DPM shall be recruited
Reason	<ul style="list-style-type: none"> - No change 	<ul style="list-style-type: none"> - More practical indicator shall be introduced 	<ul style="list-style-type: none"> - More quantitative evaluation table shall be introduced 	<ul style="list-style-type: none"> - More practical target shall be introduced
New	<p><Overall Goal></p> <ul style="list-style-type: none"> - The required number of the qualified officers in the fields of surveying and mapping will be satisfied 	<ul style="list-style-type: none"> - Number of the qualified officers in the fields of surveying and mapping in the Survey Department and other related organizations - Number of vacant posts for qualified officers in the fields of surveying and mapping in the Survey Department and other related Governmental organizations 	<ul style="list-style-type: none"> - Monthly, Quarterly and Annual Reports of the Survey Department and other related organizations - Circular letters of appointments of the Survey Department and other related organizations - Random survey of the Project, questionnaires to ex-graduates, farms, etc. - List of approved personnel by DPM and posts filled by technical staff, description of staff by Job Group and profession 	<ul style="list-style-type: none"> - Technical officers approved by DPM shall be recruited

Old	<p><Project Purpose></p> <ul style="list-style-type: none"> - The Kenya Institute of Surveying and Mapping (KISM) will be established as the training organization for fostering qualified officers in the fields of surveying and mapping 	<ul style="list-style-type: none"> - Number of trainees who have completed training courses - Number of successful candidates of the national examinations - Number of trainees who have been taking training courses 	<ul style="list-style-type: none"> - Annual Reports - Lists of trainees - Results of national examinations 	<ul style="list-style-type: none"> - Successful candidates of national examination for Diploma shall be employed by the Survey Department or other related organizations - Successful candidates of national examination for Higher Diploma shall be retained by the Survey Department or other related organizations
Addendum		<ul style="list-style-type: none"> - Number of Diploma graduates employed - Average years of service by the Higher Diploma graduates to the Survey Department or other related organizations 	<ul style="list-style-type: none"> - Annual Reports - Lists of successful graduates of the Diploma course employed by the Survey Department or other related organizations - Present employers of each Higher Diploma graduates 	

Reason	- No change			- No change
New	<p><Project Purpose></p> <ul style="list-style-type: none"> - The Kenya Institute of Surveying and Mapping (KISM) will be established as the training organization for fostering qualified officers in the fields of surveying and mapping 	<ul style="list-style-type: none"> - Number of trainees who have completed training courses - Number of successful candidates of the national examinations - Number of trainees who have been taking training courses - Number of Diploma graduates employed - Average years of service by the Higher Diploma graduates to the Survey Department or other related organizations 	<p>Annual Reports</p> <ul style="list-style-type: none"> - Lists of trainees - Results of national examinations - Lists of successful graduates of the Diploma course employed by the Survey Department or other related organizations - Present employers of each Higher Diploma graduates 	<ul style="list-style-type: none"> - Successful candidates in the national examination for Diploma shall be employed by the Survey Department or other related organizations - Successful candidates in the national examination for Higher Diploma shall be retained by the Survey Department or other related organizations

Old	<p><Outputs/Results></p> <ol style="list-style-type: none"> 1. Organization for KISM is to be established 2. Appropriate training facilities and equipment are to be installed 3. Sufficient number of the Kenyan lecturers for KISM are to be upgraded 4. Guidelines, syllabi and curricula for the training courses are to be developed 5. Text books and teaching materials for the training courses are to be developed 6. Precise training in the fields of surveying and mapping are to be established 	<ol style="list-style-type: none"> 1.1 Experienced and qualified administrative personnel 1.2 Recruiting & selection system of trainees 2. Management system of equipment & supplies 3. Experienced and qualified lecturers 4. Approved guidelines, syllabi and curricula 5. Variety, quantity and quality of text books & teaching materials 6. Course contents 	<p>Annual Reports for the Institute</p> <ul style="list-style-type: none"> - Financial Reports - Plan & actual results of training courses - Maintenance records of equipment - Utilization records of equipment & supplies - Lists of entrance requirements - Service records of qualified officers - Lists of text books & teaching materials <p>Regular Reports by Experts and Lecturers</p> <ul style="list-style-type: none"> - Check lists of lectures by Experts <p>Random survey of the Project</p> <ul style="list-style-type: none"> - Questionnaires to trainees about training 	<ul style="list-style-type: none"> - Counterpart Personnel shall be retained - Administrative Personnel shall be retained - Selected trainees shall be retained - Operating Expenses for KISM shall be secured
Addendum / change		<ol style="list-style-type: none"> 1.1 Adequate administrative function 1.2 Budget for operating expenses 1.3 Average lecture hours of one lecturer 1.4 Mean KCSE scores of admitted trainees for Diploma course 4. Consistent guidelines, syllabi and curricula 5.1 Subject coverage by text books & teaching materials 5.2 Appropriateness of text books & teaching materials 	<p>Annual Reports for the Institute</p> <ul style="list-style-type: none"> - Organization Chart - Service records of qualified officers - Budget for operating expenses - Average lecture hours of one lecturer - Mean KCSE scores of admitted trainees for Diploma course - Subject coverage by text books & teaching materials 	
Reason	- No change			- No change

