

付属資料 5 . Minutes of The Second Joint Advisory Committee Meeting for KATC Project

**MINISTRY OF AGRICULTURE AND COOPERATIVES
RESEARCH AND TRAINING DIVISION**

**MINUTES OF
THE SECOND JOINT ADVISORY COMMITTEE MEETING
FOR THE KILIMANJARO AGRICULTURAL
TRAINING CENTRE (KATC) PROJECT**

**HELD
AT KATC, MOSHI
ON 1ST APRIL, 1996**

**KILIMANJARO AGRICULTURAL TRAINING CENTRE
P. O. BOX 1241, MOSHI TEL. 055-54247, FAX 055-52293**

MINISTRY OF AGRICULTURE AND COOPERATIVES
RESEARCH AND TRAINING DEPARTMENT

KILIMANJARO AGRICULTURAL TRAINING CENTRE
P.O. Box 1241, Moshi Tanzania Telephone: (055) 54247 TEL. FAX (055) 52293

MINUTES OF THE SECOND JOINT ADVISORY COMMITTEE MEETING FOR THE
KATC PROJECT

1. PRESENT

Members

- 1.1. Mr.R. Mollel - Principal Secretary - Ministry of Agriculture and Cooperatives -
Chairman
- 1.2 Dr.F. Shao - Commissioner - Research and Training Division *G.M. Mitawa*
- 1.3 Mr.J.B. Ndunguru - Assistant Commissioner (Training) *A.S.*
- 1.4 Mr.T.N. Kirway - Assistant Commissioner (Farming Systems Research)
- 1.5 Mr.Chikira - Acting Regional Administrative Secretary - Kilimanjaro
- 1.6 Dr. F.W. Moshia - Director - Tropical Pesticide Research Institute (TPRI) Arusha
- 1.7 Mr.M.N. Mzava - For Assistant Commissioner (Irrigation)
- 1.8 Mr.H. Kawazoe - Resident Representative - JICA Tanzania Office
- 1.9 Mr.N. Koibuchi - Team Leader - KATC Project
- 1.10 Mr.K. Shiratori - Co-ordinator - KATC Project
- 1.11 Mr.J. Oshida - JICA Expert - Agricultural Extension & Training Department - KATC
- 1.12 Mr.M.Tomitaka - JICA Expert - Rice Cultivation Department - KATC
- 1.13 Mr.S. Tanaka - JICA Expert - Water Management Department - KATC
- 1.14 Mr.K. Yamaguchi - JICA Expert - Agricultural Machinery Department - KATC
- 1.15 Mr.R.J. Shayo - Principal/KATC Project Manager - Secretary

OBSERVERS:

- 1.16 Dr.F. Sunguya - RALDO Kilimanjaro
- 1.17 Mr.M. Misabo - KATC Desk Officer - Research and Training Division Headquarters
- 1.18 Mr.Z.K. Sarakikya - KATC Farm Manager
- 1.19 Mr.N. Nkondora - Head, Agricultural Machinery Department - KATC
- 1.20 Mr.K.A. Nkya - Ag. Head, Water Management Department - KATC
- 1.21 Mr. R. Lussewa - Ag. Head, Rice Cultivation Department - KATC.
- 1.22 Mr.N. Mvukiye - Tutor, Rice Cultivation Department - KATC
- 1.23 Ms.T.K. Mugangala - Head, Agricultural Extension and Training Department -
KATC
- 1.24 Mr.G. Marawitti - Tutor, Water Management Department - KATC
- 1.25 Mrs.M. Mtika - Tutor, Agricultural Extension and Training Department - KATC
- 1.26 Ms.J. Omari - Tutor, Rice Cultivation Department - KATC
- 1.27 Mrs.G. Mshanga - Catering Officer - KATC

2. ABSENT WITH APOLOGY

- 2.1 Assistant Commissioner (Crop Research)
- 2.2 Assistant Commissioner (Extension Services)

3. AGENDA

- 3.1 Welcoming speech by the Commissioner for Research and Training.
- 3.2 Introductions.
- 3.3 Minutes of the previous meeting.
- 3.4 Matters arising from the minutes.
- 3.5 Progress report of the KATC Project.
- 3.6 Team Leader's remarks.
- 3.7 KATC Project Annual Plan for 1996/97 fiscal year.
- 3.8 Any other business.
- 3.9 Closing remarks by the Chairman.

4. WELCOMING ADDRESS:

The Commissioner for Research and Training (CRT) Dr. Frank Shao welcomed the Principal Secretary Mr. Raphael Mollel and all members of the KATC Project Joint Advisory Committee to KATC and to the meeting. He said that this was the second Joint Advisory Committee meeting and it was being held in Moshi so that members could observe the achievements of the KATC Project over the past one year. He ended by welcoming the Principal Secretary to chair the meeting thanking him for finding time to visit KATC.

5. OPENING

The Chairman opened the meeting at 9.20 a.m. by asking members to introduce themselves, before going into the next item on the agenda.

6. MINUTES OF THE PREVIOUS MEETING

- 6.1 Having gone through the minutes in silence the Chairman called for correction.
- 6.2 It was observed that the style of writing the minutes was unnecessarily elaborate.
- 6.3 It was further observed that the minutes had not indicated the necessary actions to be taken and by who.
- 6.4 It was agreed that in future a simpler style of writing the minutes should be adopted, indicating those responsible for taking action.
(ACTION: SECRETARY).
- 6.5 There being no more corrections the Chairman signed the minutes.

7. MATTERS ARISING FROM THE MINUTES

- 7.1 Additional technical staff for KATC (Item 6.1).
 - 7.1.1. It was reported that a diploma holder in irrigation had been transferred to KATC to work under the Water Management Department. However a graduate counterpart for the Agricultural Extension and Training Department was yet to be identified.
 - 7.1.2 It was observed that the issue of finding a graduate for the Extension and Training Department had taken too long.
 - 7.1.3 It was agreed that a graduate for the of Extension and Training Department should be found without further delay (ACTION: CRT).
- 7.2 Additional Supporting Staff for KATC (Item 6.2).

7.2.1. It was reported that the following supporting staff had been transferred to KATC:

- One store keeper from RALDO Kilimanjaro
- Two drivers from RALDO Kilimanjaro
- One cook from RDD's office
- One mechanic from ARI West Kilimanjaro.

7.2.2. It was further reported that the centre was still badly in need of the following supporting staff:

- Four watchmen
- Four cleaners
- Two secretaries
- Two additional drivers
- One office supervisor
- One tractor operator.

7.2.3 Members observed that the upcoming re-entrenchment exercise was making the transfer of supporting staff from one section to another difficult.

7.2.4 It was further observed that KATC's exact requirement for supporting staff was still unclear.

7.2.5 It was therefore agreed that KATC should submit its exact requirements and the Ministry Headquarters should look into the possibility of satisfying KATC's requests.
(ACTION: CRT/KATC Principal)

7.3.1. Separate toilets and shower rooms for ladies (Item 6.3)

7.3. It was reported that these facilities had been added to the existing hostel.

7.4 Paying station status (Item 6.5)

7.4.1 It was reported that KATC had been granted paying station status effective July 1st 1995.

7.5 Self Help Fund.

7.5.1 It was reported that KATC was struggling to generate funds to build up a Self Help Fund using its limited sources of revenue.

7.5.2 It was observed that so far KATC had been using its small production farm and milling unit as a source of revenue.

7.5.3 It was strongly recommended that for the future sustainability of the centre additional sources of revenue should be sought and exploited. The following examples were sighted:

- KATC should look for people or organizations which are willing to sponsor participants to its courses.
- KATC should be ready to offer services to other institutions and charge accordingly.

(ACTION: KATC Principal).

8. KATC's ANNUAL PROGRESS REPORT

(January 1995 - March 1996) - Appendix I.

The report was presented and discussed.

8.1 Some members sought clarification on what was gained from the study tours for staff (Item 5.0)

8.2 It was agreed that members of staff should submit reports on their study trips to the Principal soon after coming back from the trips since such trips were meant to be academically beneficial not only to the individual but also to the centre as a whole.
(ACTION: KATC Principal).

- 8.3 It was observed from the progress report that there was not enough collaboration between KATC and other institutions when conducting field surveys. (Item 6.0). Members agreed that closer collaboration would help to avoid duplication of efforts.
- 8.4 It was strongly recommended that copies of survey reports should be put on display during future Joint Advisory Committee Meetings for member to browse. (ACTION: KATC Principal).
- 8.5 On the selection of key farmers to attend KATC's courses, (Item 7.0), it was clarified that key farmers were selected by their Village Extension Officers who had gone through the KATC experience by attending the Rice Cultivation Course for Extension Officers.
- 8.6 Members observed that it was probably too early to expect useful follow up reports from ex-participants, but agreed that it should form an important aspect in future KATC activities. (ACTION: KATC Principal).
- 8.7 On the issue of staff motivation members agreed that KATC staff deserved to be motivated just like all other civil servants, and that the government was looking into ways and means of motivating all its staff. It was further agreed that since the government's capacity to institute motivational factors to staff was very limited, donor assisted projects such as KATC should feel free to institute their own motivational factors for their staff. (ACTION: JICA/KATC Team Leader).

9. KATC PROJECT TEAM LEADERS REMARKS

The Japanese Team Leader at KATC Mr. Noboru Koibuchi gave a brief speech (Appendix 2) which highlighted on the following.

- 9.1 JICA's promise to dispatch a long Term Expert in the field of Agricultural Extension and Training had been fulfilled by the arrival of Mr. Jiro Oshida in July 1995.
- 9.2 Rehabilitation of facilities and construction of new structures through JICA's Model Infrastructure Improvement Funds had progressed smoothly and were ready for handing-over.
- 9.3 Counterpart personnel training in Japan was progressing as planned. One counterpart had already returned from training in Japan while three were still undergoing training. A fourth counterpart would soon leave for Japan for a short course in Agricultural Extension.
- 9.4 The issue of additional counterpart staff especially in Agricultural Extension and Training had become very urgent. Equally urgent, was the issue of supporting staff, especially office supervisor, drivers, cooks and watchmen.
- 9.5 He was very sorry about delays in the arrival of the training equipment which had been ordered from Japan. He said training programmes could be affected by the delay.
- 9.6 He then reminded members about the implementation plan of the KATC Project as stipulated in the Record of Discussion, saying that:
 - FIRST YEAR: The project would concentrate on rehabilitation of KATC facilities so as to create the right environment for training.
 - SECOND YEAR: Develop curriculae and training materials. Start training courses.
 - THIRD YEAR: Continue to improve curriculae and training materials.
 - FOURTH YEAR: Training activities in full swing, quality of curriculae and training materials emphasized.

FIFTH YEAR: Final year of the project. Study accumulated information to suggest improvements in the agricultural extension methods and future direction of KATC.

9.7 Finally the Team Leader thanked all members especially the Chairman for finding time to come to Moshi for the meeting. He said that KATC's motto was to work in close collaboration with other related institutions so as to achieve the National Goal of ensuring food security in this country and better living standards of small scale rice producers.

10. KATC ANNUAL PLAN FOR THE YEAR 1996/97

KATC Principal presented the plan of activities for the centre covering the period between July 1996 to June 1997. (Appendix 3).

10.1 According to the plan (Appendix 4) the centre expected to train:

40 Extension Officers

40 Irrigation Technicians

20 Mechanization Officers

120 Key Farmers among them 40 Village Extension Officers

Total 240

10.2 KATC Project was also planning to sponsor four (4) counterparts to attend courses in Japan as follows:

- Agricultural Extension Course (3 months) 1 person

- Rice Cultivation Course (9 month) 1 person

- Water Management Course (10 months) 1 person

- Agricultural Machinery Course (10 months) 1 person

Total 4 persons

10.3 KATC also planned to do some verification trials and investigations in the following areas:

- Improvement of the rice production package being used in Lower Moshi.

- Utilization of locally available resources to improve rice farming in Tanzania e.g. Azolla utilization, duck utilization, water buffalo utilization.

10.4 A number of surveys would be conducted on the following subjects:

- Common rice diseases in Tanzania.

- Analysis of economic situation in some rice growing areas of Tanzania.

- Survey of water user's associations (groups) in some irrigated rice growing areas in Tanzania.

- Survey on schistosomiasis disease in Lower Moshi Irrigation Project area.

10.5 In order to reach more farmers and extension officers, KATC Project planned to conduct village outreach programmes in some selected villages during the last quarter of 1996/97.

10.6 Comments on the Annual Plan:

10.6.1 There was a question on how the centre planned to utilize the production farm.

RESPONSE: KATC planned to utilize its ten hectare farm for:

- Training purposes - practical skills demonstrations

- Observation - verification trials etc.

- Production of food crops such as maize, rice, and vegetables which are used by the centre during training and which could be sold to earn revenue for the centre.

DISCUSSION: After some discussion members agreed that KATC farm was a good site for demonstration of improved technologies which the extension service should utilize in its programmes. (ACTION: RALDO Kilimanjaro).

- 10.6.2 Members commended KATC's key farmers training programmes saying that training farmers directly would probably have a greater impact than channeling the message through extension officers. Therefore KATC should aim at training as many key farmers as possible. (ACTION: Principal, KATC)
- 10.6.3 Some members suggested that efforts should be made to inject some aroma into the improved rice varieties such as IR54 so as to increase its popularity among consumers. However, it was agreed that the national priority was to increase production, regardless of the aroma.

11. ANY OTHER BUSINESS

11.1 It was suggested that the Zonal Director for Research and Training - Northern Zone, and RALDO Kilimanjaro region be added on the membership list of the Joint Advisory Committee for the KATC Project. The proposal was unanimously accepted. (ACTION: Secretary)

11.2 A member sought clarification on the role of KATC as compared to the role of KATRIN. It was clarified that KATRIN (Kilombero Agricultural Training and Research Institute) was the National Rice Research Centre where research work was the major activity. KATC was a training centre on irrigated rice farming, which conducted practical training courses for technical staff and farmers dealing with irrigated rice farming. However, it was emphasized that the two centres should work in close collaboration if they were to succeed in their endeavors.

12. CLOSURE

There being no other business the Chairman thanked all members for their contributions and declared the meeting closed at 12.00 noon.

