AFR TZA/A 302/83

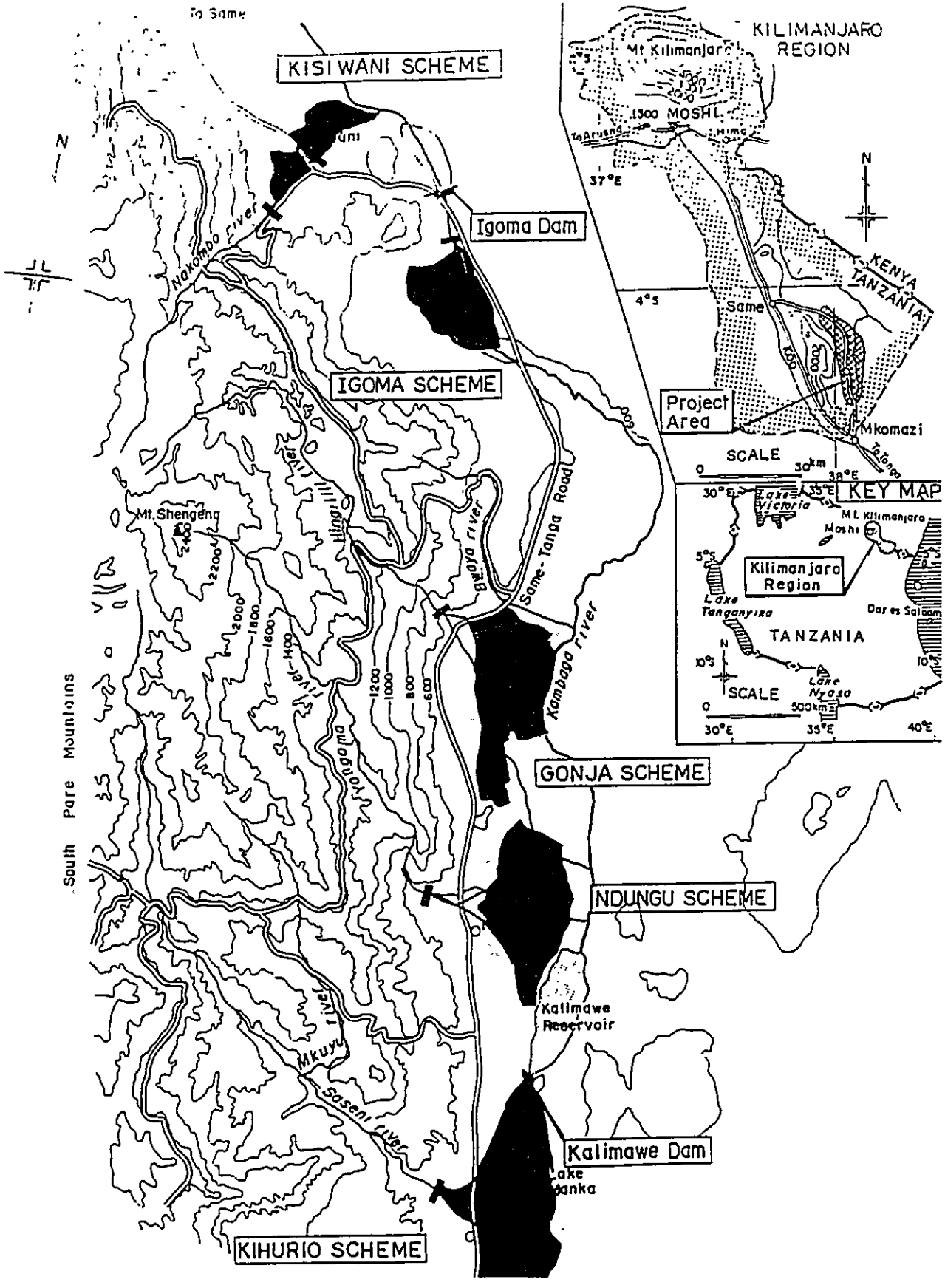
MKOMAZI VALLEY AREA IRRIGATION DEVELOPMENT PROJECT

FOLLOW-UP REPORT 1995

Project data

Region:	Africa
Country:	United Republic of Tanzania
Sector / Subsector:	Agriculture / General
Code No:	AFR TZA/S 303/90
Type:	Feasibility Study
Counterpart Agency:	Regional Development Directorate, Kilimanjaro Region
Fiscal Year Completed:	1991
Consultants:	Nippon Koei Co., Ltd Kokusai Kougyo Co., Ltd
Expenditure:	246,470 (¥,000)
Present Status:	Partially Completed

Project site map / location



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1 Executive Summary

Summary of survey results

The Mkomazi Valley Area Irrigaton Development Project has been partly implemented under grant aid from Japan. Out of a choice of four schemes, the Ndungu Agricultural Development Project (ADP) was chosen for funding and construction was completed in February 1990. It comprises 680 hectares of irrigated land with tractors and mechanised post-harvest processing.