New	<p align="center"><Outputs/Results></p> <ol style="list-style-type: none"> 1. Organization for KISM is to be established 2. Appropriate training facilities and equipment are to be installed 3. Sufficient number of the Kenyan lecturers for KISM are to be upgraded 4. Guidelines, syllabi and curricula for the training courses are to be developed 5. Text books and teaching materials for the training courses are to be developed 6. Precise training in the fields of surveying and mapping are to be established 	<ol style="list-style-type: none"> 1.1 Adequate administrative function 1.2 Budget for operating expenses 1.3 Average lecture hours of one lecturer 1.4 Mean KCSE scores of admitted trainees for Diploma course 2.1 Sufficient facilities, equipment & supplies 2.2 Management system of facilities, equipment & supplies 3 Experienced and qualified lecturers 4 Consistent guidelines, syllabi and curricula 5.1 Subject coverage by text books & teaching materials 5.2 Appropriateness of text books & teaching materials 6 Course contents 	<p>Annual Reports for the Institute</p> <ul style="list-style-type: none"> - Organization Chart - Service records of qualified officers - Financial Report - Budget for operating expenses - Plan & actual results of training courses - Average lecture hours of one lecturer - Lists of entrance requirements - Mean KCSE scores of admitted trainees for Diploma course - Maintenance records of equipment - Utilization records of equipment & supplies - Lists of text books & teaching materials - Subject coverage by text books & teaching materials <p>Regular Reports by Experts and Lecturers</p> <ul style="list-style-type: none"> - Check lists of lectures by Experts <p>Random survey of the Project</p> <ul style="list-style-type: none"> - Questionnaires to trainees about training 	<ul style="list-style-type: none"> - Key function of KISM administration shall be implemented by respective personnel - Operating Expenses for KISM shall be secured - Sufficient number of lecturers shall be assigned - Selected trainees shall be retained - Equipment & materials shall be properly managed - Trained counterparts shall be retained
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Activities	Target (Original)	Target (New)	Reason	Responsible Person	Inputs* (Original)	Inputs* (New)	Reason
1.1 To assign Appropriate Personnel 1.2 To establish the Administration System of KISM 1.3 To establish the Recruiting and Selection System of the Trainees	Number of Personnel Counterpart : 60 Administrative : 30 Annual I/T of Trainees Diploma : 103 Higher Diploma: 30	Smooth and proper administration and course operation Annual I/T of Trainees Diploma : 103 Higher Diploma: 30	Staff number is determined by DPM. Number itself does not mean much.	Principal, Chief Advisor	Deputy Principal, Coordinator, Admin. Secretary, Training Planner, Long Term Experts, Admin. Staff	Deputy Principal, Coordinator, Admin. Secretary, Training Planner, Long Term Experts, Admin. Staff	No change
2.1 To establish Training Facilities 2.2 To establish Management and Maintenance System of Equipment and Supplies 2.3 To keep Maintenance and Utilization Records of Equipment and Supplies	Land, Building and Facilities Management Committee for Equipment and Supplies	Land, Building and Facilities Management Committee for Equipment and Supplies	No change	Principal, Chief Advisor Deputy Principal, Coordinator, Admin. Secretary	Facilities, Equipment Heads of Departments, Long Term Experts, Staff of Stores	Grant Aid Facilities, Equipment Heads of Departments, Long Term Experts, Staff of Stores	Grant Aid shall be added
3.1 To introduce Preparation, Managing and Evaluating Method of the Training Courses 3.2 To improve the Level of Technical Knowledge and Teaching Method	Counterpart Personnel Heads of Department, Senior Lecturers, Lecturers, Assistant Lecturers	Committee for Course Operation Annual Technical Reports Teaching Manual	Clearer target shall be introduced	Principal, Chief Advisor Deputy Principal, Training Planner	Heads of Departments, Long Term Experts, Short Term Experts, Lecturers	Counterpart Training on New Technology and Teaching Method Heads of Departments, Long Term Experts, Short Term Experts, Lecturers	Way of action shall be added
4.1 To develop Guidelines 4.2 To develop Syllabi 4.3 To develop Curricula	Geodesy, Cadastral Surveying, Cartography, Photogrammetry, Remote Sensing, Map Reproduction	Improvement and authorization of Syllabi Consistency among Guidelines, Syllabi and Curricula	Original target does not mean much. More practical target shall be introduced	Principal, Chief Advisor	Deputy Principal, Training Planner, Heads of Departments, Long Term Experts, Lecturers	Deputy Principal, Training Planner, Heads of Departments, Long Term Experts, Lecturers	No change
5.1 To develop Text Books 5.2 To develop Teaching Materials	same as above	Sufficient and appropriate Text Books and Teaching Materials	Ditto	Deputy Principal, Training Planner	Heads of Departments, Long Term Experts, Lecturers	Heads of Departments, Long Term Experts, Short Term Experts, Lecturers	Short Term Experts are also involved
6.1 To implement Pre-service Diploma Course 6.2 To implement In-service Higher Diploma Course 6.3 To introduce Up-to-date Technology	Diploma : 4 courses Higher Diploma : 3 course Short Term Training and Seminar	Diploma : 4 courses Higher Diploma : 3 course Short Term Training and Seminar	No change	Principal, Chief Advisor	Deputy Principal, Training Planner, Heads of Departments, Long Term Experts, Lecturers, Short Term Experts,	Deputy Principal, Training Planner, Heads of Departments, Long Term Experts, Lecturers, Short Term Experts,	No change

* Person, Equipment and others necessary for implementing the activities

3. KISM 校長報告書

MINISTRY OF LANDS AND SETTLEMENT

KENYA INSTITUTE OF SURVEYING AND MAPPING

PRINCIPALS REPORT

JANUARY 1998

CONTENTS

1. General
2. Construction of the Institute Buildings
3. Assignment of Personnel
 - a) lecturers
 - b) supporting staff
4. Recruitment of Trainees
 - a) Diploma trainees
 - b) Higher Diploma trainees
5. Preparation of Higher Diploma syllabi
6. Administration of training
 - a) Academic
 - b) welfare
7. Finance
 - a) Recurrent
 - b) Development
8. Staff establishment
9. Scheme of service
10. Progress of KJSM Development
11. KJSM management
12. Staff Development
13. New prospects
 - a) Short term training programmes
 - b) consultancy

1 GENERAL

The period under review was fairly a busy one with the institute being engaged in various activities as detailed in the following chapters of this report. In summary the Institute was able to register very fruitful achievements and accomplish most of its annual programmes.

It was during this year that the building of the Institute facilities took place. The management at the Institute was under discomfort as they prepared to take over the new built facilities due to inadequate operational funding (More details under finance). Performance of trainees during the year 1997 as analysed from the intermediate results for both stage I and II was remarkably good; with more details in the proceeding chapters.

The Institute was involved in the execution of four major projects, namely Revision of the Nairobi National Park map, Determination of transformation parameters between the WGS 84 and Clarke 1880 spheroids, geofencing of most airport navigation utility installations into WGS 84 reference system and the establishment of a permanent GPS monitoring station.

2 CONSTRUCTION OF THE INSTITUTE BUILDINGS

Two exchanges of notes for the KISM project were signed between the Minister for finance, Hon. Musalia Mudavadi and the Japanese Ambassador to Kenya, H.E. Dr. Shinsuke Horiuchi as follows:

- (1) Grant for detail design for the execution of the project and consultancy signed on 22nd February, 1996 of Japanese yen sixty Million (60 million).
- (2) Grant for construction of new buildings and acquisition of equipment for KISM signed on 25th June, 1996 of Ksh. 492 million.

Award of contracts

Three Japanese firms were awarded contracts to undertake the following works.

- (i) Yamashita Sekkei inc. of Tokyo as consultants to the project.
- (ii) The tender amounting to Ksh. 330 Million, for building works for KISM was awarded to the Zenitaka Corporation of Japan in November, 1996.
- (iii) The tender for equipment works amounting to Japanese yen 160 Million was awarded to Nissho Iwai in November, 1996.