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CHAIRMAN

.....
SECRETARY

KILIMANJARO AGRICULTURAL TRAINING CENTRE PROJECT (KATC) MOSHI

P.O. BOX 1241, MOSHI TEL. 52293/54247

ANNUAL PROGRESS REPORT FROM JANUARY 1995 - MARCH 1996

1. Staff list

Project Management

- Mr.R. J. Shayo - Prinicpal (M.Sc. Agricultural Extension)
- Mr.N. Koibuchi - Project Team Leader
- Mr.K. Shiratori - Project Co-ordinator
- Mr.A. G. Pyuza - Deputy Principal

Administration Unit

- Ms. G. Mshanga - In-charge of catering (Diploma, Home Economics)
- Ms. L. Mchaki - Accounts/assistant (NABOCE)
- Ms. M. Buberwa - Stores Assistant (NAMMC)

Agricultural Extension and Training Department

- Ms. T. K. Mugangala - Head of Department (Postgraduate diploma, Rural Extension and Teaching)
- Mr. J. Oshida - Agricultural Extensionist
- Ms. M. Mũka - Instructor (Diploma, Crop Production)

Rice Cultivation Department

- Mr. A. G. Pyuza - Head of Department (M.Sc., Agricultural Technology)
- Mr. M. Tomitaka - Agronomist
- Mr. R. K. Lussewa - Instructor (B.Sc., Agriculture)
- Mr. N. Mvukiye - Instructor (B.Sc., Agriculture)
- Ms. J. Omari - Instructor (Diploma, Crop Production)

Water Management Department

- Mr. G. Maregesi - Head of Department (M.Sc., Agricultural Engineering)
Mr. S. Tanaka - Agricultural Engineer (Irrigation)
Mr. K. Nkya - Instructor (B.Sc., Civil Engineering)
Mr. G. S. Marawiti - Instructor (Diploma, Irrigation)

Agricultural Machinery Department

- Mr. N. Nkondora - Head of Department (B.Sc., Agriculture)
Mr. K. Yamaguchi - Agricultural Engineer (Machinery)
Mr. F. J. Kimaryo - Instructor (Diploma, Agricultural Mechanization)
Mr. E. D. Mziray - Instructor (Diploma, Agricultural Mechanization)
Mr. J. P. Ringo - Post-harvest Technician (Certificate, General Agriculture)
Mr. S. K. Mokoki - Assistant Mechanic (Certificate, Mechanical Technician)
Mr. L. Macha - Driver
Mr. G. Marka - Driver

2. Staff requirements

2.1 Administration

1. Office Supervisor - 1
2. Stores Officer - 1
3. Secretary - 1
4. Cooks - 7
5. Watchmen - 10
6. Cleaners - 4

2.2 Agricultural Extension and Training Department

1. Bsc. degree holder in General Agriculture - 1
2. Librarian - 1
3. Audio Visual Technician - 1

2.3 Agricultural Machinery Department

- 1. Mechanic - 1
- 2. Tractor Operator - 2
- 3. Drivers - 2

3. Staff arrivals

- 3.1 February 1995 - Ms. Buberwa - Transferred to KATC from RALDO Kilimanjaro
- 3.2 July 1995 - Mr. J. Oshida - (JICA Expert) arrived at KATC to become
the expert for Agricultural Extension and Training
- 3.3 August 1995 - Mr. R.J. Shayo - Arrived from a three (3) months study trip of Japan
- 3.4 August 1995 - Mr. N. Mvukiye - Transferred to KATC from MATI Maruku
- 3.5 August 1995 - Mr. G. Marawilli - Transferred to KATC from MATI Ilonga
- 3.6 September 1995 - Ms. J.N. Omari - Transferred to KATC from ARI Hombolo Dodoma
- 3.7 December 1995 - Mr. G. Marka - Transferred to KATC from RALDO Kilimanjaro.

4. Staff departures

- 4.1 19th August 1995 - Ms. Margaret Harrison - Passed away at Muhimbili Hospital
- 4.2 10th February 1996 - Mr. G. Maregesi - Left for further studies in Japan
- 4.3 20th February 1996 - Mr. A.G. Pyuza - Left for further studies in Japan
- 4.5 20th February 1996 - Mr. E. D. Mziray - Left for further studies in Japan.

5. Study tours for staff

5.1 From 20/8 to 1/9/95 - Study tour in Egypt

- | | |
|------------------|------------------|
| Mr. K. Shiratori | Mr. A. G. Pyuza |
| Mr. G. Maregesi | Mr. N. Nkondora |
| Mr. S. Tanaka | Mr. K. Yamaguchi |

5.2 From 27/8/95 to 1/9/95 - Study tour to Mwea Irrigation Scheme and Kenyatta University of Agriculture - Kenya.

Mr. K. Shiratori	Mr. S. Tanaka
Mr. J. Oshida	Mr. K. Yamaguchi
Mr. M. Tomitaka	Mr. A. G. Pyuza
Mr. G. Maregesi	Mr. N. Nkondora
Ms. T. Mugangala	Mr. M. Misabo

5.3 From 4/7 - to 7/7/95 study trip to Dar es salaam International Trade Fair

Mr. K. Koibuchi	Mr. N. Nkondora
Mr. G. Maregesi	Mr. A.G. Pyuza
Mr. G. Mshanga	Mr. Z. K. Sarakikya
Mr. Ngoro	Ms. Muka.
Mr. F. Kimaryo	

6. Studies and surveys conducted by KATC staff:

6.1 From 20th October to 20th December 1995. Soil survey in selected rice growing areas including:

Mara, Mwanza, Shinyanga, Tabora, Singida, Dodoma, and Morogoro regions.

- Conducted by Mr. F. Nagumo, (JICA Short Term Expert) and Mr. A. G. Pyuza (Rice Cultivation Department)

6.2 From 3rd November 1995 to 5th February 1996:

Survey on Water User's groups in selected rice farming areas including:

Lower Moshi, Kivulini in Mwanza district, Kwemazandu in Korogwe and Bahi in Dodoma.

Mr. K. Tamura (JICA Short term Expert on Rural Sociology), Mr. G. Maregesi (Water Management department), Mr. K. Nkya (Water Management Department), Mr. K. Shiratori (Project Co-ordinator) Mr. Kagubila (Local consultant on Rural Sociology)

6.3 From 3rd November - 30th November 1995

- Survey on water resource in Lower Moshi
- Conducted by Mr. T. Yanagida (JICA Short Term Expert Water Resource Assessment) Mr. G. Maregesi and Mr. K. Nkya (KATC Water Management Department) in collaboration with Kilimanjaro Agricultural Development Project (KADP).

6.4 From 5th December - 26th December 1995

- Survey on schistosomiasis in selected rice growing areas.
- Conducted by Prof. K. Yasuraoka (JICA Short Term Expert in Schistosomiasis) Mr. A. G. Pyuza (Rice Cultivation Department) and Mr. G. Maregesi (Water Management Department).

6.5 From 8th December 1995 to 19th January 1996 survey on the possibility of designing and developing appropriate agricultural machinery for rice cultivation in Tanzania.

Conducted by Dr. Hai Sakurai (JICA Short Term Expert On Agricultural Machinery Design) and Mr. N. Nkondora (Agricultural Machinery Department).

After each survey, a seminar for KADP and KATC staff was organized to discuss the results.

Some of the survey reports have been printed and are available for distribution.

7. Training courses conducted

Training of government personnel and Key Farmers from rice growing areas is the main function of KATC. The first training course was officially opened at KATC on 12th September 1995. Prior to that a number of activities were done to prepare materials and staff for the job of teaching.

Examples of such activities include:

- Team development Workshop for all KATC Staff organized and conducted by Teaching Methodology Improvement Programme - Morogoro (from 6th February to 10th February 1995).
- A staff orientation seminar for all KATC staff on irrigated Rice Cultivation, Water Management and Agricultural Machinery (from 27th February to 10th March 1995).
- All departments participated in surveys to collect materials for writing a textbook on Lower Moshi Irrigation Project.
- Ten staff members participated in study trips to Egypt and Kenya organized through JICA's Technical Exchange Programme. (From 20th August to 1st September 1995)

- All departments visited relevant institutions in the country to collect information which was needed in the development of training curricula.
- More information was collected through a seminar for all RALDO's on rice cultivation in Tanzania (from 12th to 15th December 1995) and another seminar for DALDO's/District Crop Officers on Potentials and Constraints of developing Rice Cultivation in Tanzania (from 12th to 15th March 1996)
- Course participants were also good sources of information. Participants for all courses arrived with papers on the situation of Rice Cultivation, Irrigation and Water Management or Agricultural Mechanization in their areas. These papers were presented, discussed and compiled for future references. The courses conducted during the reporting time were as follows:

Date	Duration	Course	Participants
From 12/9/1995 To 19/10/1995	38 days	Rice Cultivation	20 Extension Officers from Kilimanjaro, Arusha and Tanga regions
From 13/10/1995 To 23/11/1995	24 days	Water Management	20 Irrigation Technicians from Kilimanjaro, Arusha and Tanga regions
From 7/11/1995 To 6/12/1995	30 days	Tractor Operators	10 Tractor Operators from Kilimanjaro, Arusha and Tanga regions.
From 27/11/1995 To 8/12/1995	12 days	Key Farmers course	20 Rice Farmers from Tanga
From 16/1/1996 To 22/2/1996	38 days	Second Rice Cultivation	20 Extension Officers from Morogoro, Coast and Dar es salaam regions
From 30/1/1996 To 28/2/1996	30 days	Rice Mechanization	9 Mechanization Officers from Arusha, Tanga and Kilimanjaro region

Still within the 1995/96 financial year the following training courses are coming up soon.

Date	Duration	Course	Participants
From 9/4/1996 To 19/4/1996	11 days	Second Key Farmers course	24 Rice Farmers from Coast, and Dar es salaam regions
From 7/5/1996 To 30/5/1996	24 day	Second Water Management	20 Irrigation Technicians from Dar es salaam, Coast and Morogoro
From 3/6/1996 To 15/6/1996	12 days	Third Key Farmers' course	20 Rice Farmers from Morogoro region

All course participants were issued with certificates of attendance from the Ministry

8. KATC development activities

Local development funds had been requested for rehabilitation of staff houses but since no money was allocated no work could be done in those houses. KATC Project also requested additional donor funds so as to add some new facilities to the centre.

Funds to the tune of US\$ 623,779 was approved by JICA under the Model Infrastructure Improvement Programme, and through it KATC Project managed to accomplish the following development activities.

- New construction

- (i) Agricultural Laboratories and Library complex
- (ii) Multipurpose hall and First Aid room
- (iii) Machinery shed
- (iv) Farm attendants house
- (v) Water buffalo shed with bio-gas-plant
- (vi) Duck pen
- (vii) Water reservoir
- (viii) Borehole and pump house
- (ix) Elevated water tank tower
- (x) Net house
- (xi) Bird barrier
- (xii) Booster pump house
- (xiii) Tractor driving course.

- Renovation of existing facilities

- (i) Storage facility
- (ii) Refurnishing offices and classrooms
- (iii) Improving water supply system
- (iv) Improving electric power supply
- (v) expansion of the farm pond.

Most of the construction work has been completed and the facilities are ready for handing over to the Government of the United republic of Tanzania.

9. KATC Finances

- Local funds:

During the reporting period KATC suffered severe problems with local funding. It was originally envisaged that training costs and other recurrent costs would be met by local funds, leaving donor funds to take care of teaching materials, machinery and equipments.

Understandably this was not possible due to the adverse economic situation facing our Nation. Out of the requested T.sh 63,344,000/= for recurrent KATC was allocated Tsh 20,000,000/= out of which only Tsh. 3,956,970/= has been received to date.

With these meagre fund it is obvious that KATC would have failed completely to perform its major activity, i.e. training of government personnel and farmers. It is for this reason that JICA decided to commit additional funds to meet the cost of running all the courses and seminars mentioned earlier. A summary of the local recurrent funds received, expenditure and balance is on appendix A. Appendix B shows recurrent expenditure by JICA between April and December 1995.

Development funds

No local development funds were allocated to KATC this financial year. All development work done at KATC during 1995/96 financial year has been done through JICA funds. Over US \$ 600,000 has already been spent for development work at KATC.

Problems facing KATC

(i) Local staff

The list of local staff, especially supporting staff needed at KATC is still long. We request the Ministry to look into the possibilities of alleviating this problem.

(ii) Staff housing

KATC does not have staff houses of its own. We depend on normal allocation from the regional pool of government houses. Even though KATC has been favoured to be allocated eight grade A and five grade B houses, there are about ten staff members who have not been allocated houses.

The situation will be even worse when we receive the additional staff we have requested. We request the Ministry to discuss this issue with JICA to see how they could co-operate in solving the problem.

(iii) Staff motivation

So far staff morale has been satisfactorily high at KATC, but I am afraid to say that keeping it high may soon become a big head ache. We have many activities at KATC, many of which are very demanding on staff time and energy. Very often KATC staff have to work beyond normal office hours and on weekends and yet we have been unable to remunerate them for their extra work. Unlike in other donor assisted projects, the issue of staff motivation in JICA funded projects is left entirely to the recipient government. Since the situation of our government is well known, we request the Ministry to ask JICA to reconsider its stand on the issue of costs for staff motivation. We earnestly feel that it is a very important issue.

(iv) Local funds

We request the Ministry to look favourably upon our budget request for the year 1996/97 so as to allow us, Tanznians, to run KATC with JICA providing technical and materials support, as originally agreed.

9. Conclusion

In conclusion, KATC is the National Training Centre on irrigated rice cultivation including related subjects such as water management, mechanization and agricultural extension. Our immediate target group is government field personnel working in the field of rice cultivation, irrigation and agricultural machinery. However our ultimate target is all rice farmers in Tanzania. We aim at helping them to produce more paddy per unit area, use the limited water resource judiciously and reduce work drugery through use of machinery i.e tractor or animal power. We request all insitutions in these fields to collaborate with KATC in their endeavors so that by working together we can achieve our objective more effectively and efficiently

**Speech for 1996/97 Joint Advisory Committee Meeting on 1st April,
1996 by N. Koibuchi (Team Leader - KATC Project)**

It is my great pleasure to have few words at the beginning of the 2nd Joint Advisory Committee meeting for KATC. There might be some repetition to what Mr. Shayo has already explained about the action plan for 1996/97. However I would like to stress some of the points which are important for us.

We now have Mr. Oshida, expert for extension, who was being awaited. We also have new and rehabilitated facilities which satisfy most of our requirement for conducting training activities. This rehabilitation work has been completed within a short time of 6 months and the handing over ceremony will be conducted this afternoon.

As KATC's principal activity, we have conducted training courses for government personnel and key farmers as initially planned despite financial difficulties the country is facing. We also conducted RALDOs seminar with respectives of 17 regions in order to create their awareness so that training becomes more effective and efficient. The seminar was very beneficial and worthwhile.

Under JICA "Technical Exchange programme" some of KATC staff members visited Egypt and Kenya. We have also received seven (7) short term experts from Japan.

They are:

1. Mr. Suzuki for Agricultural extension and rural development
2. Mr. Iguchi for supervision of the rehabilitation works
3. Mr. Nagumo for soil survey
4. Mr. Tamura for rural sociological survey
5. Mr. Yanagida for water resource survey and analysis in Lower Moshi Area
6. Professor Yasuraoka for irrigated rice environment
7. Dr. Sakurai for appropriate agricultural machinery development.

We may invite some of them to KATC again to carry out further studies so that some teaching materials will be prepared. Mr. Shayo has been to Japan for studying agricultural extension under the counterpart training programme. Three more KATC staff members are in Japan since February, 1996 attending 10 month training courses.

Not all the things went well according to the plan. We have not received another counterpart for extension and training section which is the core section for our activities. Supporting staff such as office supervisor and typists are still in need. Delayed arrival of equipment from Japan is another problem. We are working with responsibility and trying to complete our task within a given time. I hope that we all understand why we are working so hard.

I would like to introduce you briefly a five year implementation plan based on TSI which we agreed upon during the 1st Joint Advisory Committee Meeting last year. KATC project

started as a five year project.