After handover to the Government of Tanzania in 1991, the project received limited funding from the Government of Tanzania to cover operation and maintenance (O&M) costs. From 1993 the project has been theoretically self-financing.

The project managers expressed dismay at the rapid withdrawl of external funding, and at the growing problems with internal maintenance costs. The current annual internal O&M budget is Tsh. 200 million, of this, farmers in the project provide Tsh. 40 million. At present the shortfall of Tsh. 160 million (US$ 280,000) is outstanding.

Current solutions to the predicament involve obtaining the authority to increase water charges by over 350% to cover the cost of immediate repairs and maintenance. However, they would like to raise the water charges slowly, and there is a perceived need for a loan to facilitate this transition.

Significantly there is a need for training in accounting and economic modelling. Technical problems exist in the operation and maintenance of the project which may be solved by the placement of one or two JOCV volunteers in technical training roles.

Conclusions

In the simplest analysis of yield per hectare of paddy rice, project performance is acceptable as it falls within the projected range. The paddy yield per hectare is 5.2 tons/ha of which 40% of land produces a second crop in the dry season, ie: average yield per year over the whole project of 7.3 tons paddy/ha/yr.

However, the Ndungu ADP ultimately had an investment cost approaching US$20,000/ha. With zero investment cost, the yield under traditional irrigation systems, before the introduction of high-yielding varieties and inorganic fertilizer, was approximately 2.35 tons/ha. With an investment cost of US$175/ha, improved traditional irrigation managent and agronomy provides stable yields approaching 4 tons/ha with some land cultivated twice in a year.

Despite this poor assessment, the high initial investment made at Ndungu should not be lost to short-term objectives. The project management at the Ndungu ADP specifically requested that JICA help review the project financial and technical management and develop a strategy to achieve a longer-term self-sustaining management structure.

Recommendations for JICA

In addition to looking very closely at projects of this type in the future, the following recommendations may alleviate some of the problems now faced by the project:

- JICA and JOCV may wish to consider the placement of volunteers to assist the project management and farmers co-operatives in the technical management of the Ndungu ADP and neighbouring informal projects;
- to assist the project in raising water charges over a period of time, ie: three or five years. The provision of a loan could be examined;
- some grant aid for specific spot maintenance on the conveyance structures may also be considered. Material and equipment supplied under the KRII agreements could be specifically allocated for this purpose;
- JICA may wish to look at the linkages with other regional intiatives, specifically the neighbouring Traditional Irrigation Improvement Project (TIP), both projects may benefit from collaboration on training in management and marketing ventures.

Dissemination and following action

In addition to the JICA UK Office, it is anticipated that this report will be distributed among the relevant authorities participating in the project: The Regional Development Director, Kilimanjaro

Region, and The Ministry of Water, and the Directorate of Irrigation under the Ministry of Agriculture.

2 Results of survey: Project Design

Identification and outline of project rationale

The project was identified by the Government of Tanzania following the implementation of the Kilimanjaro Region Integrated Development Plan (KRIDP). This plan briefly examined the potential of the Mkomazi valley for the development of irrigated agriculture. The KRIDP proposals included:

Name:	Existing hectares:	Planned hectares:	Water required (m3/sec):	Cost (million Tsh.:
Kisiwani	400	400	1.4	4
Gonja	400	400	1.4	4
Ndungu	400	400	1.4	4
Kihurio	1,600	1,600	5.6	16
TOTAL	2,800	2,800	9.8	28

The study and design period for each scheme was set at two years and the total cost was estimated at Tsh. 28 million or approximately US$3.64 million.

Following this, in 1981, the Government of Tanzania requested that the Government of Japan make a Feasibility Study on the Mkomazi Valley Irrigation Development project.

Short description of project

The Feasibility Study for Mkomazi Valley was made in January 1984. At this time the scheme had increased the total design to include:

Name:	Planned hectares:	Water required (m3/sec):
Kisiwani	360	0.54
Gonja	600	0.82
Ndungu	680	0.93
Kihurio	1,670	3.09
Igoma	750	1.2
TOTAL	4,060	6.58

The feasibility study was carried out in one year. The total construction cost was estimated at Tsh. 734 million, or approximately US$35.8 million of which the Ndungu ADP comprised US$ 5.1 million.

The stated aims of the study were ***to verify*** the technical and economic feasibility of irrigation in the Mkomazi Valley Area. Of the total of 3,980 hectares, only the Ndungu project has been funded for development. Of the five areas, the Ndungu ADP had the second highest estimated return on investment, it was comparatively small and had the lowest calculated development cost per hectare.

Detailed design:

The Detailed Design Report for Phase I was completed in June 1987, and the Detailed Design Report for Phase II was completed in November 1988.

Funding

The cost of the Mkomazi Valley Area Irrigation Development Project study in 1984 was 346,470 (¥'000) or US$2.7 million.