Activities of each Contractor

Most of the activities took place in 1997 with each firm rendering services as here below.

1. Yamashita Sekkei Inc.

A consultant to the KISM project was to provide professional services in designing, tendering and supervision for the project.

2. The Zenitaka Corporation

The building contractor's work covered the construction of the following buildings and facilities specified in the contract prepared by the consultant for the project. All the building works and facilities by the contractor have since been completed;

(I) *Buildings*

- classroom building
- laboratory building
- administration building
- hostel buildings
- canteen buildings

(ii) *Other incidental facilities*

- outdoor facilities (guard house, pump room, low and high level watertank etc).
- parking lot
- inner road
- infrastructure facilities

(3) Nissho Iwai Corporation

The equipment works involved the supply and installation of equipment, furniture supply for classrooms, laboratories and hostel block and the training on use of equipment. The following is the list of equipment and furniture supplied:

<u>No.</u>	<u>Equipment</u>	<u>Q'ty</u>	<u>No.</u>	<u>Equipment</u>	<u>Q'ty</u>
1.	General Use equipment		2.	Land Survey equipment	
A-1	Classroom table	225	B-1	Theodolite (T2 equivalent, compatible to EDM)	4
A-2	Classroom chair	225	B-2	EDM equipment	1 set
A-3	Dining table	24		Middle range	(6)
A-4	Dining Chair	300		Long range	(1)
A-5	Bunk bed	120	B-3	Level	1 set
A-6	Dormitory desks	240		Precise automatic level	(2)
A-7	Dormitory chair (without arm)	240	B-4	Calibration system (optical)	1 set
A-8	Locker	240	B-5	Equipment for physics laboratory (optical,electrical,electronic)	1 set
A-9	Lecture desk	10	B-6	Maintenance parts for existing equipment	1 set
A-10	Lecture chair	10			
A-11	Black board (movable type)	6	3.	Cartographic equipment	
A-12	Laboratory desk	8	C-1	CAC equipment (for training purpose, with software, UPS, etc) PC (desktop type)	1 set (1)
A-13	Laboratory chair	80			
A-14	Clinic bed	2			
A-15	Medicine cabinet	1			

	. GIS software	(1)
	. Digital image scanner	(1)
C-2	Light table with chair	15
C-3	Light table with scales	10
No.	<u>Equipment</u>	<u>Q'ty</u>
4. Photogrammetric and Remote Sensing equipment		
D-1	Analytical plotter (for training purpose)	1
D-2	Mirror stereoscope	4 set
D-3	Software for image analysis	1 set
D-4	Maintenance parts for existing equipment	1 set
5. Map Reproduction equipment		
E-1	Proofing press (with UPS)	1
E-2	Proofing equipment (cromaline)	1 set
E-3	Contact printing frame (for cromaline and pre-sensitized plate)	2 set
E-4	Printing inks testing machine	1
E-5	Printing press (for A2 size, with UPS)	1
E-6	Colour scanner	1
E-7	Film processor (A2 size)	1
E-8	Plate processor (for pre-sensitized plate)	1
6. Library equipment		
F-1	Reading table (for 6 persons)	10
F-2	Reading chair	30
F-3	Map filing cabinet	2
F-4	Unit shelves	45
7. Computer laboratory equipment		
G-1	PC (desktop type with software)	25
G-2	Printer	7
G-3	UPS	10
8. Vehicle for field training		
H-1	4WD wagon (9 passengers, tropical standard)	5
H-2	Mini Bus (for 30 passengers)	1

The provisions above were accomplished and handed over to the Kenyan Government on 11th December 1997 and the facilities are now in use.

3 ASSIGNMENT OF PERSONNEL

The Government of Kenya continued to assign teaching and administrative personnel in accordance with the progress of the Project's implementation and the exercise is now at its final phase.

The following staff were absorbed into KISM either through secondment from Survey of Kenya or by direct recruitment through the public service commission.

a lecturers

1. O. Owino
2. John A. Amimo
3. Charles M. Ndegwa

4. Thomas G. Ngigi
5. Lwanga
6. Patrick Ogao

7. D.E Musiega
8. Serah Nganga
9. Otweyo
10. Andrew Imwati
11. Robert Kibet Rugut
12. Consolata Kalwenya
13. David Korir
14. Ileri
15. Janet M. Owino
16. Stephen Rotich.
17. Moses Kimani
18. Margaret Nganga
19. Paul M. Kyalo
20. James Matheka

b Administrative staff

- | | | | |
|-------------------------|---------------------------|-------------------------|---------------------|
| 1. Henry H. O.Ondara | Accountant II | 4. Emily Sindani | Security warden III |
| 2. R.O Ongayi | Supplies Officer II | 5. Bernard Mokaya | Security warden III |
| 3. Mirriam Ndungu | Librarian II | 6. Joseph waweru | Security warden III |
| 4. M. Kyalo | Assist Cateress/Hs Keeper | 7. Michael Macharia | Security warden III |
| 5. Serah Chumba | AssistCateress/Hs Keeper | 8. Charles Kimemia | Security warden III |
| 6. David Langat | E/Technician | 9. Ephantus R. Gituto | Security warden III |
| 7. Samuel Orangi | Storeman I | 10. John Karuri | Security warden III |
| 8. Damaris W Gathigira | Copy Typist | 11. George Makau | Security warden III |
| 9. Mary Kemuto | Copy Typist | 12. John Kinyua | Security warden III |
| 10. Seth Odinga | | 13. P. N. Mwakengo | Security warden III |
| 11. Elizabeth G. Waweru | Storeman II | 14. Dickson Mokaya | Security warden III |
| 12. Irene Mwaura | Senior Sub Staff | 15. Joel N. wamani | Security warden III |
| 13. Geofry Nyaga | Senior Sub Staff | 16. Fredrick N. Gichuru | Security warden III |
| 14. James Muthee | Senior Sub Staff | | |
| 15. Jane Igoki Nyagah | Senior Sub Staff | | |
| 16. Martin W. Githua | Senior Sub Staff | | |
| 17. Herina A. Obayo | Telephone Operator | | |
| 18. Solomon R. Muigai | Cook III | | |
| 19. Francis N. Njeru | Cook III | | |
| 20. Pauline Mueni | SubStaff | | |
| 21. Osewe | SubStaff | | |
| 22. Omukuba | Sub Staff | | |
| 23. Sorophia Mwamburi | Sub Staff | | |
| 24. Stanley n Gicheru | Sub Staff | | |

Security Personnel

- | | |
|-----------------------|--------------------|
| 1. Jonathan Muasa | Security warden I |
| 2. Barnaba K. Bwambok | Security warden II |
| 3. Elizabeth wangui | Security warden II |

4 RECRUITMENT OF TRAINEES

i. *Recruitment of Diploma trainees*

This exercise was successfully concluded and the fresh intake is already in place.

ii. *Recruitment of Higher Diploma trainees*

The exercise was successfully carried out by Survey of Kenya and the first group ever to pursue Higher Diploma at KISM will be admitted on 19th January, 1998. This course is an in-service course, initially to benefit Survey of Kenya staff but could later be open to other organizations and the general public. Publicity of the programme has already been done, mainly through the Provincial and District Survey Offices.