In the first year, our main activities were to rehabilitate facilities and establishing organisation. We regarded the second year which is this year as a year for foundation. We worked on curriculum development, preparation of teaching materials among other things and started training courses. In the coming fiscal year as the third year of the project, our training courses will start in full swing and all the activities will be geared for this objective. The fourth year will be a year for improving quality of our training courses to higher level. We expect that number of teaching materials produced by ourselves will be introduced. The fifth year as the final year of the project, our work will be focused on suggestions for improvement of the agricultural extension system and KATC's future development. We recognise the importance of communicating with the ministry's headquarters as well as other related institutions for synchronising our activities with the national strategy.

We are receiving encouraging information that line transplanting is now becoming more popular than random transplanting in some of the areas where our first batch of ex-participants are working. If the production of rice at the national level increase by 1% , the benefit will exceed the cost invested to this project. We hope that KATC will contribute to the national strategy by achieving increase of rice production in this country by not only 1% but 30 or 50%.

It is our motto that KATC project should be implemented in close relationship with the ministry of agriculture and other institutions. I hope that people who are present here today

KILIMANJARO AGRICULTURAL TRAINING CENTRE
 P.O. BOX 1241 MOSHI TEL. 52293
 ANNUAL WORKPLAN FOR THE YEAR 1996/97

THE OVERALL WORKPLAN WILL BE AS FOLLOWS:

ACTIVITIES	1996												1997			
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1. Training of Government Personnel and Key Farmers																
1.1 Rice cultivation courses for extension officers																
1.2 Water Management course for irrigations <i>Irak</i>																
1.3 Tractor operators courses																
1.4 Rice mechanization courses																
1.5 Key Farmers courses																
2. Counterpart Training in Japan																
2.1 Agricultural Extension course																
2.2 Rice Cultivation course																
2.3 Water Management course																
2.4 Agricultural Machinery course																
3. Research Verification Trials																
3.1 Improving the rice production packages																
3.2 Utilization of locally available resources																
3.3 Diversified utilization of paddy plots																
4. Outreach Programmes																
4.1 Surveys to collect information																
4.2 Planning outreach programmes																
4.3 Conducting some outreach programmes																
5. Production Farm Activities																
5.1 Maize production																
5.2 Vegetables																
5.3 Water melons																
5.4 Soyabeans																

N.B: DETAILED DEPARTMENTAL PLANS ARE ATTACHED

Kilimanjaro Agricultural Training Centre

ANNUAL WORKPLAN FOR 1996/97 FOR EXTENSION & TRAINING DEPARTMENT

Activities	1996						1997					
	7	8	9	10	11	12	1	2	3	4	5	6
1. Enhancement of training capacity trainers												
1.1 On the job training												
1.1.1 Through activities of 2, 3, 4 & 5												
1.2 Consultant services in Japan												
1.4 In country counterpart training (TOT)												
2. Improvement of training methods												
2.1 Implementation of village outreach programmes												
2.1.2 Review of training plan												
2.2 Training curriculum												
2.2.1 Formulation of training curriculum												
2.2.2 Improvement of training curriculum												
3. Improvement of teaching materials												
3.1 Information collection on extension staff & farmers												
3.1.1 Conduct of seminars												
3.1.2 Visiting institutions, research & training centres												
3.1.3 Attending of extension courses (SUA, MATI, M.I.T.I)												
3.2 Demonstration farm management plan												
3.2.1 Data collection on price trend of paddy & white rice												
3.2.2 Village outreach programme formulation												
3.3 Field survey												
3.3.1 Farm economy survey												
3.3.2 Workload on rice farming												
3.3.3 Gender analysis on rice farming												
3.4 Preparation of training materials												
3.4.1 Textbook on LMSP												
4. Training government personnel & key farmers												
4.1 Training of key farmers												
4.2 Follow-up of trained farmers												
5. Documentation												
5.1 Records keeping												
5.1.1 Publication of news letter & other R.A.T.C. publications												
5.1.2 Updating of R.A.T.C. and D.A.T.C.'s activities												
6. Others												
6.1 Improvement of R.A.T.C. regulations												
6.2 Management of audiovisual equipment												
6.3 Short term experts												
6.4 Recommendation of extension methods on rice farming												
6.5 Making teaching materials using video camera, slide projector etc												

N.B.

1. Survey on farm economy workload for rice farming, gender analysis on rice farming, price trend for paddy and white rice are conducted to obtain additional information on training materials.
2. Conducting of demonstration farm will be a display for teaching purposes for key farmers' course.
3. Lecture on agricultural extension are included in other courses of rice cultivation, water management and agricultural machinery.
4. TOT stands for training of trainers.
5. SUA - Sukoune University of Agriculture.

Annual Work Plan of Rice Cultivation Department and Production Farm for 1996/97

Activities	1 9 9 6						1 9 9 7					
	7	8	9	10	11	12	1	2	3	4	5	6
1. Enhancement of Technical Capability of Trainers												
1.1 On the job training through the activities of 2, 3, 4, 5												
1.2 Counterpart training in Japan (coordinated with other Departments)												
Rice Cultivation Training Course in Japan (one each for 1996 and 1997)												
1.3 In-country training (coordinated with other Departments)												
2. Improvement of Training Methods												
2.1 Training Plan												
Review of training plan												
2.2 Training curriculum												
Improvement of training curriculum												
3. Improvement of Training Materials												
3.1 Information collection												
3.1.2 Visit to research and training institutions												
3.1.3 Attending rice related meetings (rice research programme, etc.)												
3.2 Verification trials												
3.2.1 Trials of improving the irrigated rice production package												
3.2.2 Trials of locally available resources in rice farming												
3.2.3 Trials of diversified utilization of paddy plots												
3.3 Field survey (survey of rice farming areas, short-term experts of azolla utilization, rice diseases, soil survey, and duck utilization are requested)												
3.4 Preparation of training materials												
4. Training for Government Personnel and Key-Farmers												
4.1 Training for agricultural field officers												
4.1.1 Third rice cultivation training course (27/8-10/10, 20 participants)												
4.1.2 Fourth rice cultivation training course (14/1-27/2, 20 participants)												
4.2 Cooperation in other courses organized by other Departments												
4.3 Follow-up guidance for ex-trainees												
4.3.1 Rau river village in Kilimanjaro Region												
4.3.2 Mandaka Mnono village in Kilimanjaro Region												
4.3.3 Other areas (to be decided later)												
4.4 Outreach programmes (to be decided later)												
5. Others												
5.1 Cultivation of upland crops at the production farm												
5.2 Collaboration with other institutions such as Rice Research Programme, TPRI, Mlingano Agricultural Research Institute												
5.3 Documentation and publication												
5.3.1 Rice farming and agricultural extension series (compilation of reports of participants attending the rice cultivation course)												
5.3.2 Lower Moshi Irrigation Project												
5.3.3 Proceedings of the staff orientation seminar on irrigated rice												
5.3.4 Proceedings of a seminar for RALDOs on rice farming												
5.3.5 Proceedings of a seminar of potentials and constraints for improvement of rice cultivation in Tanzania												
5.3.6 Cooperation in publishing Rice and People in Tanzania												
5.3.7 Cooperation in revising KATC Information Booklet on Training Courses												

Programme Plan for 1996/97 for water management Department

Activities of Department	1996						1997					
	7	8	9	10	11	12	1	2	3	4	5	6
1. Enhancement of Training Capacity of Trainers												
1.1. On the Job Training Through activities 2,3,4												
1.2. Counterpart training in Japan												
1.3. In-country counterpart training												
2. Improvement of Training Methods												
2.1. Training plan												
2.1.1. Formulation of training plan												
2.1.2. Review of training plan												
2.2. Training curriculum												
2.2.1. Formulation of training curriculum												
2.2.2. Review of curriculum												
3. Improvement of Training Materials												
3.1. Information collection												
3.1.1. Conduct of seminars												
3.1.2. Visit to research and training institutions												
3.1.3. Attending irrigation related meeting												
3.2. Verification trails												
3.2.1. Study of irrigation facilities of low cost power												
3.2.2. Study of operation and maintenance of irrigation systems												
3.2.3. Study of water distribution plan												
3.2.4. Determination of crop water requirement												
3.3. Field Survey												
3.3.1. Study on paddy irrigation areas												
3.3.2. study on water users groups												
3.4. Preparation of training materials												
3.4.1. Textbook on paddy irrigation												
3.4.2. Textbook on Water Users Groups												
3.4.3. Operation and maintenance manual of irrigation facilities												
4. Training for government personnel and Key Farmers												
4.1. Training of irrigation personnel												
4.2. Training of Key-farmers												
4.3. Follow up guidance for ex-trainers												
4.4. Outreach training program												
5. Others												
5.1. Operation and maintenance of farm pond, water boreholes, building etc												
5.2. Observation of meteorological data												
5.3. Collection and compilation of climatic data												

KILIMANJARO AGRICULTURAL TRAINING CENTRE

ANNUAL WORKPLAN 1996/97 AGRICULTURAL MACHINERY DEPARTMENT

ACTIVITIES	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1. Enhancement of training capacity of trainers.												
1.1 On the job training through activities 2,3,4												
1.2 Computer training in Japan												
1.3 In - country training												
2. Improvement of training methods												
2.1 Training plan												
2.1.1 Formulation of training plan												
2.1.2 Review of training plan												
2.2 Training curriculum												
2.2.1 Formulation of training curriculum												
2.2.2 Review of training curriculum												
3. Improvement of training materials												
3.1 Information collection												
3.1.1 Conduct of seminar												
3.1.2 Visit to research and training institutions												
3.1.3 Attending agricultural engineering meetings												
3.2 Preparation of training materials (text-book)												
3.2.1 Rice mechanization course												
3.2.2 Tractor operators course												
3.3 Verification trial												
3.3.1 Designing and trial making of machines (*)												
3.3.2 Field studies (2)												
4. Training for government personnel and key farmer												
4.1 Agricultural machinery training												
4.1.1 Rice mechanization course 10/10/96-30/1/96 & 13/5-11/6												
4.1.2 Tractor operators course 27/8/96-25/9/96 & 27/3-25/4												
4.1.3 Outreach training programme July 1996 & March 1997												
4.1.4 Key - farmer course												
4.2 Follow-up guidance for ex-trainees March 1997												
5.0 Others												
5.1 Collaboration with institutions concerned												
5.2 Repair and maintenance of KATC vehicles & agri. machinery												

N.B.: (1) Field leveler, manual operators, manual drawn puddler, etc.
 (2) Performance test of harvesting machine, thresher, paddy shattering habit test etc.

FARMING CALENDAR FOR THE PRODUCTION FARM IN 1996

Plot no.	Particulars	Months														
		1	2	3	4	5	6	7	8	9	10	11	12			
B1	Maize															
B2	Vegetable and soybeans															
B3	Maize															
B4	Watermelon															
B5	Maize															
B6	Soybeans															
C1	Maize with rice husk															
C2	Maize with carbonized rice husk															
C3	Maize with farm yard manure															
C4	Maize															

Training courses to be conducted at KATC from July 1996 to June 1997

Course name	Training period	Regions (areas)	1 9 9 6							1 9 9 7										
			7	8	9	10	11	12	1	2	3	4	5	6						
Rice cultivation course (20 participants)	27/Aug-10/Oct/1996	Mara, Mwanza, Shinyanga																		
Water management course (20 participants)	14/Jan-27/Feb/1997	Tabora, Singida, Dodoma																		
	29/Jan-27/Feb/1997	Mara, Mwanza, Shinyanga																		
	6/May-4/Jun/1997	Tabora, Singida, Dodoma																		
Tractor operator's course (10 participants)	27/Aug-25/Sep/1996	Dar es Salaam, Coast, Mtwara, Lindi, Zanzibar																		
	27/Mar-25/Apr/1997	Mwanza, Mara, Shinyanga, Kagera																		
Rice mechanization course (10 participants)	10/Oct-8/Nov/1996	Dar es Salaam, Coast, Mtwara, Lindi, Zanzibar																		
	13/May-11/Jun/1997	Mwanza, Mara, Shinyanga, Kagera																		
Key-farmer's course (3 key-farmers per extension officer)	28/Oct-8/Nov/1996	Kilimanjaro																		
	11/Nov-22/Nov/1996	Shinyanga (or Mara and Mwanza)																		
	25/Nov-6/Dec/1996	Mara and Mwanza (or Shinyanga)																		
	17/Mar-28/Mar/1997	Arusha																		
	14/Apr-25/Apr/1997	Tabora (or Singida and Dodoma)																		
	16/Jun-27/Jun/1997	Singida and Dodoma (or Tabora)																		

Note:

Participants, except those of the key-farmer's course are nominated by the concerned regional agricultural and livestock development offices (few participants are nominated by the principals of MATIs).

Participants of the key-farmer's course are nominated by the extension officers attended the rice cultivation course.

KILIMANJARO AGRICULTURAL TRAINING CENTRE

RECURRENT BUDGET ESTIMATES FOR THE YEAR 1996/97

A. TRAINING COSTS

Courses	No.	Target group	Group size	Duration	Cost per participant per day (T. Shs)	Total Cost (T. Shs).
1. Rice Cultivation	2	Village Extension Officers	20	45 days	4,000.00	7,200,000.00
2. Water Management	2	Village irrigation technicians	20	40 days	4,000.00	6,400,000.00
3. Rice Mechanization	2	Village Mechanization officers	10	30 days	4,000.00	2,400,000.00
4. Tractor Operators course	2	Village Tractor Operators	10	30 days	4,000.00	2,400,000.00
5. Key Farmers' course	6	Key farmers from rice growing area	26	12 days	4,000.00	7,488,000.00
TOTAL	14		276 participants			25,888,000.00

B. TRAVEL EXPENSES FOR PARTICIPANTS

Average fare T.Sh.6,000.00 x 2 x 276 participants = T.Sh. 3,312,000.00

C. EXTERNAL RESOURCE PERSONS:

- Honoraria; T.Sh. 5,000/= per hour x 4 hours x 10 persons = T.Sh. 200,000.00

D. STUDY TOURS FOR COURSE PARTICIPANTS AND STAFF:

- 290 persons x 7 days x T.Sh.7,600/= per day = T.Sh.15,428,000.00

E. STAFF ALLOWANCES:

- Travelling on duty/leave; 30 days x 25 persons x 7,600/= = T.Sh. 5,700,000.00

Fares; T.Sh.6,000/= x 2 x 25 persons = T.Sh. 300,000.00

- Lunch allowances 25 persons x 2,000/= per day x 100 days = T.Sh. 5,000,000.00

F. UPKEEP OF STATION

1. Compound maintenance = T.Sh. 2,000,000.00

2. Utilities (water and electricity) = T.Sh. 10,000,000.00

3. Motor vehicle running and maintenance = T.Sh. 10,000,000.00

4. Farm machinery operation and maintenance = T.Sh. 8,000,000.00

5. Casual labour costs; 10 persons x 800/= per day x 300 days = T.Sh. 2,400,000.00

RECURRENT ESTIMATES GRAND TOTAL

T.Shs.88,828,000.00

Kilimanjaro Agricultural Training Centre (KATC)
DEVELOPMENT BUDGET ESTIMATES FOR 1996/97 FISCAL YEAR