Review of project design

The JICA project designs for the Mkomazi Valley Area were all formal schemes that would be largely imposed on the local populace with very little input or negotiation with them.

To run effectively and sustainably they require management structures and appropriate technological skills that are slow to evolve at local level.

3 Results of survey: Project Implementation

Implementation and monitoring

The Mkomazi Valley Area Irrigation Development Report describes four main project areas. These can be described in sequence:

a Kisiwani & Igoma

Of the original Mkomazi Valley Area Irrigation Development Report, the northernmost schemes of Kisiwani and Igoma have not been implemented. Of note, the hydrometric river gauging station in the Nakombo River is in need of rehabilitiation. Without reliable hydrometric data, accurate planning is impossible.
The central Gonja Scheme has been partially implemented by local people with limited funding from the Netherlands.

b Gonja / Hingilili

The Hingilili Traditional Irrigation Improvemement Programme (TIP) was implemented as a result of a request by a group of four villages (Hingilili is the biggest) who were experiencing difficulties with drainage of their land. Their fertile floodplain land was prone to flooding in the rainy season and large floods would wash away the crops.

The project was set up under Dutch funding in 1992. Initially TIP constructed a main floodway to control flooding. This critical feature was very similar to the floodway designed in the JICA plan. It was constructed with a small bulldozer. The scale of the floodway now causes the villagers some difficulties because the canal is too big to be easily maintained by the people involved in the scheme. The TIP scheme comprises 15 farmers groups, with memberships ranging from 100 to 500 people. They combine to run a system that irrigates up to 2,000ha under four main improved traditional furrows at Mariranga, Shakaka, Tanda and Maore.

Traditional water-management structures existed for whole water catchments, ie: with vertical integration up and down the hill. Riparian rights were provided and controlled by traditional authorities. In one instance a system operated whereby the upland people may not irrigate by night, thus water would be available for lowland people to fill their ponds and irrigate at night or early morning. Under the Ujamaa villagisation process in 1974, the traditional village administrational boundaries were moved to run laterally across the hillside and this diminished the hyrological integrity of the indigenous catchment authority. People still negotiate informally for access to water within the catchment. The farmers groups and social structures that exist under the TIP scheme are based on the furrows. The size of furrows and groups are variable with smaller furrows and groups in the upstream areas.

The TIP scheme runs four sub-programmes in afforestation, soil and water conservation, gender and organisational strengthening:

- the afforestation programme is a small social-forestry programme designed to enhance resoure management upstream in the catchment and broaden the resource base;
- the soil and water conservation programme is primarily based on encouraging terracing in upland areas to reduce soil loss in the upland and reduce sedimentation in the lowland schemes;
- the gender development programme is a mandatory component, since the programme is funded by the Dutch Government;
- the organisational strengthening programme is a critical component which attempts to slowly increase the confidence of villagers to organise themselves into more effective groups, based on traditional village social structures, and to increase their efficiency in working on the operation and maintenance of the system.

Under the TIP scheme the villagers steadily expand and improve on their system, using observation of water and riverine processes to guide their development. At present the main problem faced by villagers is lack of coordinated manpower to perform very large maintenance tasks such as canal cleaning, at critical periods.

The TIP scheme is run on a an annual budget of Tsh. 30 million (approximately US$ 50,000). The programme is funded for seven years by the Dutch Government and is assisted by one Dutch volunteer who is primarily working on institutional

strengthening. In four years, the area under irrigation has moved from 1,040 hectares of rainfed land, to approximately 2,000 ha of irrigated land. Average yeilds of paddy rice have risen from 1.8tons/ha to approaching 4tons/ha. The adoption of IR54 and cultivation techniques adapted from the formal projects has undoubtedly had a major influence on this increase.

c Ndungu

The Government of Tanzania made a request for funding from the Government of Japan to design and construct the Ndungu ADP. The project had three broad aims:

- increasing to agricultural production and the food self-sufficiency of Tanzania;
- contributing to the improvement of living standards of farmers in the Mkomazi valley area;
- promoting irrigation in the Mkomazi valley area, by establishing the project as a leading role model of developed irrigation.

The Ndungu ADP is fed by the Yongoma River which has a catchment of 70.5 km^2. The headworks comprise weir, sluice gates, spillway, and sediment pond with a flushing gate. The project is fed by this single offtake. The main and secondary canals are lined concrete, all tertiary canals are earth channels. The Yongoma floodway was constructed and drainage was upgraded and improved. An irrigable farm area of 680ha was developed. Rural water supply for the neighbouring village was constructed. Postharvest facilities, comprising drying house, sun-drying yard, mill, and training facilities were constructed.

The Ndungu ADP was completed 1991 under Grant Aid from the Government of Japan at a cost of ¥1.8 billion (approximately US$15 million).