5 PREPARATION OF HIGHER DIPLOMA SYLLABI

The Institute was involved in the initial stages of syllabi development for Higher Diploma programmes in the following Disciplines

- Land Surveying
- Cartography
- Photogrammetry & Remote Sensing.

Members of staff of the respective technical departments later participated in the workshop discussions organized by KIE to finalize the documents. So far only two panel discussions are remaining to ratify the syllabi. It is hoped that this could take place in early 1998.

6 ADMINISTRATION OF TRAINING

a *Academic*

The academic programmes went on well with trainees registering good performance in the intermediate examinations for both 1st and 2nd stage. There were however casualties in the second year exam whereby two of the trainees were unable to make it to the third year after failing the second stage exams. First year too had its share of failures amounting to six trainees who are currently booked for supplementaries and are set to take them sometime in January 1998. The summary of the results is as follows.

Summary of STAGE II results

Qualification	survey	Cartography	Photo G & RS	Map Repro	Total
Distiction	6	2	1	5	14
Credit	18	16	8	8	50
Pass	-	1	2	-	3
Fail	2	-	-	-	2
Total/class	26	19	11	13	69

summary of STAGE I results

Qualification	survey	Cartography	Photo G & RS	Map Repro	Total
Distiction	3	2	3	4	12
Credit	22	15	9	10	56
Pass	2	-	-	-	2
Fail (Suppl)	-	5	1	-	6
Total/class	27	22	13	14	(76)

b welfare

The welfare of the trainees is one area where the Institute has not faired well due to lack of the essential facilities but it is hoped that such will be provided while at the new site.

7 Finance

Running expenses of the Institute commitments were both financed by JICA through the technical co-operation and the Government through the recurrent and development vote, whose details are as shown below. The JICA component is usually controlled by the JICA experts seconded to the project.

The development component is also shown but it should be noted that its administration is co-ordinated by the Ministry.

Recurrent

MINISTRY OF LANDS AND SETTLEMENT
277 KENYA INSTITUTE OF SURVEYING AND MAPPING

ITEM	TITLE	PRINTED 1997/1998 K£
000	Personal Emoluments	274,680
050	House Allowance	87,565
060	Other Personal Allowances	500
065	Medical Allowance	42,739
080	Passage and Leave Allowances	7,500
100	Transport Operating Expenses	13,500
110	Traveling and Accommodation Expenses	5,000
120	Postal and Telegrams	1,650
121	Telephone Expenses	6,000
130	Official Entertainment	1,500
140	Electricity Expenses	8,000
141	Water Conservancy Expenses	7,000
143	Purchase of Gas	4,000
150	Purchase of Supplies for Production	16,000
151	Purchase of Farm Inputs	1,000
158	Purchase of Dressings & Non-Pharmaceuticals	2,348

160	Purchase of Food and Rations	23,000
170	Purchase of Consumable Stores	7,000
171	Publishing and Printing Expenses.	10,000
172	Purchase of Uniforms & Clothing	3800
173	Library Expenses	24,000
174	Purchase of Stationery	12,000
175	Advertising and Publicity	2600
176	Purchase of Training Materials	5,000
185	Computer Expenses	7,000
190	Miscellaneous & Other Charges	5,000
193	Fees, Commissions & Honoraria	3,000
194	Training Expenses	10,000
197	Field Attachment & Research Programme	15,000
220	Purchase of Plant & Equipment	12,000
250	Maintenance of Plant, Machinery & Equipment	10,000
260	Maintenance of Buildings & Stations	2,000
270	Maintenance of Water Supplies & Sewerage	1,000
280	Maintenance of Roads	-
	GROSS EXPENDITURE	631,382
	APPROPRIATION IN AID	
650	Sale and Fees for Services Rendered	1,600
670	Miscellaneous Receipt	500
	Total Appropriation in Aid	2,100
	NET EXPENDITURE HEAD 277	629,282

The above budget is inadequate to service the recurrent items and especially the shaded ones which are very critical in running the hostels and the other essential laboratory activities under the training programme. Prompted by this constraint the Permanent Secretary sought authority from Treasury for the Institute to be allowed to utilize the excess AIA collected in a form of tuition and boarding fees, to service the very demanding items pointed out above.

Summary of fees collection for year 1997

1st term	331,500
2nd term	441,300
3rd term	131,101
Grand Total	903,901

Development

Summary of expenditure estimates

Item	Title	Printed estimates K£
141	Installation of Electricity	150,000
210	purchase of new vehicles	500,000
220	purchase of plant and equipment	136,393
400	construction of buildings - Non residential	7,500,000
420	Construction of Water supplies and sewerage	425,000
430	Construction of Roads	75,000

	<i>Gross expenditure</i>	8,806,393
	APPROPRIATION IN AID	
910	Direct payment - Japan	7,900,000
	<i>Net Expenditure</i>	906,393

During the year however, the Ministry experienced difficulties in securing the ex-cheque issues on the development vote as a result of which a few activities could not be accomplished on time. The intention was to provide the utilities financed under the Development vote in parallel with the progress of the building construction. It is however hoped that this will be possible during the third and fourth quarter of the FY. The most affected activities are those highlighted above.

8 STAFF ESTABLISHMENT

H. Nyapola Ag. Principal
K. Mwero Ag. Deputy Principal
J.K. Mwaura Administrative
Secretary

Department of Land Surveying

1. W.N. Kamau
2. C.M. Kamamia
3. G. Ayoo
4. I.L. Ateya
5. G. O. Owino
6. John A. Amimo
7. H.E. Waithaka
8. Charles M. Ndegwa
9. Thomas G. Ngigi
10. P. Kioi
11. C.M. Lwanga

Department of Cartography

1. Patrick Ogao
2. E. Ondiek
3. C. Mwangi
4. D.E Musiega
5. W. Muasya
6. E. Awino
7. H. Jumba
8. E. Mandi (Ms)
9. Serah Nganga
10. O. Otweyo

Department of Photogrammetry and Remote Sensing

1. S. O. Ayugi
2. Andrew Imwati
3. I. Ouma
4. Robert Kibet Rugut
5. D. Njubi
6. Consolata Kalwenya
7. K. Ng'eno
8. John M Njaibu
9. David Korir
10. J. Ireri

Department of Map Reproduction

1. S. Mugadi
2. P. Congo
3. Janet M. Owino
4. M.O. Omach
5. Ng'etich
6. C. Ochieng
7. Jemima Wangui Ezra
8. Stephen Rotich.