Activity	Value of work completed	Value of work to be done			Total
		1996/97	1997/98	1998/99	
1. CONSTRUCTION					
- Two grade B house	0	12,000,000.00	12,000,000.00	6,000,000.00	30,000,000.00
2. REHABILITATION					
- Eight grade A houses to be re painted	0	6,000,000.00	-	-	6,000,000.00
- Four grade B houses to be painted	0	4,000,000.00	-	-	4,000,000.00
3. FURNISHING					
- Eight sofa sets		2,400,000.00	-	-	2,400,000.00
- Eight refrigerators		4,000,000.00	-	-	4,000,000.00
- Eight coffee tables		160,000.00	-	-	160,000.00
TOTAL		28,560,000.00	12,000,000.00	6,000,000.00	58,560,000.00

- (1) KATCにおけるこれまでの州別研修生
- (2) 研修コース図 (稲作栽培・中核農民両コース)
- (3) 研修体系図
- (4) 研修教材一覧
- (5) Progress Report from January 1996--March 1997
- (6) Financial Report Summary (1996/97 F. Y.)
- (7) Self Help Fund Report (January 1995-February 1997)
- (8) Recurrent Expenditure Report for 1996/97 F. Y.
- (9) Development Budget Estimates for 1997/98 F. Y.
- (10) Recurrnt Budget Estimates for 1997/98 F. Y.
- (11) Annual Plan for 1997/1998
- (12) KATC Newsletter "Rice and People in Tanzania " (Vol. 2, No. 3, Jan. , 1997)
- (13) Matters Arising from The Minutes of The Second Joint Advisory
Committee Meeting

付属資料6. KATCに係る資料

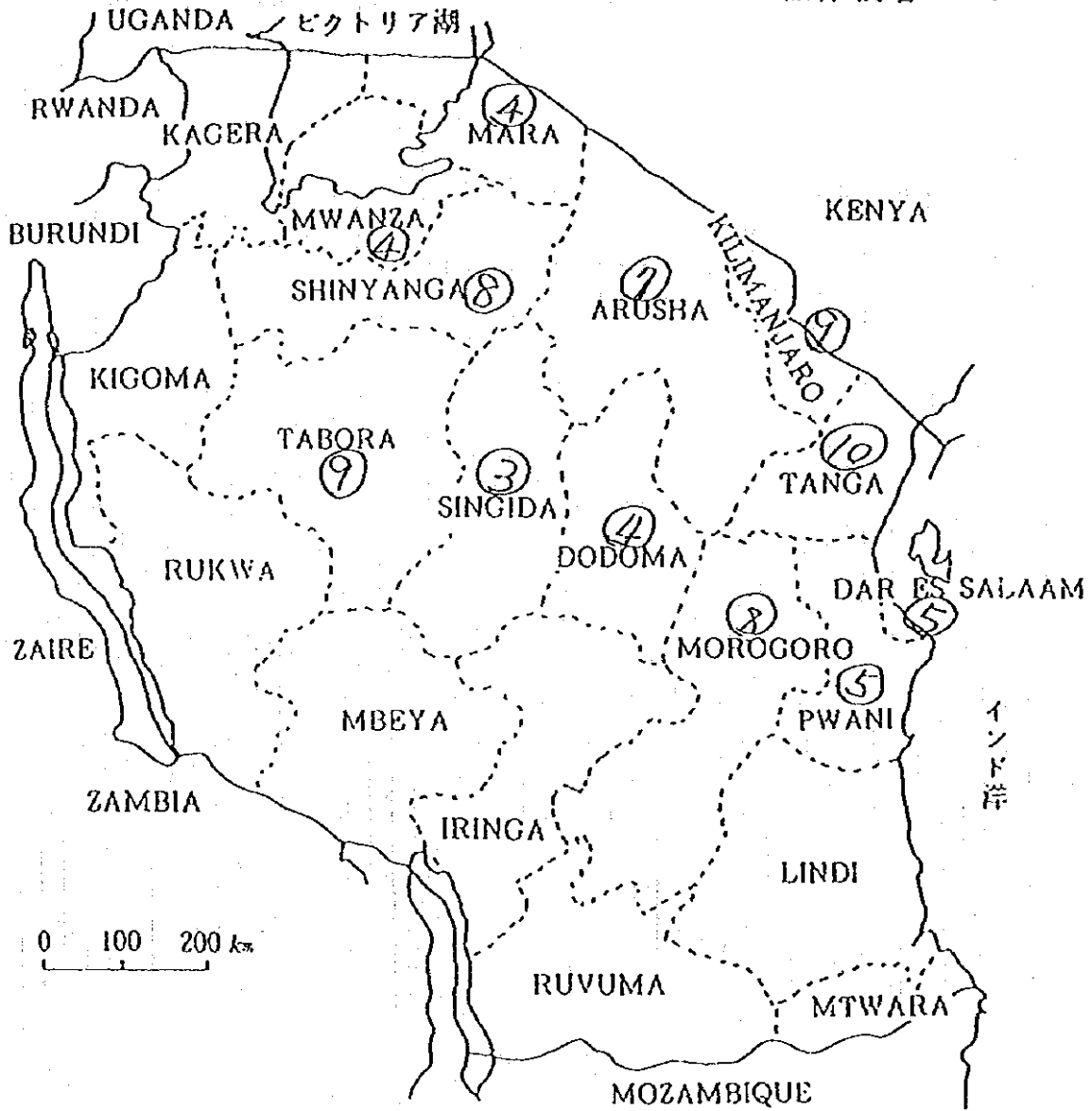
(1) KATCにおけるこれまでの州別研修生数

(単位；人)

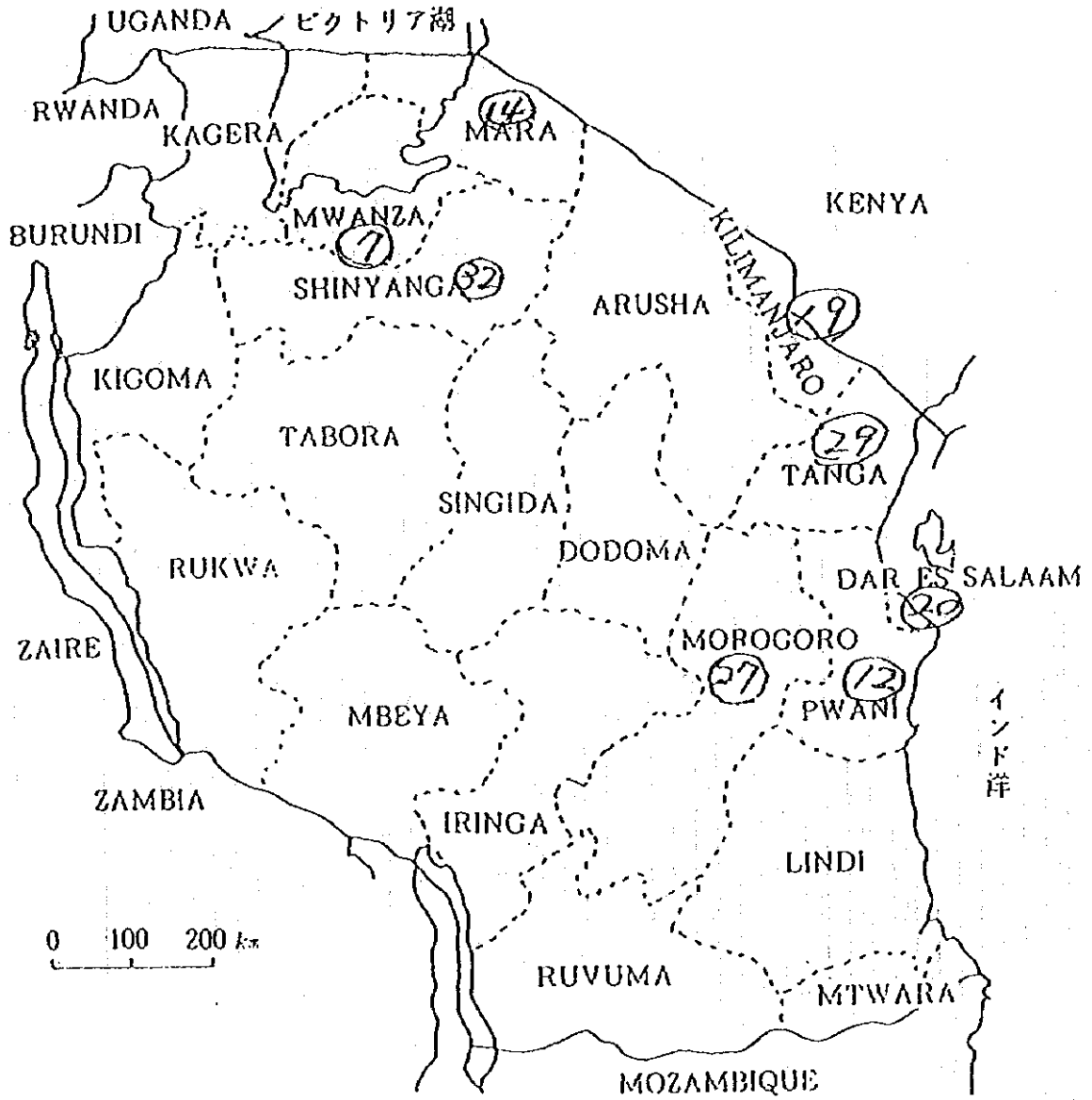
州名	稲作栽培コース	水管理コース	農業機械コース	中核農民コース	合計
Kagera	-	1	-	-	1
Mara	4	1	-	14	19
Mwanza	4	7	-	17	28
Kigoma	-	-	-	-	0
Shinyanga	8	6	-	32	46
Arusha	7	8	9	-	24
Kilimanjaro	9	9	7	19	44
Tanga	10	6	4	29	49
Tabora	9	-	-	-	9
Singida	3	-	-	-	3
Dodoma	4	-	-	-	4
Morogoro	8	8	-	27	43
Pwani	5	6	2	12	25
Dar Es Salam	5	4	4	20	33
Rukwa	-	-	-	-	0
Mbeya	-	-	-	-	0
Iringa	-	-	-	-	0
Lindi	-	-	6	-	6
Zanzibar	-	-	-	-	0
Total	76	56	32	170	334

(2) 研修コース図

稲作栽培コース



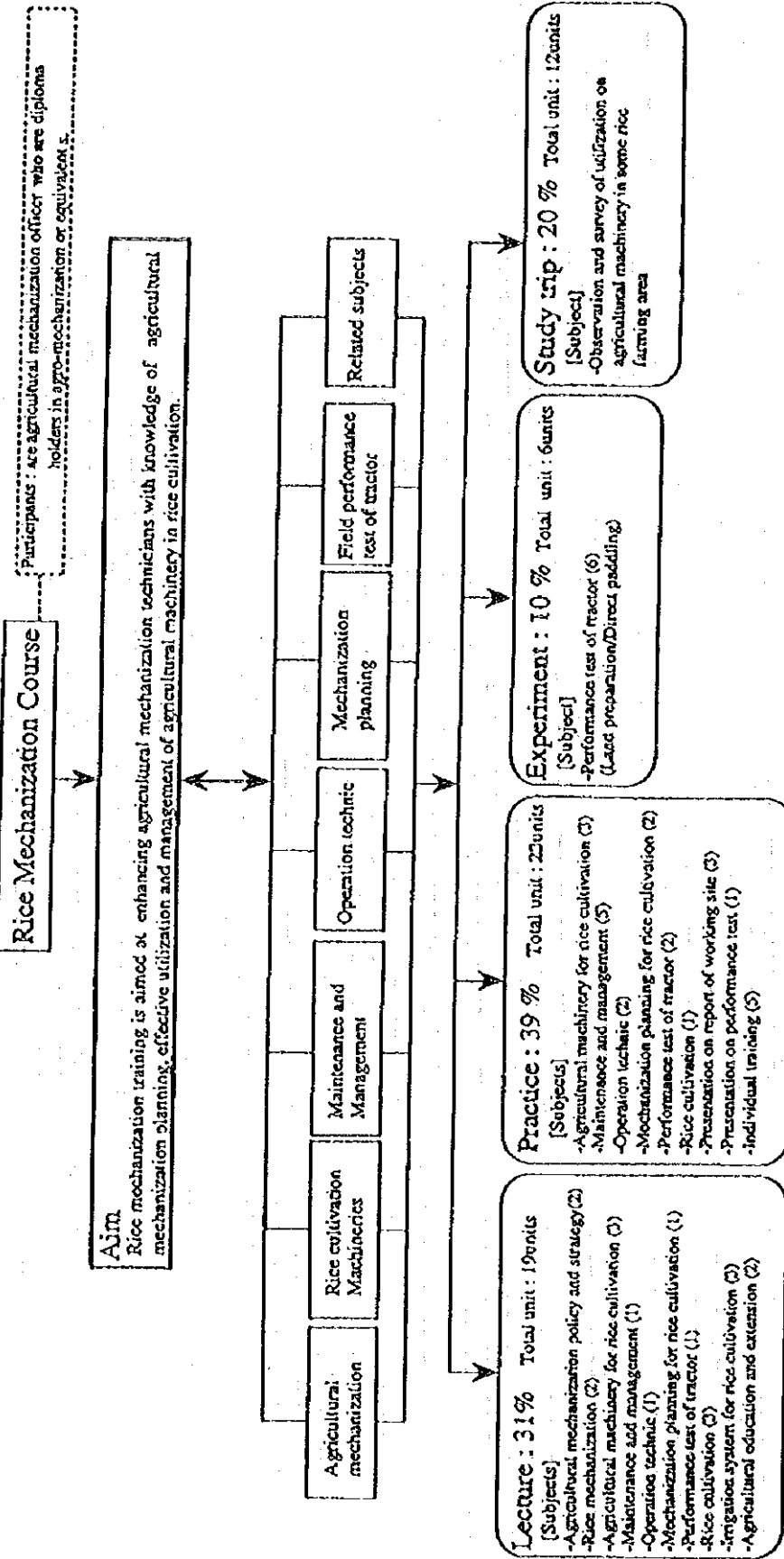
中核農民コース



(3) 研修体系図

Agricultural Machinery Training

Training curriculum



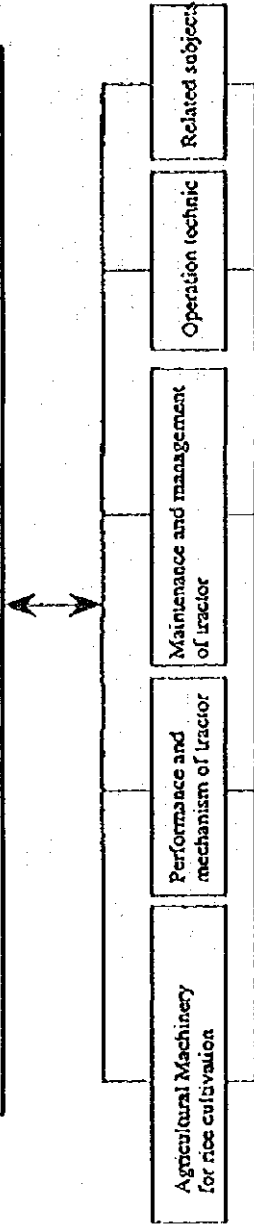
Agricultural Machinery Training

Training curriculum

Tractor operator's course

Participants : are tractor operators under tractor hire service, agricultural projects, agricultural cooperatives, etc. in rice production areas.

Aim
The tractor operator's training is aimed at enhancing knowledge and skills of agricultural machinery operators working in rice cultivation areas.