The figures for cost of construction are hard to disaggregate, however, they indicate a unit cost of around US$20,000/ha. In the same year (1991), the IBRD/FAO Investment Centre judged that proposed irrigation projects in Africa with an inception cost of over US$2,000 would not be sufficiently economically viable to receive funding from the IBRD.

In 1991 the project received 27 Kubota M4050 51hp tractors. These were provided under the KRII agreement. The Government of Japan continued to fund JICA experts and cover some of the O&M costs until 1992; the Government of Tanzania partly

covered O&M costs until 1993; since then there has been no external funding.

d Kihurio

To date, no large-scale formal developments have been made at the Kihurio site. However, the site currently irrigates over 810ha of land under traditional irrigation.

Processes

The Ndungu ADP is managed by staff from the Ministry of Agriculture who report to the Regional Agricultural and Livestock Development Officer in Moshi.

A ledger is kept that details the current ownership and status of each section of land. Water dues are paid by farmers before the start of the growing season.

The management of the project is implemented in agreement with the Central Water-Users Association, a group comprising around 10,080 farmers from three villages bordering the project. The Central Water-Users Association was set up in 1991, and every farmer in the scheme has to be a member.

The Farmers Co-operative has only sevently members and is based around the post-harvest facility. It is taking a more long-term perspective of project management. This essential group has yet to gain strength in rationalising the increased water charges which are resisted by the majority of farmers.

Operation

The rice crop is spread over two growing seasons: 680ha in the wet season, 270ha in the dry season. Total annual area irrigated is 950ha. The total yield of paddy per year is on average 3,450 tons of paddy. The yield per hectare is therefore 3.6 tons/ha. Puddling and rotavating is done in one operation in newly-irrigated paddy. Dry cultivation was discontinued because of the wear on rotorvator blades which were expensive to replace.

Tractor performance is good, with all of the original 27 tractors in good order. They are maintained to schedule and the main problems are common to all Kubota M4050 tractors in the

region: front wheel bearing seals decay and leak, and the hydraulic pumps wear fast which means that driver/operators have to frequently re-adjust the hydraulic arms.

At Ndungu ADP, as with Lower Moshi ADP, it is mandatory for farmers within the project to use tractors to cultivate their fields. The maximum tractor requirement is fifteen tractors working at any time. Therefore the remaining 12 are in storage, or in the workshop under maintenance or repair.

Planting on the scheme is now at 16 x 16 cm spacings. The spacing was decreased from 20 x 20cm under advice from JICA experts following on-farm trials.

Harvesting is carried out by hand or by combine harvester. Farmers prefer the combine harvester because losses of paddy rice are minimal. Combine harvesters cut the paddy rice early when it is a little green or early in the morning when it is damp to prevent losses due to shattering. Hand-harvesting is done later in the season when the paddy is fully ripe and shatters more readily, this makes threshing easier but losses in manual harvesting are higher.

Milling costs to farmers at the project are higher than in the private sector. The Ndungu ADP mill charges Tsh. 10/kg, while village mills charge between Tsh. 7-8/kg. However, farmers prefer the Ndungu mill because it produces a higher quality product with a higher sale price.

Frequent short visits are made by staff from the Lower Moshi Agricultural Development Project, including JICA experts. A monthly report is made to the Regional Agricultural and Livestock Development Officer in Moshi.

At present the critical management feature of the project is the internal collection of adequate water charges to cover the annual O&M costs. The O&M budget required for 1995 is estimated by the project managers as Tsh. 200 million. Farmers in the scheme currently provide around Tsh. 40 million in water charges. Each farmer pays Tsh. 9,131 per plot of 0.3ha. These fees are paid in two groups, one for each growing season. The project managers would like to recover some Tsh. 200 million in water charges by initially charging farmers Tsh. 32,000 per plot. They consider this 350% increase to be reasonable as the project management state that total production of the project now exceeds Tsh. 450 million.

O&M sum required	Fees per plot per growing season	No of plots (950ha x 3.33)	Income from water charges	Income from tractor hire*	Deficit
200m	9,131	3,166	28.9m	11.1m	160m
200m	32,000	3,166	101.3m	98.7	-

* Estimated

Total output in a good year is around 5,100 tons of paddy. This produces around 3,162 tons of polished rice (assuming paddy: rice = 1:062). A 100 kg bag of rice sells for Tsh. 8,000 if there is a big harvest, this price rises to Tsh. 1,300 in the dry season or during a bad year. The project income from rice alone is then variable between Tsh. 252 million and Tsh. 411 million. At point of sale (shop price) rice is Tsh. 120/kg or Tsh. 150/kg for local aromatic varieties.

Impacts

The impact of the project has been profound for local communities. There are many small mills operating, locals schools have improved, many people derive a good income from farming either in or near the projects. Problems with bilharzia are said to be minimal.

The rise in incomes and standards of living has also led to a general increase in the cost of living. Plots of land within the project are now very expensive. Informally-developed irrigated land outside the formal scheme is also expensive.