Humanity Courses

1. O.M. Kitonyi
2. J.K. Katunga
3. Moses Kimani
4. Margaret Nganga
5. Paul M. Kyalo
6. James Matheka

Administration Personnel

1. Korir	Executive Officer
2. Henry H. O.Ondara	Accountant II
3. R.O Ongayi	Supplies Officer II
4. Mirriam Ndungu	Librarian II
5. Nyuttu	Supplies assistant
6. M. Kyalo	Assist Cateress/Hs Keeper
7. Serah Chumba	AssistCateress/Hs Keeper
8. David Langat	E/Technician
9. Kagunda	Senior Storeman
10. Mary Onderi	Senior C/O
11. Samuel Orangi	Storeman I
12. Damaris W Gathigira	Copy Typist
13. Mary Kemuto	Copy Typist
14. Jane Njeri Njoroge	Land Adj Assit Trn
15. Seth Odinga	
16. Elizabeth G. Waweru	Storeman II
17. Odeny	H.Clerical Officer
18. Njeri	S/S(Secretarial duties)
19. Irene Mwaura	Senior Sub Staff
20. Geofry Nyaga	Senior Sub Staff
21. James Muthee	Senior Sub Staff
22. Jane Igoki Nyagah	Senior Sub Staff
23. Martin W. Githua	Senior Sub Staff
24. Herina A. Obayo	Telephone Operator
25. Solomon R. Muigai	Cook III
26. Francis N. Njeru	Cook III
27. Pauline Mueni	SubStaff
28. Osewe	SubStaff
29. Omukuba	Sub Staff
30. Sorophia Mwamburi	Sub Staff
31. Stanley n Gicheru	Sub Staff

Security Personnel

1. Jonathan Muasa	Security warden I
2. Barnaba K. Bwambok	Security warden II
3. Elizabeth wangui	Security warden II
4. Emily Sindani	Security warden III
5. Bernard Mokaya	Security warden III
6. Joseph waweru	Security warden III
7. Michael Macharia	Security warden III
8. Charles Kinemia	Security warden III
9. Ephantus R. Gituto	Security warden III
10. John Karuri	Security warden III
11. George Makau	Security warden III
12. John Kinyua	Security warden III
13. P. N. Mwakengo	Security warden III
14. Dickson Mokaya	Security warden III
15. Joel N. wamani	Security warden III
16. Fredrick N. Gichuru	Security warden III

Meanwhile recruitment of the approved personnel is in progress and re-designation and upgrading of the existing KISM staff is necessary so as to satisfy the proposed full staff compliment.

9 SCHEME OF SERVICE

A proposal has already been worked out based on existing schemes of service, mainly making reference to the one serving lecturers in the technical training institutions. This scheme of service is intended to facilitate the re-designation and upgrading of all the lecturer staff who were seconded to KISM.

10 PROGRESS OF KISM ACTIVITIES

10.1 Curriculum development

i. Diploma Courses

The following four courses at diploma level are being conducted at KISM since January, 1996

- * Land Surveying
- * Cartography
- * Photogrammetry and Remote Sensing
- * Map reproduction

ii. Higher Diploma Courses

KIE is currently in the process of finalizing Higher Diploma curricular for the areas below, meanwhile the drafts are already being put into use at the Institute.

- * Land Surveying
- * Cartography
- * Photogrammetry and Remote Sensing

iii. Preparation of Teaching Notes

This is an on- going activity for all departments. This year it is expected that each department will embark on the revision of all the existing teaching notes for all the stages. The notes are bound for issue to trainees at a fee.

10.2 Projects

The Institute undertook four major projects as described here below.

I. Revision of the Nairobi National Park Map

The implementation of this project is on going and is being carried out in phases through four major stages which were shared out among the four technical department of KISM, namely - The Land Survey, Photogrammetry, Cartography and Map Reproduction. Each department took charge of the functions that were relevant to their respective disciplines. So far the Land Survey and Photogrammetry and Remote Sensing cleared up their part, meanwhile the Cartography and Map Reproduction are to complete their portion and finally publish the map.

ii. Determination of transformation parameters between the WGS 84 and Clarke 1880 spheroids

The implementation of this project has been on going, and has so far covered about three quarters of the intended total coverage. The areas that have so far been covered include those of the coast region, parts of Rift Valley, Nairobi and western region. The overall coverage in these areas has yet to be intensified so as to be able to determine the most probable transformation parameters.

iii georeferencing of most airport navigation utility installations into WGS 84 reference system.

The project was implemented in collaboration with the client departments namely the Civil Aviation, Defense and Ministry of Transport. The aim of the project was to co-ordinate most commercial, private and military airports navigation installations by the WGS 84 system. KISM staff physically visited and occupied the installations in their respective habitats. All logistics were met by the client Departments. The exercise was not completed but a great deal has so far been covered.

iv GPS monitoring station

The Institute through the Land Survey Department established a permanent GPS monitoring station upon which all referencing of observed values would be made.

11. KISM MANAGEMENT

The day-to-day activities of KISM on Kenyan side is managed by the Ag. Principal Assisted by the Ag. Deputy Principal together with the Ag. Administrative Secretary. For the effective co-ordination and implementation of KISM activities, the management has put into place the following committees;

I. Joint Management Committee

Members:-

Kenyan Representation

Ag. Principal	H. Nyapola
Ag. Deputy Principal	K. Mwero
Administrative Secretary	J. K. Mwaura

Japanese Representation

Chief Advisor	M. Akiyama
Project Coordinator	S. Yasui
Training Planner	H. Murayama
Snr. Japanese Expert	A. Suzuki

ii. Weekly Departmental Meeting

Members:

Kenyan Representatives

Ag. Principal
Ag. Deputy Principal
Administrative Secretary
Ag. Heads of Departments (five)

Japanese Representatives

Chief Advisor

Project Coordinator

Training Planner

All Japanese Experts (five)

iii. Quarterly year Departmental Meetings

Members: All members within the department and the respective Japanese Experts

iv Steering Committee Meeting

A steering committee of the Joint Coordinating Committee of KISM is in place, chaired by the Director of Surveys.