Lecture : 13% Total unit : 8units
[Subjects]
-Agricultural machinery used for land preparation (1)
-Used for transplanting, direct seeding, weeding and plant protection (1)
-Used for harvesting and processing (1)
-Performance and mechanism of Tractor (1)
-Maintenance and management of Tractor (1)
-Safety operation (2)
-Rice cultivation (1)

Practice : 67% Total unit : 41units
[Subjects]
-Performance and mechanism of tractor (12)
-Trouble shooting of tractor (3)
-Maintenance and management of tractor (3)
-Safety operation (2)
-Operation technic with implements (14)
-Rice cultivation (2)
-Individual training (5)

Study trip : 20% Total unit : 12units
[Subject]
-Observation and survey of utilization on agricultural machinery in some rice farming area

(4) 研修教材一覧

Teaching notes and Reference for Agricultural Machinery Training

Tractor Operator's Course

1. Zana za Kilimo Utayarishaji mashamba
(Agriculture Machinery for Land preparation)
2. Engine ya mapigo marine
3. Trekta la mkono
(Hand tractor)
4. Mashine za kuvunia mpunga na mahindi
(Agricultural machinery harvesting maize and paddy)
- 5 Mashine za kukoboa mpunga
(Agricultural machinery for paddy processing)
6. Nguvu ya engine (Power Train)
7. Sehemu kuu za tractor
(Mechanism of tractor)
8. Sehemu nyingine za tractor
(Other parts of tractor)
9. Zana za kilimo za kupandia , kupalilia na kuzula magonjwa na wadudu
(Agricultural machinery for sowing , weeding and plant protection)
10. Mambo muhimu kwa mkuilima wa mpunga
(The important points for rice growing farmer)
11. Tahadhari katika utumiaji wa zana za kilimo
(Safety operation for agricultural machinery)

Rice Mechanization Course

1. Agricultural machinery for land preparation
2. Agricultural mechanization in rice farming
3. Agricultural mechanization policy and strategy
4. Farm mechanization planning
5. Performance of tractor with rotary tiller
in direct puddling.
6. Workshop management (Business economy)
- 7 Tractor trouble shooting
8. Safety operation of Agricultural Machinery
9. Irrigation systems
10. Farmers' groups in relation to agricultural mechanization
11. Community leadership.

(5) Progress Report from January 1996-March 1997

**KILIMANJARO AGRICULTURAL TRAINING CENTRE (KATC) PROJECT
MOSHI**

P.O. BOX 1241, TEL. 52293/54247

PROGRESS REPORT FROM JANUARY 1996 - MARCH 1997

1. Staff List

Project Management

Mr.R. J. Shayo - Principal (MSc., Agricultural Extension)

Mr.N. Koibuchi - Project Team Leader

Mr.K. Shiratori - Project Co-ordinator

Mr.A.G. Pyuza - Deputy Principal

Mr.E.S. Massawe - Co-ordinator of Studies

Administration Unit

Mr.W.K. Mwanga - Office Supervisor

Ms. G. Mshanga - Catering Officer (Diploma, Home Economics)

Ms. L. Mchaki - Accounts Assistant (NABOCE)

Ms. M. Buberwa - Stores Assistant (NAMMC)

Agricultural Extension and Training Department

Ms. T. K. Mugangala - Head of Department (Postgraduate Diploma, Rural Extension & Teaching)

Mr. J. Oshida - Agricultural Extensionist

Ms. M. Mtika - Instructor (Diploma, Crop Production)

Mr. E.S. Massawe - Instructor (MSc., Agricultural Extension)

Mr. R.J. Shayo - Instructor (MSc., Agricultural Extension)

Rice Cultivation Department

Mr. A. G. Pyuza - Head of Department (MSc., Agricultural Extension)

Mr. M. Tomitaka - Agronomist

Mr. R. K. Lussewa - Instructor (BSc., Agriculture)

Mr. N. Mvukiye - Instructor (BSc., Agriculture)

Ms. J. Omari - Instructor (Diploma, Crop Production)

Water Management Department

Mr. G. Maregesi - Head of Department (MSc., Agricultural Engineering)

Mr. S. Tanaka - Agricultural Engineer (Irrigation)

Mr. K. Nkya - Instructor (BSc., Civil Engineering)

Mr. G. S. Marawitti - Instructor (Diploma, Irrigation)

Agricultural Machinery Department

Mr. N. Nkondora - Head of Department (BSc., Agriculture)

Mr. K. Yamaguchi - Agricultural Engineer (Machinery)

Mr. F. J. Kimaryo - Instructor (Diploma, Agricultural Mechanization)

Mr. E. D. Mziray - Instructor (Diploma, Agricultural Mechanization)

Mr. J. P. Ringo - Post-harvest Technician (Certificate, General Agriculture)

Mr. S. K. Mokoki - Assistant Mechanic (Certificate, Mechanical Technician)

Mr. L. Macha - Driver

Mr. G. Marka - Driver

Production Farm Department

Mr. Z.K. Sarakikya - Farm Manager (Diploma, Agriculture)

Mr. W.Ndoro - Field Officer (Diploma, Crop Production)

Ms. L. Kazoba - Assistant Field Officer (Certificate, General Agriculture)

Mr. V. Njau - Livestock Attendant

2. Staff Requirements

2.1 Administration

Stores Officer - 1

Secretary - 1

Cooks - 7

Watchmen - 10

Cleaners - 4

2.2 Agricultural Extension and Training Department

Librarian - 1

Audio Visual Technician - 1

2.3 Rice Cultivation Department

BSc. in General Agriculture - 1

Diploma in Crop Production - 1

Laboratory Technician - 1

2.4 Agricultural Machinery Department

BSc. in Agricultural Engineering - 1

Tractor Operator - 2

Driver - 2

2.5 Water Management Department

Diploma in Irrigation - 1

3. Staff Movement

The following staff went for further studies during this period.

Name	Course	Period
3.1 Mr.G. Maregesi (Head, W/Management Dept.)	Irrigation and Drainage II, JICA	10/2/1996 - 22/11/1996
3.2 Mr. A.G. Pyuza (Head, Rice Cultivation Dept.)	Rice Cultivation, JICA	25/2/1996 - 28/10/1996
3.3 Mr.E.D. Mziray (Instructor)	Farm Mechanisation II, JICA	25/2/1996 - 16/11/1996
3.4 Ms. T.K. Mugangala (Head, Agric. Extension Dept.)	Agricultural Extension Leader II, JICA	7/5/1996 - 26/7/1996
3.5 Mr. N. Nkondora (Head, Machinery Department)	Development of Agricultural Machinery, JICA	8/12/1996 - 14/2/1997

Name	Course	Period
3.6 R.K. Lusowa (Instructor)	Rice Research, JICA	9/2/1996 - October 1997
3.7 Mr.G.S. Marawitti (Instructor)	Irrigation and Drainage II, JICA	9/2/1996 - November 1997
3.8 Mr.N.E. Mvukiye	Left for SUA to pursue a master's degree	21/9/1996 - 1999

4. New Staff Arrival

The following staff arrived at the centre during the reporting period.

Name & Designation	Arrival Date	Where Arrived From
4.1 Mr.E.S. Massawe (SAT I)	6/6/1996	MATI Mlingano
4.2 Mr. W.K. Mwangi (OS)	1/8/1996	RALDO Kilimanjaro
4.3 Mr. V. Njau	23/8/1996	LRI - West Kilimanjaro

5. Training Activities

Being a training centre, KATC's main activity is teaching field personnel and farmers.

The following short courses were conducted/planned at KATC in 1996/97 fiscal year.

Course and Target Group	No. of Courses	No. of Participants		
		M	F	Total
5.1 Rice Cultivation Courses for Village Extension Officers from Mara, Mwanza, Shinyanga, Tabora, Singida, Dodoma, Kilimanjaro, Tanga and Arusha Regions	2	34	3	37
5.2 Water Management Courses for Irrigation Technicians from Mara, Mwanza, Shinyanga, Kagera, Singida, Kigoma and Dodoma Regions	1 (1)	16	3	19 (20)
5.3 Rice Mechanization Courses for Mechanization Officers from Dar es Salaam, Mtwara, Lindi, Mara, Mwanza, Kagera and Shinyanga Regions	1 (1)	6	-	6 (10)
5.4 Tractor Operators Course for Government and privately employed tractor operators from Coast, Lindi, Zanzibar, Arusha, Mara, Mwanza, Kagera and Shinyanga Regions	1 (1)	8	-	8 (10)
5.5 Key Farmers Courses for key rice growers from important rice growing areas of the following regions; Kilimanjaro, Arusha, Shinyanga, Tabora, Singida, Dodoma, Mara and Mwanza Regions	3 (3)	73	13	86 (96)
Total	8 (6)	137	19	156 (136)

() indicates courses to be conducted upto June 1997.

Problems: (a) Due to poor communication, contacting participants by mail via RALDOs and DALDOs has proved to be a very slow process. This has sometimes forced the centre to make physical contacts which is very expensive.

(b) Government employed tractor operators have become very difficult to find, especially after the re-trenchment exercise. We feel that the project should not limit itself to training only government personnel.

6. Other Activities

6.1 Studies and Surveys

The following studies and surveys were carried out by KATC staff together with the following short term experts from Japan. Reports of the surveys have been submitted.

Studies/survey	Short term expert	Department (s) involved	Period of the study/survey
6.1.1 Survey on Water User's Groups in Selected Rice Farming Areas	Kenji Tamura	Water Management	3/11/1995 - 6/2/1996
6.1.2 Appropriate Agric. Machinery Development	Hai Sakurai	Agricultural Machinery	8/1/21995 - 23/1/1996
6.1.3 Azolla Utilization in Rice Cultivation	Iwao Watanabo	Rice Cultivation	10/5 - 11/6/1996
6.1.4 Rice Diseases	Tsuyoshi Yamamoto	Rice Cultivation	10/5 - 12/11/1996
6.1.5 Agricultural Economy Survey	Ryuichi Yamada	Agric. Extension & Training	20/9 - 20/12/1996
6.1.6 Farmer's Organization Survey	Kenji Tamura	Water Management	20/9 - 20/12/1996
6.1.7 Azolla-duck-rice Culture	Takao Furuno	Rice Cultivation	25/10 - 5/11/1996
6.1.8 Duck Utilization in Rice Cultivation	Masaji Manda	Rice Cultivation	25/10 - 22/11/1996
6.1.9 Schistosomiasis Control Campaign	Masaaki Shimada	KATC/KADP/IPRI	4 - 21/1/1997

6.2 Production Farm Activities

During the reporting period the following activities were carried out by the Production Farm and Rice Cultivation Departments.

Crop produced	Hectarage	Amount harvested	Value in T.shs	Comments
6.2.1 Maize	2.8	8,500 kg	648,000/=	The produce was used for participants food and the surplus was sold to generate revenue for the Self Help Fund
6.2.2 Watermelons	0.4	684 kg	68,400/=	
6.2.3 Cabbages	0.2	764 kg	76,400/=	
6.2.4 Tomatoes	0.2	1,005 kg	100,500/=	
6.2.5 Onions	0.02	171 kg	34,200/=	
6.2.6 Soya beans	0.1	200 kg	30,000/=	
6.2.7 Paddy	0.8	4,542 kg	545,040/=	
Total	4.42		1,502,540/=	

Under the utilization of available resources programme, KATC is making observations on the utilization of water buffaloes in paddy production. On 14th September 1996 the centre acquired five water buffaloes from L.M.U. Mabuki, Mwanza (two in calf heifers, two castrated bulls and one breeding bull) to start a small water buffalo unit. The aim is to study utilization of the animals as a source of draught power.

Achievements: The pair of castrated bull has been under rigorous training and is now able to pull the ox-plow. On 30th January 1997 one of the females calved down giving us a new baby bull.

Still under the utilization of available resources, KATC is making observations on the utilization of ducks in paddy production, drawing from examples of Aigamo utilization in Japan. KATC has established a duck pen where ducks are bred. Only the ducklings are utilized in the paddy fields. As they grow together with the paddy, they feed on young weeds and insects thus protecting the paddy from pest infestation while at the same time supplying organic fertilizer from their droppings. Azolla utilization is another readily available resource which KATC is observing in combination with duck utilization.

7. Equipment Donated by JICA

During the reporting period, the following items of the equipment were received by the project.

Department	Major items
Administration	Motercycle, track, bus
Extension and Training	Carrying cart, camera, computer, printer
Rice Cultivation	Soil pH meter, seed counter, microscope, dryer, electric fence
Water Management	Survey level, theodlight, digital current meter, drawing table, concret mixer
Agricultural Machinery	Tractor, disk plow, disk harrow, workshop tools, soil hardness tester
Total Cost: Jyen 61,683,000	

(6) KATC FINANCIAL REPORT SUMMARY

KATC FINANCIAL REPORT SUMMARY

I. RECURRENT EXPENDITURE FOR 1996/97 FISCAL YEAR

	(Tshs.)
1 Training courses	21,528,000.00
2 Travelling costs	10,749,000.00
3 Daily allowances	11,664,000.00
4 Farm operation costs	5,657,920.00
5 Livestock unit costs	1,026,000.00
6 Motor vehicle running and maintenance	4,308,080.00
7 Tractor and plant running and maintenance	2,273,800.00
8 Upkeep of station	15,260,000.00
GRAND TOTAL	72,466,800.00

2. RECURRENT BUDGET ESTIMATES FOR 1997/98 FISCAL YEAR

	(Tshs.)
1 Training costs	30,800,000.00
2 Travelling costs	19,800,000.00
3 Daily allowances	6,480,000.00
4 Farm production	3,065,600.00
GRAND TOTAL	60,145,600.00

3. DEVELOPMENT BUDGET FOR 1997/98 FISCAL YEAR

	(Tshs.)
1 Donor funds	(J-Yen 17,984,000.00)
	107,904,000.00
2 Local funds	148,000,000.00
GRAND TOTAL	255,904,000.00

(7) Self Help Fund Report (January 1995-February 1997)

KILIMANJARO AGRICULTURAL TRAINING CENTRE
SELF HELP FUND REPORT
(FROM JANUARY 1995 TO FEBRUARY 1997)

Being one of the training institutes under the Ministry of Agriculture and Cooperatives, KATC has been granted the mandate to operate a Self Help Fund Account. However unlike the other institutes KATC could not immediately open such an account for the following reasons;

1. KATC is a new centre handed over to the Ministry by Kilimanjaro Region without any on-going production activities.
2. The farm and other production units at the centre were in need of major rehabilitation before any work could start.
3. The farm which is also used for training purposes is small, having a total of only 9.6 ha. The other source of revenue is the milling plant which proved to be very expensive to operate commercially.
4. Machinery and equipment donated by JICA have been received under strict orders that they must be used only for training purposes and not for income generation.
5. Even after generating a few thousand shillings which we wanted to use to open the account, the Branch Manager, NBC Nelson Mandela Branch informed us that he could accept our request only after he received a directive from NBC Headquarters. This issue is at this moment in the hand of the Chief Accountant of the Ministry of Agriculture and Cooperatives. We hope that the needed directive will soon be forthcoming from the NBC Headquarters.