Sustainability

From a technical perspective, there are problems with the procurement of spare parts for the rice mills, and to a lesser extent there are problems with procurement of spares for the Kubota tractors. The process of procurement is slow and the dealership for Kubota tractors in Dar es Salaam has collapsed.

The high cost of the initial investment will be wasted unless the project management are helped to repair the system and raise internal revenues to cover the O&M costs. Without this injection of funding and management the project will decay very fast.

4 Results of survey: Conclusions

General comments on development & lessons learned

The development cost of the Ndungu ADP rose from an estimated US$ 4 million in 1977 to US$ 5.1 million in 1984, to an actual cost of US$ 15 million in 1991. The fixed capital cost per hectare is around US$20,000. This compares to the cost per hectare for incremental development projects such as the TIP which are in the order of US$ 175 per hectare. The management problems experienced by TIP are not as severe as those experienced in the Ndungu ADP partly because the scheme is evolving along lines largely dictated by local people.

The two projects are complementary and may collaborate in many ways. Farmers in the informal traditional furrows adapt techniques from the formal schemes to use in their own farming systems. TIP has borrowed equipment from the Ndungu ADP for specific tasks. In the future, it may be possible that cooperative management strategies may be compared and discussed. The formation of farmers groups into working co-operatives to perform maintenance tasks is common to both projects and there may be mutual benefits to be derived from more formal discussion and informal interaction.

Specific comments on JICA's role

The project management feel that donor funding and expatriate personnel left the project too fast. There is evidence that the project was not designed around peoples needs or existing socio-economic structures. Both shortcomings have led to problems in skills and in a delay in adapting to the new situation which requires either extraordinary management measures or external funding to bridge the gap between resource depreciation and sustainability.

The lack of training in cooperative managment is especially felt, and could have been effected during a gradual handover staged over several years. The exisiting documentation on the project shows a lack of monitoring of internal problems, this reflects poorly on the follow-up proceedures of the institutions concerned.

Specific recommendations for JICA

The project management made specific requests for two permanent JOCV volunteers to help with mechanical maintenance and irrigation water management.

The hydrometric network of the Mkomazi river valley is in poor repair. The cost or rehabilitation is very small in relation to the value of the resource and the value of reliable information on that resource. It is recommended that the RDD Moshi prepare a proposal for JICA to fund basic rehabilitation of the network.

Requests for further surveys

There were no requests for further surveys. However, any following survey that looks closely at the internal management of the Ndungu ADP should examine the potential of forming linkages with TIP and other informal programmes in the Mkomazi valley area. A training needs assessment for the Ndungu ADP managers may also be beneficial.

Annex A: Interview

Interviewees

Mr E. H. Masija. Assistant Commissioner (Irrigation)
Ministry of Agriculture, Dar es Salaam.

Peter C. Kangwa. District Commissioner
P.O. Box 1. Same.

Mr A.S. Kavumo. Project Manager
Ndungu Agricultural Development Project.

Mr James E. Hangi. Operations and Maintenance Chief
Ndungu Agricultural Development Project.

Mr William Francis. Irrigation technician
TIP Hingilili, P.O. Box 136, Same.

Ms Linda Baas. SNV Advisor
TIP Hingilili, P.O. Box 136, Same.

Interview notes from: Mr James Hangi of Ndungu Agricultural Development Project.

Note: Questions given in Italics

Identification of project

Who initiated the project?
The project was first discussed under the Integrated Development Plan.

When was the original design put forward?
The designs go back to 1984 with the original Mkomazi Valley Area Irrigation Development Project, and the final designs for Ndungu were completed in 1988.

Have the goals of the project changed over time?
Perhaps yes, they are changing now. Our short-term goal is to secure funding to maintain the project in the short-term, in the long-term we wish to establish a structure of internal cost recovery that will enable us to be self-sustaining in terms of Operation & Maintenance costs.

Did the project fit the Regional Development Plan?
Yes, it was based on, and followwed from the 1977 Kilimanjaro Region Integrated Development Plan which was based on the regional third and fourth five-year development plans.

Funding

When & how was funding made available?
The scheme was funded by Grant Aid of from the Government of Japan.

How was the funding applied for?
Funding was applied for via the Prime Ministers' Office, the Ministry of Planning and the Ministry of Finance.

What donors were involved?
None.

Was the funding adequate to complete the scheme?
Yes.

Monitoring

What monitoring / reportage exists for the project?
In addition to the JICA reports. Monthly reports are submitted to the Regional Development Directorate. There are no available records of economic performance and no training was given to the Project Staff in economic analysis. If this is done at all, it is done by the Regional Agriculture and Livestock Development Officer in the Regional Development Directorate at Moshi.
We make our own budget at the end of each year, and forward that to the RDD Moshi.

Official / Independent?
These are all official documents.