Members;

Kenyan Representation

-Director of Surveys - Chairman

-Deputy Director of Surveys

-Deputy Secretary - Surveys

-Ag. Principal

-Ag. Deputy Principal

- Administrative Secretary

Japanese Representation

-Chief Advisor

-Project Coordinator

-Training Planner

-Snr. Japanese Expert

-Assistant Resident Rep. JICA

in charge of KISM

12. STAFF DEVELOPMENT

The Institute has always made use of various training opportunities for its staff development. The following are among the programmes that benefited the staff during the year under review.

- * Counterpart training programme
 - 1. Ondiek
 - 2. Awino
 - 3. Ayugi
 - 4. Lwanga
 - 5. Omach

- * Japanese Mombusho Scholarship
 - 1. I. L. Ateya

- * Japanese Group Training course in Remote Sensing
 - None

* Netherlands Fellowship Programmes - The Institute is trying to establish links with ITC to facilitate admissions to the Institute.

* Training of trainers course - KTTC

1. Mugadi	2 Congo
3. Amimo	4. Ezra
5. Musiega	6. Imwati
7 Otweyo	8. Njaibu
9 Kalenywa	9 Jumba
10 Mwangi	11 Kamau
12 Ayoo	

13. NEW PROSPECTS

a, *short term training*

The Institute is seriously considering to introduce regular short courses, that would focus on the application of newly developed technology in the field of Surveying and mapping. Given the fact that KISM is supplied with very modern equipment it would easily manage such programmes. The programmes are planned to be open to the entire survey and mapping fraternity but at a cost.

b *Consultancy*

KISM is considering to introduce compulsory involvement of its lecturers in consultancy services for them to be in a position to relate very practical situations to trainees during lecture sessions. This will also provide an ideal avenue for continued professional development which is very essential for trainers. By so doing the lecturers shall remain informed and be able to master their areas of specialization in confidence.

<Overall Goal>

The required number of the qualified officers in the fields of surveying and mapping will be satisfied

Table 1 Anticipated and Real Number of Technical Officers in SOK (with job class "G" and higher)

	1994/95		1995/96		1996/97		1997/98		1998/99		
	approved by DPM	Real	approved by DPM	Real	approved by DPM	Real	approved by DPM	Real	approved by DPM	Real	
Senior Officers											
Survey Technician											
Land Surveyor											
Photogrammetrist											
Cartographer											
Photolithographer											
Total (Technical)											
Posted ratio		%		%		%		%		%	

<Project Purpose>

The Kenya Institute of Surveying and Mapping (KISM) will be established as the training organization for fostering qualified officers in the fields of surveying and mapping

Table 2-1 Number of Trainees of the First Diploma Course who Entered, Completed, Passed the National Exam and Employed by SOK and other organizations

		Entered (A)	Completed (B)	B/A	Passed (C)	C/A	Employed (D)	D/A	D/C
				%		%		%	%
D I P L O M A (I)	Land Survey	26		%		%		%	%
	Cartography	22		%		%		%	%
	Photogrammetry & RS	11		%		%		%	%
	Map Reproduction	14		%		%		%	%
	Total	73		%		%		%	%

Table 2-2 Number of Trainees of the Second Diploma Course who Entered, Completed, Passed the National Exam and Employed by SOK and other organizations

		Entered (A)	Completed (B)	B/A	Passed (C)	C/A	Employed (D)	D/A	D/C
		D I P L O M A (II)	Land Survey			%		%	
	Cartography			%		%		%	%
	Photogrammetry & RS			%		%		%	%
	Map Reproduction			%		%		%	%
	Total			%		%		%	%

Table 2-3 Number of Trainees of the First Higher Diploma Course who Entered, Completed, Passed the National Exam and Retained in SOK

		Entered (A)	Completed (B)	B/A	Passed (C)	C/A	Retained (D)	D/A	D/C
		II	Land Survey			%		%	
D	Cartography			%		%		%	%
(I)	Photogrammetry & RS			%		%		%	%
	Total			%		%		%	%

Table 2-4 Number of SOK Higher Diploma Officers who continue to serve for SOK after receiving the training

		H.D. received within five years			H.D. received within five to ten years			H.D. received ten and more years ago		
		Total (A)	Retained (B)	B/A	Total (A)	Retained (B)	B/A	Total (A)	Retained (B)	B/A
II	Land Survey			%			%			%
D	Cartography			%			%			%
	Photogrammetry & RS			%			%			%
	Total			%			%			%

DEVELOP.

5. KISMの人員配置状況

DEVELOPMENT OF PERSONNEL AT KISM, JANUARY 1998						
	96 July	97 Jan.	97 May	97 Aug.	98 Jan.	R/D
A.D.	2	2	2	2	2	
Land	8	8	9	9	11	18
Photo	5	8	9	9	10	15
Carto	6	9	9	9	10	15
Map	7	8	8	8	8	8
Humanities	2	2	2	2	6	
Staff		12	12	12	37	
Security					16	
Lecturers	28	35	37	37	45	60
staff	2	14	14	14	55	30
total	30	49	51	51	100	90

DEVELOPMENT OF PERSONNEL AT KISM AS OF JANUARY 1998						
	SURNAME	OTHER NAMES	TITLE	DESIGNATION	QUALIFICATIONS	J/G
ADMINISTRATIVE STAFF						
1	NYAPOLA	HAGGAI	Mr.	AG. PRINCIPAL	Bsc (Surveying and Photogrammetry) (UoN) P.Dip(Survey Integration)(ITC)	P
2	MWERO	KOMBO	Mr.	AG. DEPUTY PRINCIPAL	Bsc (Surveying and Photogrammetry) (UoN) P.Dip(Hydrography)	N
LAND SURVEYING DEPARTMENT						
1	KAMAU	WILSON NDIRANGU	Mr.	LAND SURVEYOR I Ag. HoD(Lecturer I)	Bsc (Surveying and Photogrammetry) (UoN) P.Dip(Photogrammetry)(ITC)	M
2	KAMAMIA	CHARLES MUYA	Mr.	LAND SURVEYOR I (Lecturer I)	Bsc (Surveying and Photogrammetry) (UoN) P.Dip(Geoinformatics)(ITC)	L
3	OKETCH	GILBERT AYO	Mr.	LAND SURVEYOR I (Lecturer I)	Bsc (Surveying and Photogrammetry) (UoN)	L
4	ATEYA	ISMAIL LUKANDU	Mr.	LAND SURVEYOR I (Lecturer I)	Bsc (Surveying and Photogrammetry) (UoN)	L
5	OWINO	George	Mr.	LAND SURVEYOR I (Lecturer I)	Bsc (Surveying and Photogrammetry) (UoN)	L
6	WAIHAKA	EDWARD HUNJA	Mr.	LAND SURVEYOR II (Lecturer II)	Bsc (Surveying and Photogrammetry) (UoN)	K
7	GATHIORI	P.W.KIOI	Mr.	SENIOR SURVEY ASSISTANT (Lecturer III)	Dip(Land Surveying)(KP) H.Dip(Surveying and Mapping)(KP)	K
8	AMINO	JOHN AYIEKO	Mr.	LAND SURVEYOR II (Lecturer II)	Bsc (Surveying and Photogrammetry) (UoN)	K
9	NDEGWA	CHARLES MUNDIA	Mr.	LAND SURVEYOR II (Lecturer II)	Bsc (Surveying and Photogrammetry) (UoN)	K
10	NGIGI	THOMAS GATHUNGU	Mr.	LAND SURVEYOR II (Lecturer II)	Bsc (Surveying and Photogrammetry) (UoN)	K
11	LWANGA	CHARLES MISICKO	Mr.	SURVEY ASSISTANT II (Assistant Lecturer)	Dip(Land Surveying)(KP) H.Dip(Surveying and Mapping)(KP)	J
CARTOGRAPHY DEPARTMENT						
1	OGAO	Patrick	Mr.	LAND SURVEYOR I Ag. HoD(Lecturer II)	Bsc (Surveying and Photogrammetry) (UoN) MSc(Cartography)(ITC)	L
2	MUSIEGA	DOUGLAS	Mr.	LAND SURVEYOR II	Bsc (Surveying and Photogrammetry) (UoN)	K