SOURCES OF REVENUE SO FAR

As KATC embarked on programme planning for training courses it was agreed by the management that food for KATC participants should as much as possible be produced by KATC itself. Donor funds for the project were made available so that production activities could start in the production farm. About 2.4 ha of the farm were rehabilitated and set aside for rice cultivation trials and for practical training purposes. Another 4.8 ha were put under upland crops such as maize, soy beans, water melons, cabbages, tomatoes and onions. After satisfying KATC's need for participants' food, the remaining produce was sold to generate revenue as follows;

A. From Production Farm and Milling Unit:

(I)	Income from sales of maize	Tsh. 1,149,200.00
(ii)	Income from sales of water melons	Tsh. 237,500.00
(iii)	Income from sales of vegetables	Tsh. 238,250.00
(iv)	Income from sales of rice	Tsh. 807,480.00
(v)	<u>Income from paddy processing</u>	<u>Tsh. 198,440.00</u>
	Total	Tsh. 2,630,870.00

B. From Other Sources

(i)	Income from catering services	Tsh. 396,650.00
(ii)	<u>Income from training fee</u>	<u>Tsh. 216,000.00</u>
	Total	Tsh. 612,650.00

Grand Total Tsh. 3,243,520.00

KATC staff and management are thankful to the Project Team Leader for catering to meet the cost of production and channelling all the revenue to the Self Help Fund. This is aimed at building KATC's future capacity for self reliance. We hope this effort will be strengthened so that by the end of the project period KATC will be in a position to stand on its own. For this reason KATC is planning to open a current self help fund account and a fixed deposit account.

(8) Recurrent Expenditure Report for 1996/97 F. Y.

RECURRENT EXPENDITURE REPORT FOR 1996/97 F.Y.

1. TRAINING COURSES (T.sh. 21,528,000/=)

All training courses were conducted as planned but with a slightly smaller number of participants than anticipated. This was mainly due to poor communication. Major cost items for running the course were food and accommodation, transport, external resource persons and teaching materials.

Cost breakdown was as follows:

Name of course	No.	Number of participants	Duration (days)	Average cost per day (T.sh)	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
1.1 Rice Cultivation	2	36	45	4,000.00	-	6,480,000/=	6,480,000/=
1.2 Water Management	2	35	30	4,000.00	-	4,200,000/=	4,200,000/=
1.3 Rice Mechanization	2	16	30	4,000.00	-	1,920,000/=	1,920,000/=
1.4 Tractor Operator's Course	2	18	30	4,000.00	-	2,160,000/=	2,160,000/=
1.5 Key-Farmers Course	5	141	12	4,000.00	-	6,768,000/=	6,768,000/=
Total	13	246				21,528,000/=	21,528,000/=

2. TRAVELLING COSTS (T.sh.10,749,000/=)

Travelling costs include subsistence allowances for staff travel and field trips for participants. Each course included a study tour to five days for the participants

	No.	Average number of days	Average rate (T.sh)	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
2.1 Staff travelling on duty	20	24	10,500		4,944,000/=	4,944,000/=
2.2 Study tours for participants						
- Rice Cultivation Course	36	6	7,500	-	1,620,000/=	1,620,000/=
- Water Management Course	35	4	7,500	-	1,050,000/=	1,050,000/=
- Rice Mechanization Course	16	4	7,500	-	480,000/=	480,000/=
- Tractor Operator's Course	18	4	7,500	-	540,000/=	540,000/=
- Key-Farmers Course	141	2	7,500	-	2,115,000/=	2,115,000/=
Total					10,749,000/=	10,749,000/=

3. DAILY ALLOWANCES (T.sh.11,664,000/=)

Each participant was given a daily allowance of T.shs 2,000/= for the whole duration of the course. Staff members who had to work on weekends and public holidays as well as those who went on field trip lasting a full day were paid T.shs 3,000/= per day as day allowances.

	No. of days	No. of participants/staff	Rate (T.sh)	Local funds (T.sh)	Donor funds (T.sh)	Total (T.shs)
Daily allowance for participants	45	36	2,000/=	-	3,240,000/=	3,240,000/=
	30	69	2,000/=	-	4,140,000/=	4,140,000/=
	12	141	2,000/=	-	3,384,000/=	3,384,000/=
Day allowances for staff	15	20	3,000/=		900,000/=	900,000/=
Total					11,664,000/=	11,664,000/=

4. FARM OPERATION COSTS (T.sh.5,657,920)

A total of T.sh5,937,900/= was used by the KATC Project to produce various crops in the production farm and to carry out rice cultivation trials. Major cost items included farm input costs and labour charges, as shown in the following table.

Cost / item	Quantity	Unit price	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
N. fertilizers	32 bags	11,000/=	-	352,000/=	352,000/=
T.S.P	11 bag	12,000/=	-	132,000/=	132,000/=
Maize seeds	100 kg	115/=	-	115,000/=	115,000/=
Vegetable seeds	-	-	-	15,320/=	15,320/=
Watermelon seeds	300 gm	169,317/=	-	5,100/=	5,100/=
Soya bean seeds	-	-	-	-	-
Insecticides	-	-	-	38,500/=	38,500/=
Labour costs	5,000 man days	1,000/=	-	5,000,000/=	5,000,000/=
Total				5,657,920/=	5,657,920/=

5. LIVESTOCK UNIT COSTS (T.shs.1,026,000/=)

The centre bought from LMU Mabuki five water buffaloes to be tried as a possible source of animal power in paddy cultivation. Of the five animals, two were incalf heifers, two castrated bulls and one breeding bull. One of the females calved down a baby bull in January 30th 1997. The centre also has a number of ducks which are utilized in rice cultivation trials to observe their ability in controlling weeds. The following cost were incurred for the KATC Animal Unit.

Cost / item	Quantity	Unit price	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
Hay	250 bags	800/=	-	200,000/=	200,000/=
Concentrates			-	58,200/=	58,200/=
Duck feed	37 bags	8,400/=	-	310,800/=	310,800/=
Drugs				97,000/=	97,000/=
Labour cost	360 man days	1,000/=	-	360,000/=	360,000/=
Total				1,026,000/=	1,026,000/=

6. MOTOR VEHICLE RUNNING AND MAINTENANCE (T.sh.4,308,080/=)

KATC Project acquired six four wheel drive cars, one truck (3 tones) are pickup, two buses and two motorcycles as part of JICAs equipment donation. The six cars are mainly for use by JICA Experts. The centre incurred costs on moto vehicles running and maintenance as follows:

Cost / item	Quantity	Unit price	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
Diesel, fuel engine oil and minor spare parts				2,628,080/=	2,628,080/=
Labour costs (Project employed drives and mechanics)	4	420,000/= per month		1,680,000/=	1,680,000/=
Total				4,308,080/=	4,308,080/=

7. TRACTOR AND PLANT RUNNING AND MAINTENANCE

Among equipment donated by JICA are two Kubota tractors (from Japan) and one Valmet tractor (bought locally). The centre has also acquired two power tillers. A milling plant which was inherited from KADC was used for post harvest processing of paddy and maize running costs and maintenance were as follows:

Cost / item	Quantity	Unit price	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
Diesel fuel	4,200 litres	364/=		1,528,800/=	1,528,800/=
Petrol	594 litres	456/=		270,864/=	270,864/=
Gearbox oil	15 litres	1,200/=		18,000/=	18,000/=
Engine oil	396 litres	1,100/=		435,600/=	435,600/=
Break fluid	3 litres	2,800/=		8,400/=	8,400/=
Battery acid	12 litres	600/=		7,200/=	7,200/=
Distilled water	12 litres	400/=		4,800/=	4,800/=
Total				2,273,664/=	2,273,664/=

8. UPKEEP OF STATION (T.sh.15,260,000/=)

Under station upkeep the centre incurred costs as follows:

Cost / item	Quantity	Unit price	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
Power supply			-	11,000,000/=	11,000,000/=
Water supply			-	-	-
Security (Project employed watchmen)	1800 man dys	1,167/=	-	2,100,000/=	2,100,000/=
Labour cost (Project employed cleaners)	2160 man days	1,000/=	-	2,160,000/=	2,160,000/=
Total				15,260,000/=	15,260,000/=

(9) Development Budget Estimates for 1997/98 F. Y.

KILIMANJARO AGRICULTURAL TRAINING CENTRE DEVELOPMENT BUDGET ESTIMATES FOR 1997/98 FISCAL YEAR
A. EQUIPMENT REQUEST SUBMITTED TO JICA FOR 1997/98

Department	Major items	Total amount (JY)
Extension and Training	Display boards	843,000
	Generator	
Rice Cultivation	Weighing balance	5,200,000
	Gum boots	
	Microscopes	
Water Management	Level	2,761,000
	Stuff	
	Current meter	
Agricultural Machinery	Tractor	6,430,000
	Spare parts	
General	Textbooks	4,700,000
	Voltage stabilizer	
	Book shelves	
GRAND TOTAL		17,984,000

B. LOCAL DEVELOPMENT BUDGET

Activity	Unit cost	Total Cost (T.sh)	Comments
Construction 5 grade B houses	T.sh.20,000,000/=	100,000,000/=	Out of 25 staff member, 10 are not living in government Staff houses
Rehabilitation 8 grade A houses to be rehabilitated	T.sh.6,000,000/=	48,000,000/=	The requested amount will reduce the problem 50%
Total		148,000,000/=	

(10) Recurrent Budget Estimates for 1997/98 F. Y.

KILIMANJARO TRAINING CENTRE RECURRENT BUDGET ESTIMATES FOR 1997/98 FISCAL YEAR

A. TRAINING COSTS (Total T.sh 30,800,000/=)

Course	No.	Target group	Group size	Duration	Cost/participant/day	Total cost
1. Rice Cultivation	2	Village Extension Officers	20	45 days	Sh.5,000/=	9,000,000/=
2. Water Management	2	Irrigation Technicians	20	30 days	Sh.5,000/=	6,000,000/=
3. Rice Mechanization	1	Mechanization Officers	10	30 days	Sh.5,000/=	1,500,000/=
4. Tractor Operators	1	Tractor Operators	10	30 days	Sh.5,000/=	1,500,000/=
5. Key Farmers	4	Key rice growing farmers with accompanying Extension Officers	32	20 days	Sh.5,000/=	12,800,000/=
TOTAL	10		92			30,800,000/=

B. TRAVELLING COSTS (19,800,000/=)

It includes subsistence allowances for both staff and participants travelling on duty

	No.	No. of days	Average rate/day	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
Local staff travelling on duty	20	30	15,000/=	9,000,000/=		9,000,000/=
Participants going on study tours	40	6	10,000/=	2,400,000/=		2,400,000/=
	210	4	10,000/=	8,400,000/=		8,400,000/=
Total	270			19,800,000/=		19,800,000/=

C. DAILY ALLOWANCES (T.sh 6,480,000/=)

The centre plans to pay T.sh 2,000/= per day to each participant who is a government employee for the period he or she will be attending a KATC course. Due to the nature of KATCs activities, some staff members are obliged to work on week ends and on public holidays. The centre plans to pay T.sh.3,000/= per day to staff, being day allowances for working on week ends and public holidays.

	No. of days	No. of participants/staff	Rate/day	Local funds (T.sh)	Donor funds (T.sh)	Total (T.sh)
Daily allowance for participants	45	40	2,000/=	3,600,000/=	-	3,600,000/=
	30	40	2,000/=	2,400,000/=	-	2,400,000/=
Daily allowance for staff	8	20	3,000/=	480,000/=	-	480,000/=
Total				6,480,000/=		6,480,000/=

D. PRODUCTION FARM BUDGET FOR 1997/98 FISCAL YEAR AND REVENUE ESTIMATES

The centre will spend some T.sh3,065,600/= to produce various crops in the production/trial farm as follows:

Activity	Qty	Unit Price	Cost	Estimated yield	Estimated output	Estimated value of crop
(a) Maize production (1.6ha)						
Seed	60 kg	1,200/=	649,000/=	4 ton/ha	6.4 ton	512,000/=
Fertilizer	10 bags	12,000/= per bag	72,000/=			
Insecticides	5 litres	15,800/=	79,000/=			
Labour costs	378 man days	1,000/=	378,000/=			
(b) Vegetables (0.4 ha)			408,000/=			650,000/=
Seeds	600 gm	30/=	18,000/=			
Fertilizers	100 kg	200/=	20,000/=			
Insecticides	1 litre	10,000/=	10,000/=			
Labour costs	360 man days	1,000/=	360,000/=			
(c) Watermelons (0.4 ha)			313,000/=	5 ton/ha	2 ton	400,000/=
Seeds	667 gm	30/=	20,000/=			
Fertilizers	125 kg	200/=	25,000/=			
Insecticides	2.8 liters	10,000/=	28,000/=			
Labour costs	240 man days	1,000/=	240,000/=			
(d) Soya bean prod.(0.4 ha)				1.25 ton/ha	500 kg	250,000/=
Insecticides						
Labour costs	3 lab. x 21 x 1000/=	1,000/=	189,000/=			

Activity	Qty	Unit Price	Cost	Estimated yield	Estimated output	Estimated value of crop
(e) Sunflower production (0.4 ha)						
Sunflower seeds	4 kg	4,000/=	176,000/=	1.5 ton/ha	600 kg seed	180,000/=
Fertilizers			16,000/=			
Insecticides						
Labour cost	160 man days	1,000/=	160,000/=			
(f) Fodder production (1.2 ha)						
Luccern seeds	12 kg	5,000/=	84,000/=	300 bales/ha	360 bales	288,000/=
Fertilizers	100 kg	240/=	6,000/=			
(g) Livestock production						
Hay	100 bales	700/=	70,000/=			500,000/=
Concentrates	20 bags	4,000/=	80,000/=			
Drugs	-	-	89,200/=			
Duck feed	3650 bags	176/=	642,400/=			
Labour cost	365 man days	1,000/=	360,000/=			
Total			3,065,600/=			2,780,000/=

(11) Annual Plan for 1997/98

Kilimanjaro Agricultural Training Centre
ANNUAL PLAN FOR 1997/1998

Activities	1997							1998					
	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	
1. ENHANCEMENT OF TECHNICAL CAPABILITIES STAFF													
1.1 On the Job Training (all departments)													
1.2 Counterpart Training in Japan													
1.2.1 Agricultural Extension													
1.2.2 Rice Cultivation													
1.2.3 Water Management													
1.3 In Country Training													
1.3.1 Training of Trainers Course - (all departments)													
1.3.2 Agricultural Machinery													
1.3.3 Masters Degree Programme at S.U.A. (1 trainer)													
1.3.4 Diploma in Crop Production at MARTI Uyole (1 trainer)													
2. IMPROVEMENT OF TEACHING METHODS													
2.1 Improvement of Lesson Plans													
2.1.1 Agricultural Extension - Key-Farmer's Courses													
2.1.2 Rice Cultivation Courses													
2.1.3 Water Management Courses													
2.1.4 Rice Mechanization Courses													
2.1.5 Tractor Operator's Courses													
2.2 Review of Training Curriculum													
2.2.1 Agricultural Extension - Key Farmers Courses													
2.2.2 Rice Cultivation Courses													
2.2.3 Water Management Courses													
2.2.4 Rice Mechanization Courses													
2.2.5 Tractor Operator's Courses													