Design & Appraisal

How many years of hydrometric data did the designers have?
Twenty-two years.

Was this sufficient?
Yes, there is excess water, and the flood drains are calculated to contain in excess of a 200 year return event.

Were significant changes made in the design, operation and management of the scheme?
No.

At what stage were local people consulted?
Before and during the construction process. The farmers groups or clans that worked on traditional furrows were transplanted into the scheme as units.

Were local farmers and pastoralists involved in the planning process?
Yes, the plans provided that land within the scheme closely reflected the original land holdings of farmers who lost land to the scheme. Land was portioned out in 0.3 hectare plots and the designers tried to retain existing agrarian social structures.

Was there an environmental impact study?
No.

How accountable was the management of the scheme? (Did it incorporate local people and promote their interests?)
We are local people, but we are experiencing diffulties now with obtaining adequate water charges to perform basic maintenance. The formation of the co-operative is slow, with only seventy farmers to date. (There are around 10,000 farmers involved in the scheme)If more farmers were in the co-operative, it would be simpler to negotiate for higher charges.

Development to date

Was the project completed on schedule?
Yes, the project was competed in February 1990, but began operation in 1989 on completed sections of Phase I.

Is the project fully functioning?
Yes and no.
Yes, the project operates beyond the boundaries of the original scheme since the value of rice is very high and peripheral informal rice cultivation is now important to the local economy. Everybody is using the IR54 variety and tries to copy the agronomy taught within the scheme and tractor hire services are available from the project for the surrounding areas.
No, the formal scheme is not functioning economically to maintain itelf. The Government ceased to provide funding for

O&M costs in 1993 on the basis that we would be able to pay for the O&M costs by levying water charges; but they are not enough. Since 1991 (completion of construction) there has been no major spot mainentance on the scheme. Unlike lower Moshi, all cnals other than the main canals are simple earth channels, the conveyance efficiency of the canal is now very low because of cracks, weeds, leaks and silting. The division boxes (field outlets) leak because the wooden shutters have been removed to make wheels for wheelbarrows!

How were local people compensated for loss of land to the scheme?
They were given proportional sections of land within the scheme.

Did local people receive adequate training in O&M to run the scheme?
In some ways, yes. However, unlike Lower Moshi, nobody from this project received training in Japan. There is still training provided at the Kilimanjaro Agricultural Training Centre (KATC) in Lower Moshi. However, we are experiencing problems in certain areas.
We receive regular visits from JICA experts based at Lower Moshi, but this is not enough.

Were other national institutions involved? How?
The Ministry of Agriculture and the Regional Development Directorate provided counterpart staff from the directorate of irrigation to the JICA construction and development experts.

Processes

Were there any complaints by local people during the construction and implementation of the project?
Yes, local people were concerned at loosing the varied crops they grew on the land before the scheme, such as mangoes, cocnuts, sugar cane and bananas.

Did their complaints lead to significant changes in the design & operation of the scheme?
No. When the scheme began operating, and the farmers saw the profits from rice, they did not mind and concentrated on growing rice.

Impacts

How has the implementation of the irrigation project affected land-tenure and indigenous economic systems?
Yes, very much so. People are richer now. Many original plots have been broken up and sold as people sell small pieces of land inside the scheme which can grow two crops a year. The economy of the area has been given a great boost by the economic strength of the farmers. But the cost of living in the are has also risen.

How were opportunities offered by the new scheme allocated to local people?
Farmers were given land, and other traders have opened private mills. Outside the scheme people are free to work as they wish.

Has the project been productive and successful?
In the short term, yes. But we now face a big problem with maintenance:

Is it used efficiently?
Yes.

What is the net internal rate of return?
We have no record of this. However it is bad because we cannot yet raise our water charges to pay for the maintenance of the project.

Is there a need for an environmental impact study?
No.

What is the impact on resource-users downstream?
Very unfortunate. Tanzania Electricity Supply Company (TANESCO) built a very expensive dam downstream, and they complain that we are major water users and they have suffered a loss of hydropower. However, our maximum intake is just 0.98 m3/sec, (design intake max was 0.925m3/sec) and the river is providing up to 13 m3/sec, so we don't believe that we are significant. In the locality it is good that farmers no longer have a problem with flooding

Sustainability

Is there any monitoring of the project?
Yes. We have records of harvest yields, water use, water payments and receipts. We also produce a monthly report for the RDDin Moshi, and an annual budget.

Is there adequate control of resource use in the scheme?
Yes.

How the net output of the scheme changing over time?
It is rising steadily.