				(Lecturer II)	MSc(Cartography)(ITC)	
3	ONDIEK	ENOS O. T.	Mr.	SENIOR CARTOGRAPHIC ASSISTANT (Lecturer II)	Occupational Grades III,II,I (SoK) Tech.Dip.(Cartography)(ITC)	K
4	MWANGI	CHARLES M.K.	Mr.	SENIOR CARTOGRAPHIC ASSISTANT (Lecturer II)	Dip. (Cartography) (KP) Tech.Dip.(Cartography)(ITC)	K
5	MUASYA	WILFRED KASYOKA	Mr.	CARTOGRAPHIC ASSISTANT I (Lecturer III)	Dip. (Cartography) (KP)	J
6	AWINO	E. JUMA	Mr.	CARTOGRAPHIC ASSISTANT I (Lecturer III)	Occupational Grades III,II,I (SoK) Tech. Dip.(Cartography)(ITC)	J
7	JUMBA	HUDSON FELIX	Mr.	CARTOGRAPHIC ASSISTANT I (Lecturer III)	Dip. (Cartography) (KP)	J
8	MANDI	ESTHER NGINA	Ms.	CARTOGRAPHIC ASSISTANT I (Lecturer III)	Dip. (Cartography) (KP) Tech.Dip.(Cartography)(ITC)	J
9	NG'ANG'A	SERA KABUI	Ms.	CARTOGRAPHIC ASSISTANT I (Lecturer III)	Dip. (Cartography) (KP) Post Diploma (SoK)	J
10	OTWEYO	SAMSON ONYANGO	Mr.	CARTOGRAPHIC ASSISTANT I (Lecturer III)	Dip. (Cartography) (KP) Tech.Dip.(Cartography)(ITC)	J
	PHOTOGRAMMETRY AND REMOTE SENSING DEPARTMENT					
1	AYUGI	SAMSON OKOTH	Mr.	LAND SURVEYOR I Ag.HOD(Lecturer I)	BSc (Surveying and Photogrammetry) (UoN) MSc(Photogrammetry)(ITC)	L
2	IMWATI	ANDREW THIAINE	Mr.	LAND SURVEYOR I (Lecturer I)	BSc (Surveying and Photogrammetry) (UoN) MSc(Engineering Survey)(UNB)	L
3	OUMA	ISAIAH OGWANG'A	Mr.	LAND SURVEYOR I (Lecturer I)	BSc (Surveying and Photogrammetry) (UoN) P.Dip(Geoinformatics)(ITC)	L
4	RUGUT	ROBERT KIBET	Mr.	LAND SURVEYOR II (Lecturer II)	Bsc (Surveying and Photogrammetry) (UoN)	K
5	NJUBI	DAVID K.E.	Mr.	SENIOR PHOTOGRAMMETRIC ASSISTANT (Lecturer II)	Occupational Grades III,II,I (SoK) Tech.Dip.(Photogrammetry)(ITC)	K
6	NG'ENO	KIPRONO R.C.	Mr.	PHOTOGRAMMETRIC ASSISTANT II (Assistant Lecturer)	Dip. (Photogrammetry) (SoK) Tech.Dip.(Photogrammetry)(ITC)	J
7	KALENYWA	CONSOLATA MWARI	Ms.	PHOTOGRAMMETRIC ASSISTANT II (Assistant Lecturer)	Dip. (Photogrammetry) (SoK) Post Diploma (SoK)	H
8	NJAIBU	JOHN MURITHI	Mr.	PHOTOGRAMMETRIC ASSISTANT II (Assistant Lecturer)	Dip. (Photogrammetry) (SoK) Post Diploma (SoK)	H
9	KORIR	DAVID KIPNG'ETICH	Mr.	PHOTOGRAMMETRIC ASSISTANT II (Assistant Lecturer)	Dip. (Photogrammetry) (SoK) Post Diploma (SoK)	H
10	IRERI	James	Mr.	PHOTOGRAMMETRIC ASSISTANT II (Assistant Lecturer)	Dip. (Photogrammetry) (SoK) Post Diploma (SoK)	H