Activities	1997						1998					
	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.
3. IMPROVEMENT OF TRAINING MATERIALS												
3.1 Compiling, Editing and Reviewing Teaching Notes												
3.1.1 Key Farmer's Courses												
3.1.2 Rice Cultivation Courses												
3.1.3 Water Management Courses												
3.1.4 Rice Mechanization Courses												
3.1.5 Tractor Operators Courses												
3.2. Developing and Reviewing Audio-visual Aid for:												
3.2.1 Extension Topics												
3.2.2 Rice Cultivation Topics												
3.2.3 Water Management Topics												
3.2.4 Agricultural Machinery Topics												
3.3 Data Collection and Analysis												
3.3.1 Verification Trials												
3.3.1.1 Rice Cultivation												
3.3.1.2 Development of Appropriate Agricultural Machinery												
3.3.2 Field Surveys												
3.3.2.1 Soil Survey												
3.3.2.2 Survey of Improved Traditional Irrigation & Water Users												
3.3.2.3 Schistosomiasis Survey												
3.3.2.4 Farm Economic Survey												
3.3.2.5 Work Load vs Gender Analysis in Rice Farming												
3.3.2.6 Follow-up of Ex-trainees												

Activities	1997						1998					
	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.
4. TRAINING OF FIELD PERSONNEL AND KEY FARMERS												
4.1 Fifth Rice Cultivation Course (45 days) 20 participants from Zanzibar, Lindi and Mtwara												
4.2 Sixth Rice Cultivation Course (45 days) 20 participants from Iringa, Ruvuma and Mbeya Regions												
4.3 Fifth Water Management Course (30 days) 20 participants from Zanzibar, Lindi, Mtwara, Ruvuma & Dar es Salaam												
4.4 Sixth Water Management Course (30 days) 20 participants from Iringa, Mbeya and Rukwa Regions												
4.5 Fourth Rice Mechanization Course (30 days) 10 participants from Morogoro, Iringa, Mbeya and Rukwa Region												
4.6 Fourth Tractor Operators Course (30 days) 10 partic. from Morogoro, Iringa, Ruvuma, Mbeya and Rukwa												
4.7 Tenth Key Farmers Course (19 days) 32 participants from Zanzibar												
4.8 Eleventh Key Farmers Course (19 days) 32 participants from Lindi and Mtwara Region												
4.9 Twelfth Key Farmers Course (20 days) 32 participants from Mbeya Region												
4.10 Thirteenth Key Farmers Course (20 days) 32 participants from Iringa and Ruvuma Regions												
5. SPECIAL COURSES AND SEMINARS												
5.1 Rice Cultivation Course and Individual Training for participants from outside Tanzania (from Kenya, Malawi Zambia)+A105												
5.2 First seminar on Azolla Utilization in Rice Cultivation (10 days) for 25 partic. from Kilimanjaro, Tanga, Moro, Coast												
5.3 Second seminar on Azolla Util. in Rice Cultivation (10 days)												
5.4 Seminar on Rice Cultivation Survey Methods (10 days) for 25 days researchers trainers sub. matter specialist												
5.5 Workshop on Rice Mechanization in Tanzania (3 days) for 15 Mech. Officers, research, concern, people												

Activities	1997						1998					
	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.
6. OTHER ACTIVITIES												
6.1 Production Farm												
6.1.1 Maize Production (1.6 ha)												
6.1.2 Vegetable Production (0.04 ha)												
6.1.3 Soya Beans Production (0.4 ha)												
6.1.4 Water Melon Production (0.4 ha)												
6.1.5 Sunflower Production (0.4 ha)												
6.1.6 Fodder Production (1.2 ha)												
6.1.7 Water Buffalo Rearing												
6.1.8 Duck Rearing												
6.1.9 Goats Rearing												
6.2 Publication of Rice and People in Tanzania (KATC Newsletter)												

KATC Newsletter

Rice and People in Tanzania

Volume 2, Number 3
January, 1997

Kilimanjaro Agricultural Training Centre
(KATC)
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Irrigated Rice Cultivation -A Public Health Hazard?-

It has been established that prevalence of water borne diseases such as malaria and schistosomiasis is rapidly increasing in Lower Moshi since the establishment of the Lower Moshi Irrigation Project in mid-1980s. A survey carried out in 1991 by Dr. F.J. Nguma - a researcher working at the Tropical Pesticide Research Institute (TPRI), Arusha-revealed that the prevalence rate of intestinal schistosomiasis in the four villages of Lower Moshi Irrigation Project was over 53%, and feared to be increasing. If it is not quickly checked, the more population could be infested within the next few years.

KATC, in collaboration with KADP and CHAWAMPU (Chama cha Wakulima wa Mpunga) is currently organizing a campaign against schistosomiasis in Lower Moshi to raise the people's awareness about the disease and what should be done to protect themselves. Under this programme, a JICA short-term expert Dr. M. Shimada was recently dispatched to study the situation for two weeks. He managed to conduct

stool and urine examinations for a randomly picked sample of 100 Mabogini primary school pupils and to assess the infestation rate of the snail which transmits *Schistosoma monsoni* to cause intestinal schistosomiasis in human beings. He confirmed that the infestation rate of both the school pupils and the vector snails in Mabogini area was relatively high.

Two seminars, one for village leaders and another for regional and district leaders, were organized to inform the leadership about the situation and to solicit their support during the campaign. Members agreed that human being was in fact the chief transmitter of schistosomiasis through his/her own carelessness. Eggs of *Schistosoma* sp from an infected person are passed out through stool or urine into fresh water. There they hatch into tiny miracidia which enter the body of a specific snail to multiply and to be released in the form of cercaria back into the water. The cercaria penetrate the skin of human beings as they come into contact with the water. That is how the disease spreads from one person to another. But the whole process starts by man releasing the disease organism's eggs into fresh water through stool or urine. If people would always use latrines the life cycle of the disease organism would be permanently broken.

Hand in hand with changing people's behaviour, snails which are the intermediate hosts should also be controlled through keeping water courses clean, and sometimes applying chemicals to kill them. However, such chemicals are known to be very expensive and could be harmful to the environment. Therefore, changing people's behaviour remains the key measure in controlling schistosomiasis. Even though there exists ample evidence to show that increasing irrigation greatly increases schistosomiasis transmission potential, it is in fact not the irrigation but the behaviour of people which is responsible for increasing schistosomiasis transmission potential.

Irrigation project planners should take it as a matter of responsibility to include enough public toilets in the project area to ensure that no human stool or urine comes in contact with the water. Treated domestic water supply should also be available to reduce people's contacts with river or canal water. Let us all practise "Safe Irrigation".

R. Shayo (Principal, KATC)

Water Management: a Vital Aspect in Irrigation Schemes

Maregesi, G. (Water Management Department)

Improvement of irrigation water management in both traditional and modern irrigation has been recently seen by developing countries as a means of saving water for irrigating more land. This approach is supposed to be of much more merit than the approach of extensive irrigation development including use of huge dams, from the view point of investment and construction period.

Although more and more land could be developed for irrigation, still it may not be so profitable unless the terminal irrigation systems are properly operated and managed. That is why the improvement of water management within the existing irrigation systems should be given priority in various ways/approaches for promoting agriculture in developing countries.

The current situation in most of irrigation projects/schemes, for example in our country (Tanzania) is that more emphasis is placed on crop husbandry only. Although improvement of irrigation water management has been advocated through a number of government policies, yet it has not been accorded the momentum it deserves. From a survey done by water management staff of KATC from December 1995 to January 1996 for four irrigation schemes (Lower Moshi, Kileo/Kivulini, Bahi and Kwemazandu), it was revealed that water management was still a big problem and requires serious action for the benefit of the irrigators in these schemes. In some of the projects, it was not clearly known who was responsible for what.

This lack of clear responsibility leaves a big gap in decision making. Some farmers felt in some of the schemes that it was the responsibility of the government to operate and maintain the main irrigation system and thus they were only responsible for their fields. Moreover, most farmers lacked the knowledge and skills in water management thus hindering them to participate actively in the improvement of water management in their irrigation schemes. Very few farmers who were interviewed responded that they had attended seminars/short training in water management while most of them claimed that they had never attended any such seminars.

It is therefore clear that many farmers in many irrigation schemes in Tanzania still have not had a chance to attend seminars/training in water management. The improvement of water management especially in Tanzania rests on the beneficiaries (the farmers) who are now entrusted with the operation and maintenance of the irrigation schemes. As such to make this endeavour a reality, more seminars/training should be directed to the farmers who after completion will be involved actively in improvement of water management techniques in their schemes in collaboration with the irrigation personnel.

*Mr. Tsuyoshi Yamamoto (rice plant pathologist)
worked for KATC as a short-term expert.
The following article is a part of his report.*

A Brief Report on Rice Diseases Survey in Tanzania

Tsuyoshi Yamamoto visited Kilimanjaro Agricultural Training Center (KATC), Tanzania, twice as JICA's short-term expert on rice diseases, and he went on the survey trips, during March to June in 1995 and May to September in 1996.

He observed 12 fungal diseases, 2 bacterial diseases and 1 viral disease. Further, he observed some of insect pests and damages caused on plants. These observation results are shown in the table.

Fungal Diseases

1. Blast of rice was observed in many places throughout Tanzania. In Kilimanjaro region, although the outbreak of blast of rice was not confirmed, serious incidence of blast in finger-millet was partially observed in Lower Moshi. This fact indicates that the environmental conditions in Kilimanjaro region are also favourable to outbreak of blast of rice. Blast on wild-rice and grasses were also observed in many places.
2. Brown leaf spot is distributed quite commonly and widely all over the country.
3. Narrow brown leaf spot disease is also widely distributed. Fairly serious incidence was observed in Korogwe, Tanga Region. The panicles attacked by the pathogen were observed frequently in the area.
4. Although leaf scald was not found in 1995, the disease was commonly observed in regions such as

Morogoro, Ruyuma, Lindi and Mtwara and Zanzibar in 1996.

5. Sheath blight was widely distributed but not serious.

6. Sheath rot is found everywhere throughout Tanzania. Yamamoto investigated 30 samples of this disease obtained in KATC rice farm, and he found that in all samples the leaf sheath next to the flag-leaf was attacked by some insects. According to his experience, cultivars of plant type with incomplete exerting panicles are susceptible to this disease.

7. Stem rot was also widely distributed in irrigated rice fields.

8. False smut was not so frequently observed.

9. Stackburn disease was observed in some places. Although this is a minor disease, the grain quality may be reduced as the pathogen also attacks the kernels.

10. White leaf streak, was observed in some places.

11. Seedling blight caused by *Fusarium* species was observed in KATC rice farm. It is characterised by pink colour of causal fungus.

12. Kernel discolouration was observed quite frequently, and from these discoloured kernels, spores of *Alternaria* species, *Helminthosporium* species, *Curvularia* species, *Cercospora* species and *Fusarium* species were detected.

Bacterial Diseases

13. Bacterial leaf streak was frequently observed in Tanga and Coast regions.

14. Bacterial palea browning was observed in Shinyanga region though damage was not severe.

Virus Disease

15. Rice Yellow Mottle Virus (RYMV) disease was observed in all regions surveyed. The symptoms of yellowing, mottling, stunting, yellow stripe, malformation of leaves and panicles were observed. The severe incidences were observed in Mara and Tanga regions.

Others

16. Wrinkled stunt, a genetic disease, was observed in one field in Mara region.

Insects.

17. Stalk-eyed fly was quite commonly observed in irrigated rice fields.

18. African gall midge was observed in Mbeya region.

19. In Tanzania, he observed one plant hopper and three leafhoppers on rice. A rice plant hopper *Nisia nervosa* was observed in some places. A rice leafhopper *Cofana unimaculata* was

observed in some places. A rice leafhopper

Cofana spectra was observed in some places.

A rice leafhopper *Cofana spectra* was commonly observed in rice fields.

A rice leaf hopper *Nephotettix modulatus*

was observed in Mara region. In KATC rice farm, about 30 different kinds of insects, including *Nisia nervosa*, *Cofana unimaculata*, *Cofana spectra*, and stalk-eyed fly were observed.

Plants

20 *Striga*, a parasitic flowering plant, was observed in Mbeya and Morogoro regions though the damage was not so significant.

21. Quite severe damage by azolla was observed in the rice fields where azolla had been carelessly introduced in the area with incomplete irrigation/drainage system in Zanzibar.

Table. Rice diseases and insect pests observed in Tanzania, during the survey trips, March to June in 1995 and May to September in 1996. (F. YAMAMOTO 1996)

	Observation Frequency	Severity
Fungal Diseases		
Blast	+++	+ / +++++
Brown spot	++++	+ / +++
Narrow brown leaf spot	++++	+ / +++
Leaf scald	++	+ / ++
Sheath blight	++	+
Sheath rot	++++	+ / +++
Stem rot	+++	+ / ++
False smut	+	+
Stackburn disease	++	+
White leaf streak	+	+
Fusarium seedling blight	+	+++
Kernel discolouration	+++	+ / ++
Bacterial Diseases		
Bacterial leaf streak	++	+ / ++
Bacterial palea browning	+	+
Virus Disease		
Rice yellow mottle virus	++	+ / +++++
Others		
Wrinkled stunt	+	++
Insect		
Stalk-eyed fly	+++	+ / +++
African gall midge	+	++
<i>Nisia nervosa</i>	++	?
<i>Cofana unimaculata</i>	++	?
<i>Nephotettix modulatus</i>	+	?
Plants		
<i>Striga</i>	+	?
<i>Azolla</i>	+	++++

[Note]

1. Disease severity was assessed on the basis of observer's personal impression and his experiences.

2. Quite severe damage by azolla was observed in the rice fields where azolla had been carelessly introduced in the area with incomplete irrigation/drainage system in Zanzibar.

3. From discoloured kernels, *Alternaria* sp., *Helminthosporium* sp., *Curvularia* sp., *Cercospora* sp. and *Fusarium* sp. were detected.

Demonstration Plot as an Extension Teaching Method

M. Mtika, E.S. Massawe, T.K. Mugangala and Jiro Oshida

Agricultural Extension and Training Department

1. Introduction

Management of demonstration plot is one of the subjects for rice cultivation and key-farmer's courses. The objective of teaching such a subject is to enable participants establish good and effective demonstration plots in their working areas. Setting of demonstration plot especially in one of farmers' fields can accelerate the transfer of cultivation techniques to other farmers, both nearby and passer-by farmers, because "Seeing is believing". Demonstration becomes more effective when extension worker involves farmers to participate in doing all skills applied because learning by doing becomes even more fruitful and unforgettable.

2. Role of Demonstration Plot

Demonstration plot is a technical transfer field. Therefore every activity done in demonstration plot, farmers are supposed to co-operate with demonstrator. The main purpose of demonstration plot is to introduce new techniques or improved techniques e.g. new variety, straight row transplanting and use of fertilizers. Other uses include providing intensive guidance on basic techniques. A successful demonstration plot always attracts farmers in the nearby villages, showing interest in all activities being demonstrated, thus becoming more familiar with the demonstration. Since farmers engaged in that exercise are their neighbours, adoption of techniques spread even beyond the targeted group. Furthermore, improved or new technique is made clear in farmers' own fields and demonstration plot is a useful method to introduce in a concrete and practical form for a newly developed technique or problem - solving way. Villagers or farmers are able to acquire the techniques easily. The cost of inputs and other production expenses can be realized/obtained by farmers.