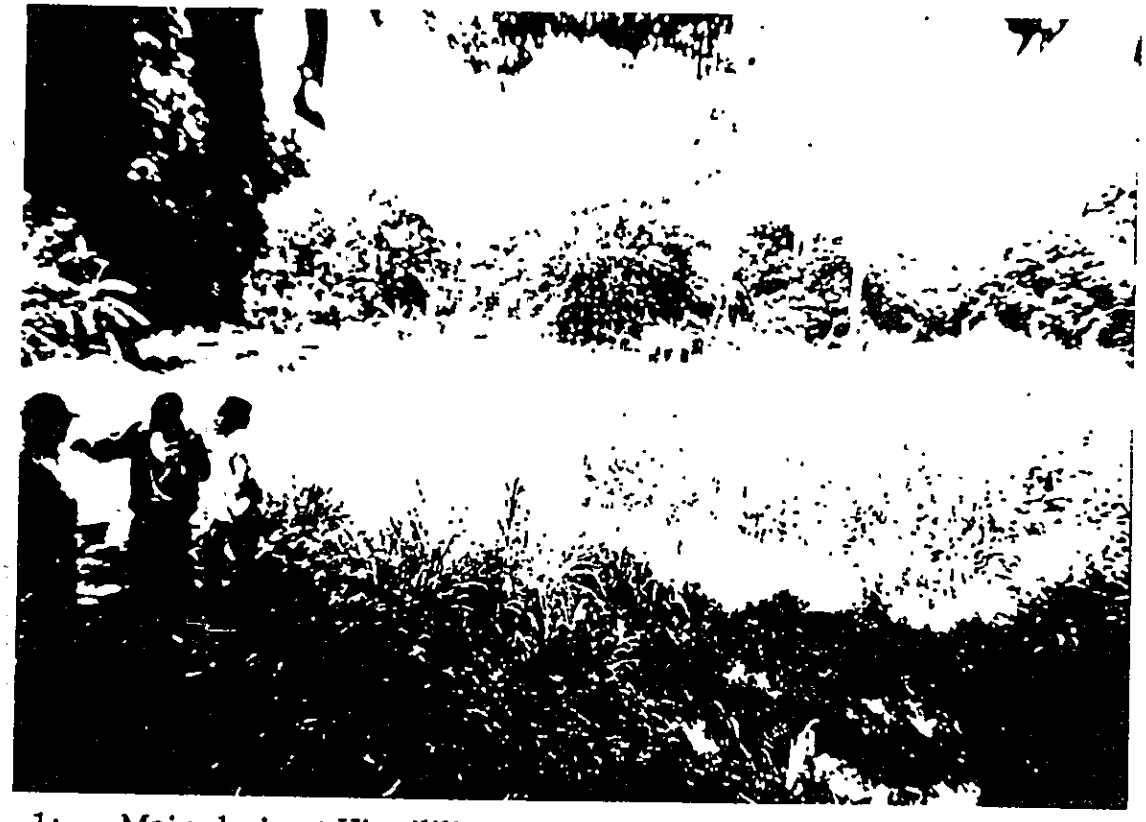
Is there a significant change in the resource base?

How is the management of the scheme funded now?
It is not funded enough.

Are these funds sufficient?
No, for instance, the income from the farmers is not adequate to cover the O&M costs. Even the rates for tractor hire only cover the immediate operational costs, not the cost of maintenance and depreciation of the tractor.
The water charges are much more serious.

Is the management adequately skilled to maintain and operate the scheme in the foreseeable future?
Basically yes, but we need help in specific areas. We have some support from the experts at Lower Moshi but it is not enough.

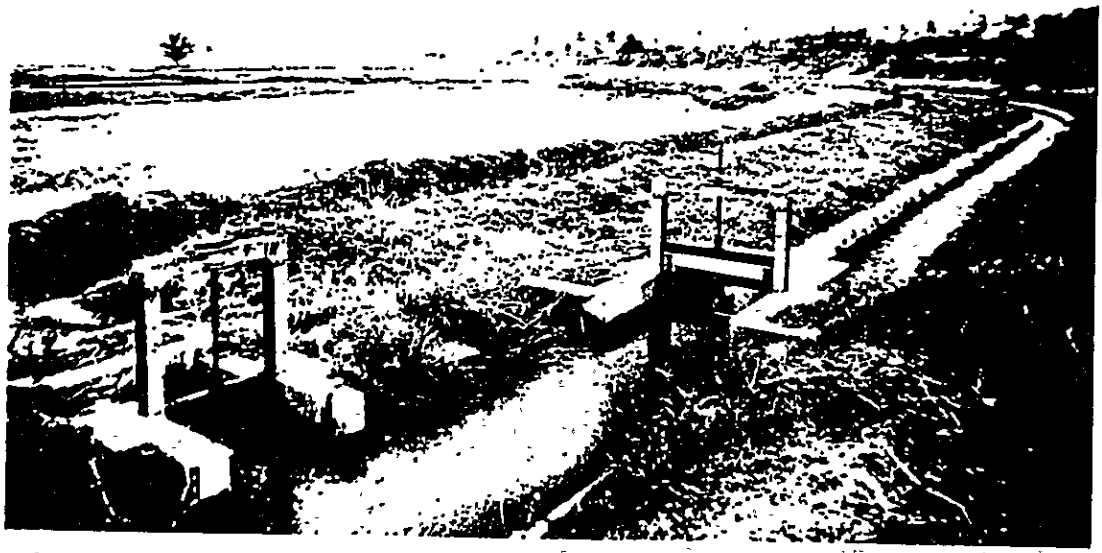
Annex B: Photographs of project



1: Main drain at Hingilili, now choked by reeds.