MAP REPRODUCTION DEPARTMENT						
1	MUGADI	SAMMY FRANKLYN	Mr.	CHIEF SUPT. LITHOGRAPHIC ASSISTANT Ag.HOD(Lecturer I)	Dip. (Printing) (LCP) H.N.Dip(Printing)(LCP)	L
2	BUONG	PATRICK CONGO	Mr.	PHOTOLITHOGRAPHIC ASSISTANT I (Lecturer III)	Cert. (Printing) (KP) H.N.Dip(Printing)(WC)	J
3	OMACH	MICHAEL OKUKU	Mr.	PHOTOLITHOGRAPHIC ASSISTANT II (Assistant Lecturer)	Dip. (Printing) (LCP) H.N.Dip(Printing)(LCP)	H
4	OWINO	JANET MUNAI	Ms.	PHOTOLITHOGRAPHIC ASSISTANT I (Lecturer III)	Cert. (Printing) (KP)	J
5	OCHIENG'	CAREN A.	Ms.	PHOTOLITHOGRAPHIC ASSISTANT II (Assistant Lecturer)	Cert. (Printing) (KP)	H
6	EZRA	JEMIMA W.	Ms.	PHOTOLITHOGRAPHIC ASSISTANT II (Assistant Lecturer)	Cert. (Printing) (KP)	H
7	NG'ETICH	WILSON K.	Mr.	PHOTOLITHOGRAPHIC ASSISTANT II (Assistant Lecturer)	Cert. (Printing) (KP) H.N.Dip(Printing)U.K.	H
8	ROTICH	STEPHEN	Mr.	PHOTOLITHOGRAPHIC ASSISTANT II (Assistant Lecturer)	Cert. (Printing) (KP)	H
HUMANITIES AND SCIENCES DEPARTMENT						
1	KATUNGA	JAPHETH KIOKO	Mr.	SURVEY ASSISTANT I (Lecturer III)	B.Ed (Science) (KU) P.Dip.(Cartography)(Glasgow,UK)	J
2	KITONYI	OBADIAH	Mr.	Executive Officer (Lecturer II)	BSc. MBA,(USIU) MPA(USC),P.Dip.(Education)(KU)	K
3	KIMANI	MSESE	Mr.	(Lecturer III)	B.A (UoN)	J
4	NGANGA	MARGARET	Ms.	(Lecturer III)	B.A Egerton University	J
5	KYALO	PAUL M.	Mr.	(Lecturer III)	B.A (Anthropology) (UoN)	J
6	MATHEKA	JAMES	Mr.	(Lecturer III)	B.Sc (JKUAT)	J
GENERAL ADMINISTRATIVE STAFF						
1	MWAURA	JAMES K.	MR	AG. ADMINISTRATIVE SECRETARY	BEd(UoN)	N
2	KORIR	MICHAEL K.	MR	EXECUTIVE OFFICER	CPS I(GTI, Maseno)	J
3	ONDARA	HENRY H.	Mr.	ACCOUNTANT II	CPA II B Com (INSCA)	J

4	ONGAYI	R. O.		SUPPLIES OFFICER II	Final Diploma in Supplies M (DSM III)	J
5	NDUNGU	MIRIAM WANJIKU	MS	LIBRARIAN	BSc(Information Science)(MU)	J
6	KYALO	V. M.		ASTN. CATERSS / HS KEEPER	Diploma in Institutional Management	II
7	CHUMBA	SERAH		ASTN. CATERSS / HS KEEPER	K C E certificate in Catering ... II	G
8	LANGAT	DAVID C.	MR	ELECTRICIAN	Cert.(Part II)(Electrical & Electronics)	G
9	KAGUNDA	JAMES N.	MR	SENIOR STOREMAN	Dip.(Supplies Management)(MDI)	G
10	ONDERI	M.G.	MS	SENIOR CLERICAL OFFICER	E.A.C.E.	F
11	ORANGI	SAMUEL		STOREMAN I	E.A.C.E.	F
12	GATHIGIRA	DAMARIS W.		COPY TYPIST	K C S E (Secretarial stage I & II)	F
13	KEMUTO	MARY		COPY TYPIST	K C S E (Secretarial stage I & II)	F
14	NJOROGE	JANE NJERI		Account Assit.	K C S E	F
15	ODINGA	SETH		Clerk	K C S E	F
16	Kegme	Njoroge Dahicel		Clerk	E.A.C.E	E
17	ODENY	MAURICE	MR	CLERICAL OFFICER	Proficiency	E
18	NJERI	ELIZABETH	MS	SUB-STAFF(Performing Secretarial Duties)		D
19	MWAURA	IRENE		SENIOR SUB STAFF	K C S E	D
20	NYAGA	GEOERY		SENIOR SUB STAFF	E A C E	D
21	MUTHEE	JAMES		SENIOR SUB STAFF	K C E	D
22	NYAGAH	JANE IGOKI		SENIOR SUB STAFF	K C S E	D
23	GITHUA	MARTIN W.		SENIOR SUB STAFF	K C S E	D
24	Nthike	Muthitza		TELEPHONE OPERATOR	K J S E	D
25	OBAYO	HERINA A.		TELEPHONE OPERATOR		D
26	MUIGAI	SOLOMON		COOK III	K C S E	
27	NJERU	FRANCIS N.		COOK III		
28	MUENI	PAULINE		SUB STAFF		C
29	OSEWE	SOPHIA	MS	SUB-STAFF		B
30	OMUKUBA	A		SUB-STAFF	K C S E	A
31	MWAMBUR	SOROPHNA		SUB-STAFF	K C S E	A
32	GIGHERU	STANLEY		SUB-STAFF		A
33	BACALANA	SALIM MOLTHAMES		DRIVER	K C S E	
34	MWATU	JOHN		DRIVER	K C P E	
35	MMITIRA	JOHN KANIKIA		DRIVER	C P E	
36	SUVA	EDWARD		DRIVER	E A C E	
37	MUGUONGO	ANOS MUTI		DRIVER	K P E	
SECURITY PERSONEL						
1	BWAMBOK	BARNABAK		SECURITY WARDEN II	C P E	D
2	MUASA	IONATHAN		SECURITY WARDEN I		E
3	WANGUI	ELIZABETH		SECURITY WARDEN II		D

4	SINDANI	EMILY		SECURITY WARDEN III	K C S E	C
5	MOKAYA	BERNARD		SECURITY WARDEN III	K C S E	C
6	WAWERU	JOSEPH		SECURITY WARDEN III		C
7	MAGHARIA	MICHAEL		SECURITY WARDEN III		C
8	KIMEMIA	CHARLES		SECURITY WARDEN III		C
9	GITUTO	EPHANTUS		SECURITY WARDEN III		C
10	KARDRI	JOHN		SECURITY WARDEN III	K C S E	C
11	MAKAU	GEORGE		SECURITY WARDEN III		C
12	KINYUA	JOHN		SECURITY WARDEN III		C
13	MWAKENGO	PHILOMENA N		SECURITY WARDEN III		C
14	MOKAYA	DICKSON		SECURITY WARDEN III		C
15	WAMANI	JOEL N		SECURITY WARDEN III		C
16	GICHURU	FREDRICK N		SECURITY WARDEN III		C

6. 合同委員会議案

**JOINT CO-ORDINATING COMMITTEE MEETING OF 22ND
JANUARY, 1998 AT THE KENYA INSTITUTE OF SURVEYING
AND MAPPING (KISM) AT 10.00A.M.**

AGENDA.

1. Review of the Progress of KISM Project
 - i) Principal's progress report
 - ii) Chief Advisor's report
2. Future of KISM
3. Remarks by JICA, Kenya office/Embassy officials
4. A.O.B