3. Planning a Demonstration Plot

An elaborate plan is required before setting up a demonstration plan, this should indicate:

3.1 Demonstration content, this should be comparable with existing practices, e.g. with or without fertilizer application, with or without pre-germination treatment before sowing.

3.2 Jot down all factors to be emphasized.

3.3 Collect necessary materials and literature.

3.4 Needed funds - if funds are available, install a sign board in order to draw attention of passer-by and neighbour farmers who can read and get the message in summary form. The sign board should have all necessary impact points such as spacing, number of seedlings per hill, date of sowing, fertilizer application rates, types and variety grown.

3.5 Location of the plot should be near farmers' houses, roads, meeting places, and water sources. The soil condition should not be different from fields of target group.

4. Management of a Demonstration Plot

After conducting a survey, using questionnaire or any other methods to identify the problem to be solved by using demonstration plot, the following procedure is used. The skill to be adopted is demonstrated by the demonstrator step by step while farmers observe. Then the farmers will practise the same skill while the demonstrator observes and corrects them, from seed selection, nursery preparation, sowing, transplanting, fertilizers and chemical applications to harvesting. Farmers who participated in demonstration plot will practise the same in their own fields and for those who could not attend the demonstration will get knowledge from their neighbours. Through observation, also farmers can acquire some skills such as nursery preparation, line transplanting and fertilizer application among others, because the plot is unique within the farmers' fields for it is managed well. Farmers always like to adopt good techniques therefore demo-plot should be well managed to give good results. Also they should make sure that the impact points on rice cultivation techniques are emphasized. The demonstrator is supposed to be an advanced farmer, group leader or experienced farmer. Such a farmer should be cooperative.

*Report from the training courses
Mr. Oscar D. Busanji, has been working as Extension Officer
of Kasamwa Division, in Geita District.
This paper was presented at the third rice cultivation course
(27th August-10th October 1996) at KATC.*

**Rice Farming and Agricultural
Extension in Kasamwa Division,
Geita District, Mwanza Region
Oscar D. Busanji, P.O. Box 83 Geita**

1. General Description of the Area

Location: Kasamwa division is in Geita district, Mwanza region. The division is located about 15 km from Geita town along Geita Sengerema road.

Altitude: The division lies about 1300 m above the sea level with temperatures ranging from 17 °C to 29 °C.

Topography: The division is covered by a wide flat land. There is a small mountain to the south east near a forest reserve on north west of the division.

Climate: Kasamwa division receives moderate rainfall during the cropping season. The rains start in mid-September and last up to May. In September, there is low amount of rainfall. Usually, more rains are received from October to April and are more reliable for sowing of various crops. The division receives rainfall ranging between 1,000 mm to 1,200 mm per year. There is a dry season from early June to early September.

Soils: Kasamwa division consists of a wide range of soils such as loamy sand, clay, alluvial and silt clay.

Water sources: The division has got two water sources (1) Rainfall and (2) Temporary rivers and streams.

Total area: The division has got about 22,562 ha. The area consists of arable land, residential area, forest, mountains and grazing land.

Population: The division is estimated to have 57,687 people according to 1988 census.

Income sources: The people residing in the division depend much on agriculture and livestock keeping. Other sources of income are lumbering activities and carpentry. In addition other people are employed in ginnery.

2. Agricultural Production

There are various crops grown in the division such as maize, cassava, paddy, sorghum, cotton, sweet

potatoes and legumes. Cotton is a major cash crop. The area under cultivation for various crops is as follows:

Crops	Area (ha)
Maize	6,690
Paddy	2,338
Cotton	6,258
Legumes	3,491
Cassava	4,688
Sorghum	3,179
Sweet potatoes	2,185

The following are the major inputs used by the farmers in the division:

Kind of inputs	
Fertilizers	SA, CAN and urea
Implement	Hired tractor
Hand tools	Hoe, sickle, knife, panga, axe
Fungicide	Dithane-M45, blue copper
Herbicides	2.4-D amine (1.5 l/ha)
Seeds	Kilima, TMV-1 (maize) Local varieties (rice)
Insecticide	Sumithion, Sumicion (1 l/acre) Karate, Actellic super

SA = Sulphate of Ammonia

CAN = Calcium Ammonium Nitrate

The average production level for each crop in the division is as indicated below:

Crops	Production/ha	Crops	Production/ha
Paddy	25-30 bags	Cassava	10-15 bags
Maize	15-20 bags	Sorghum	7-10 bags
Cotton	250-600 kg	Sweet potatoes	10-15 bags
Legumes	6-10 bags		

Livestock: The division has got a variety of livestock such as cattle, goats, sheep, donkeys and poultry. The animals population is as follows:

Kind of animal	Number
Cattle	57,958
Goats	23,469
Sheep	8,353
Donkeys	58
Poultry	112,246

Management: All the animals except poultry are kept by individual farmers, who are responsible for grazing them. The farmers carry out routine vaccinations against diseases. Milsan is more effective drug against worms and flukes. They dip their animals against ticks.

Mixed farming: Farmers involved in agriculture and livestock keeping are using animal manure to fertilize their fields for increased crop production.

Farm mechanization: In the division there are four tractors, but only one hired tractor is for tilling and harrowing. The rest pull trailers. Animals are used for ploughing particularly in the paddy areas and pulling the ox-carts. Farmers use various tools such as hoes, knives, axes, pangas and sickles.

3. Rice Farming Practices

Brief history: Before 1990, the crop was cultivated on small scale, and all the activities were done by hands. A household owned an average area of 0.2 - 0.5 ha, of paddy field: the product was not even marketable. In the beginning of 1990s, rice became one of the major crops in the division. The farmers started to expand rice cultivated area and the planted area increased from 0.5 to 1.5 ha per household. The importance of the crop caused a rise in price in the market. The farmers earned more money by selling the crop. The farmers realized the importance of using new technology in paddy production such as hired tractors, animal power and accepted the extension services given by the extension staff.

Total rice farming area: The total area for rice farming is 6,690 ha with an average of 1.5 ha per household. The average paddy plot size ranges between 0.5-0.8 ha.

The land tenure system: The land is owned by the farmers after being allocated by the village government. Some farmers hire paddy plots.

Irrigation systems: The farmers depend much on rains and seasonal rivers as the main sources of water for paddy production. Some paddy plots lie on gentle slope near the rivers and so some farmers construct bunds to restrict water flow.

Land preparation: Most of the farmers prepare their land during the first rains (from early October to December). About 75% of paddy area is ploughed by animals, 5% by tractors and the rest by human labour.

Planting season: Paddy areas are planted during the period from November to early February.

Varieties: The most common varieties grown in the division are: Mwinula, Supa, Rangimbili, Sengasenga, Kahogo, Mwiza, and Pishori (Gamti).

Planting methods: There are two common planting methods.

(1) Broadcasting: direct seed sowing in the field at the spacing of 15 cm x 15 cm after thinning.

(2) Transplanting method: seedlings are transplanted in the main field at the spacing of 20 cm x 20 cm or 15 cm x 15 cm.

Seed rate: About 10 -15 kg per acre.

Seedling age: Seedlings are transplanted one month after sowing.

Spacing of transplanting: Most farmers adopt 15 cm x 15 cm.

Weed control: Hand weeding is commonly practised.

Fertilizers: The common fertilizers are SA and CAN, which are applied at the rate of 25 kg/acre and 15 - 20 kg/acre respectively.

Irrigation practices: The farmers irrigate their paddy areas using river water. Some farmers practise plot to plot irrigation.

Harvesting: Farmers use knives or sickles to harvest the paddy on canvas or mats, then threshed. Then winnowing follows using blowing wind. After threshing and winnowing the paddy is stored in gunny bags, in "Ruli" and "Vihenge".

Operations done by different labour force:

Operations	Family	Exchange	Hired
(i) Ploughing	✓	✓	✓
(ii) Transplanting	✓		✓
(iii) Weeding	✓		✓
(iv) Harvesting	✓	✓	✓
(v) Storage	✓		

4. Economy of Rice Farming

Two farmers were interviewed on rice economy. The first farmer was selected from the farmers who were not willing to adopt innovation in paddy production from the extension staff. The second farmer, was selected from a group of farmers who received advice and technology in paddy production and accepted the innovation given by the extension staff. She improved the living standard through the sale of paddy produced.

	First farmer	Second farmer
Planting time	December	December
Planting area	1 acre	1 acre
Variety grown	Supa	Supa
Sowing method	Broadcasting at 15 cm x 15 cm	Dibbling/transplanting at 15 cm x 15 cm

The price of paddy and white rice increases gradually under the free market system. In 1995, the fluctuation of paddy price for one gunny bag was as follows:

May to June	6,300/=
June to July	6,600/=

July to August	6,900/=
August to September	7,200/=
September to October	7,500/=
October to November	7,800/=
November to December	8,100/=
December to January	8,400/=
January to February	8,700/=
February to March	9,000/=

A gunny bag of paddy fetched T.shs.9,000/= in March in the market.

Inputs	Farmer I	Farmer II
Operations/inputs		
Ploughing	6,000/=	6,000/=
Harrowing	5,000/=	5,000/=
Materials		
Seedrate	2 tins	15kg
Fertilizer	-	7,500/=
Labour		
Sowing	12,000/=	8,000/=
Weeding	7,500/=	6,500/=
Harvesting	13,500/=	-
Gunny bags	5,000/=	9,000/=
Total input cost	49,000/=	42,000/=
Output		
Bags of paddy harvested	10	18
Bags of paddy sold	6	12
Bags of paddy for food	4	6
Paddy price per bag	9,000/=	9,000/=
Total value	90,000/=	162,000/=
Reduce input cost	49,000/=	42,000/=
Net profit	41,000/=	120,000/=
Value reserved	36,000/=	54,000/=
Net income	5,000/=	66,000/=

5. Problems in Rice Farming

Resources: Insufficient areas suitable for rice production and shortage of rainfall.

Input materials: Most of the farmers are not aware of the use of fertilizers such as SA, CAN and urea.

The cost of tractor hiring increases depending on season. Most of the farmers are using simple tools such as hand hoes, pangas and axes.

Marketing: Under the free market, price fluctuation is common, this affects the paddy and white rice producers.

Technology: A small number of animals (bulls) are trained for ploughing in paddy areas. There is poor selection and grading of seeds.

6. Agricultural Extension Services

Agricultural extension services are provided through DEO, DIVEO, VEO, farmer groups and individual farmers. The system facilitates the communication from the district level to village

level. VEO sends the message to the farmers after receiving it from the district. He takes the feedback (problems) from the farmers to the district.

People's organization: There are many primary societies in the division working under Nyanza Co-operative Union (NCU). NCU deals with buying of cotton through these societies, ginning of cotton and provides seeds to the farmers.

Training Courses to Be Held at KATC from March to June 1997

Tractor Operator's Course

Duration: 27th March - 25th April 1997

Number of participants: 10

Regions: Mwanza, Mara, Shinyanga and Kagera.

Key Farmer's Course

Duration: 17th March - 28th March 1997

Number of participants: 32

Region: Arusha

Key Farmer's Course

Duration: 14th April - 25th April 1997

Number of participants: 32

Regions: Singida and Dodoma

Key Farmer's Course

Duration: 16th June - 27th June 1997

Number of participants: 32

Region: Tabora

Rice Mechanization Course

Duration: 13th May - 11 June 1997

Number of participants: 10

Regions: Mwanza, Mara, Shinyanga and Kagera

Water Management Course

Duration: 6th May - 4th June 1997

Number of participants: 20

Regions: Tabora, Singida, Dodoma and Kigoma.

Participants, except those of the key - farmer's course, are nominated by the concerned Regional Agricultural and Livestock Development Officers (few participants are nominated by the concerned Principals of MATIs and LITIs). Participants of the key-farmer's course are nominated by the agricultural field officers who attend the rice cultivation courses (3 key - farmers per field officer).

(13) Matters Arising from The Minutes of the Second Joint Advisory Committee Meeting

**MATTERS ARISING FROM THE MINUTES OF THE
SECOND JOINT ADVISORY COMMITTEE MEETING**

Recommendations of the Second Joint Advisory Committee Meeting were implemented as follows:

Item 6.4 A simpler style was adopted in writing these minutes.

Item 7.13 A graduate was transferred from MATI Mlingano to KATC to join the Agricultural Extension and Training Department.

Item 7.2.5 The following list of staff requirements was submitted for consideration by the Ministry.

KATC STAFF DISPOSITION

Department	Category of staff	Requirement	Present	Shortfall
Administration	M.Sc., in General Agriculture or Agricultural Extension	1	1	0
	Office Supervisor	1	1	0
	Accounts Assistant	1	1	0
	Stores Officer	2	1	1
	Catering Officer	1	1	0
	Cooks	7	0	7
	Secretaries	1	0	1
	Cleaners	4	0	4
	Watchmen	10	0	10
Ag.Extension & Training	M.Sc./B.Sc., in Agricultural Extension	1	1	0
	Diploma in Agricultural Education/Extension	1	1	0
	Diploma in Crop Production	1	1	0
	Audio Visual Technician	1	0	1
	Librarian	1	0	1
	Library Assistant	1	0	1
Rice Cultivation	M.Sc., in Agriculture	1	1	0
	B.Sc., in Agriculture	3	2	1
	Diploma in Crop Production	2	1	1
	Laboratory Technician	1	0	1
Water Management	M.Sc., Irrigation Engineering	1	1	0
	B.Sc., Civil Engineering	1	1	0
	Diploma in Irrigation	2	1	1
Agric.Machinery	B.Sc., Agricultural Engineering	1	0	1
	B.Sc., Agriculture(Mechanization)	1	1	0
	Diploma in Agricultural Mechanization	2	2	0
	Post harvest Technician	1	1	0
	Mechanic	1	1	0
	Tractor Operator	2	0	2
	Drivers	4	2	2
Production Farm	Diploma in Farm Management	1	1	0
	Diploma in Crop Production	1	1	0
	Certificate in Agriculture	1	1	0
	Total	60	25	35

Item 7.5.3 KATC has been trying to advertize its activities to its possible clients through it quarterly newsletter and the KATC calendar for 1997. Contacts have also been made with Agricultural Extension Officials who have visited the centre to look at the facilities. So far only ACT - Mto wa Mbu (an NGO), Mkindo Irrigation Scheme and MATI Mlingano have requested to send participants to KATC courses and shown willingness to meet the cost.

Item 8.2. All staff member presented reports on their study trips to the general staff meeting for discussion. In this way all staff members benefited from the reports.

Item 8.4 Implemented.

Item 8.6 Every KATC ex-participant has a file at KATC where follow-up contacts are recorded.

Item 8.7 JICA agrees very well that staff motivation is an important factor in the success of any project. Since the Governments lack of capacity to meet its obligations Vs the KATC Project is clearly understood, the KATC Project Team Leader has been approached to consider the following motivational factors for project counterparts:

- (i) Travel allowance topping up
- (ii) Health care services
- (iii) Awards to outstanding performers
- (iv) Paying a lunch allowance
- (v) Salary topping up
- (vi) Paying responsibility allowance to Principal and Heads of Departments
- (vii) Providing soft loans to staff
- (viii) Allowing staff to use cars and machinery for personal activities at cost price.

Items (i) - (v) have received favourable consideration.



JICA