2: View over informal farms bordering Ndungu

3: Transplanting rice at 16/16cm spacings



4: Cracked and sunken offtakes in need of repair

Annex C: Terms of reference & purpose of survey

Terms of Reference

- The JICA UK Office has requested the consultants to prepare of an independent follow-up survey in Tanzania.

- It is proposed that the work be a carried out between Thursday 9th November and Friday 22nd December, 1995.

- The survey will comprise a broad evaluation and current appraisal of thirteen (13) Master Plans, Feasibility Studies, and Basic Studies in comparison to the present and future status of the individual projects or studies.

- The scope of work will cover:
  a) Study on Water Resources Development in the Ruvu River Basin
  b) Study on Dar es Salaam Road Development Plan
  c) Natural Soda Development in Lake Natron and Related Transportation Facilities
  d) Kilimanjaro Region Integrated Development Plan
  e) Southern Coast Link Road Project
  f) Proposed Mahale Mountains National Park
  g) Lower Moshi Agricultural Development Project
  h) Mkomazi Valley Area Irrigation Development Project
  i) Expanded Afforestation Work in the Same District of Kilimanjaro Region
  j) Road Improvement and Maintenaance in Dar es Salaam
  k) Lower Hai and Lower Rombo Agricultural Development Project
  l) Rehabilitation of Dar es Salaam Water Supply
  m) Topographic Mapping of Mwanza-Geita Block in the United Republic of Tanzania

- If possible, the survey will cover recent and relevant developments in the context of each project or study.

- Where appropriate, the reports will comprise questionnaires, interviews and highlight following actions for JICA and/or the Government of Tanzania.

- The reports will contain a detailed itinerary, records of interviews made and sources of information.

- The quantity and quality of information contained in the reports will reflect the availability and accessibility of information in Tanzania.

- The reports will be prepared in draft form and presented to the relevant implementing Ministries for comments before leaving Tanzania.

- Final report texts and layouts will be completed by Friday 22nd December, 1995.

Purpose of survey

This report comprises a descriptive assessment of the progress of the project against the objectives of the project as described in the original study. The purpose of the survey is to:

1. Describe project achievements to date by their:
   - A. Impacts
   - B. Effectiveness
   - C. Relevance
   - D. Efficiency
   - E. Sustainability

2. If required, produce specific and general recommendations to improve the performance of this and other similar projects

3. Further communication between funding agencies, design consultancies, implementing agencies and project beneficiaries

Annex D: Methodology & Chronological Itinerary

Methodology

As far as possible, the survey was performed by a structured process:

- Identify the authorities involved
- Identify and locate key informants within the authorities
- Locate adequate documentation and reportage
- Define aims of project
- Conduct interviews on specific and general issues
- Define indicators of achievement and/or progress
- Visit the site
- Analyse the collected data
- Prepare draft report
- Discuss the draft report with key informants
- Edit and prepare final report text

Chronological Itinerary

Wednesday, November 15th
Meeting with Directorate of Irrigation:
Mr Masija, Assistant Commissioner

Tuesday, November 21st
Meeting with RDD Kilimanjaro Region:
Mr Riwa, Acting Regional Development Director
Dr F.P. Sunguya, Regional Agricultural and Livestock Development Officer
Mr Mushi, Regional Natural Resources Officer

Thursday, November 30th
Field trip to Mkomazi valley area with:
Peter C. Kangwa. District Commissionerme District
Mr Kiviar, Agricultural Development Officer, Same District

Annex E: References & reports used in survey

JICA (1983) Feasibility Study on the Mkomazi Valley Area Irrigation Development Project. Interim Report. Volume I. Main Report. March 1983

JICA (1983) Feasibility Study on the Mkomazi Valley Area Irrigation Development Project. Interim Report. Volume II. Annexes. March 1983

JICA (1984) Feasibility Study on the Mkomazi Valley Area Irrigation Development Project. Volume I. Main Report. January 1984

JICA (1984) Feasibility Study on the Mkomazi Valley Area Irrigation Development Project. Volume II. Annexes. January 1984

JICA (1984) Feasibility Study on the Mkomazi Valley Area Irrigation Development Project. Volume III. Drawings. January 1984

JICA (1987) Basic Study Report on The Ndungu Agricultural Development Project. Draft. March 1987

Nippon Koei Co., Ltd (1988) The Ndungu Agricultural Development Project (Phase II). Design Report. November 1988