

PN-ABP-103
823-19

MAHAWELI ENTERPRISE DEVELOPMENT

MED/EIED PROJECT

(USAID/Sri Lanka Project No. 383 - 0090)
(Contract No. C-00-0031-00)

A STUDY OF COMMERCIAL OPTIONS FOR THE DRAUGHT ANIMAL AND DAIRY DEVELOPMENT PROGRAMME FARMS AND ACTION PLAN

by

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March, 1993

6/1993



INTERNATIONAL SCIENCE AND TECHNOLOGY INSTITUTE, INC.

WITH :

ERNST & YOUNG CONSULTANTS (Sri Lanka)
DEVELOPMENT ALTERNATIVES, INC.
HIGH VALUE HORTICULTURE, PLC.
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CONSULTANTS TO THE MAHAWELI AUTHORITY OF SRI LANKA

The Mahaweli Enterprise Development Project

The development of the natural and human resources of the Mahaweli river basin has been a high priority of the Government of Sri Lanka and international agencies since the late 1970's. Largely completed are the construction of dams, irrigation and power systems, roads and other physical infrastructure, the settlement of the land and the formation of the agricultural production base. The challenge for the 1990's is to build a diverse, dynamic economy generating higher incomes for Mahaweli families. In meeting this challenge, the private sector has a leading role to play.

The Mahaweli Enterprise Development Project (MED) is a special initiative of the Mahaweli Authority of Sri Lanka, with the support of the United States Agency for International Development. MED promotes private investment and job creation in agribusiness, manufacturing, tourism, minerals and services by directly assisting entrepreneurs and companies with technical expertise, marketing support, training, business advisory services and credit. MED also provides policy analysis support to improve official frameworks for sustainable enterprise development in the Mahaweli areas.

The Employment, Investment and Enterprise Development Division of the Mahaweli Authority is responsible for MED implementation. Technical consultancy is provided by a consortium led by the International Science and Technology Institute, Inc., a private consulting firm with head offices in Washington, D.C. Also in the consortium are Agroskills, Development Alternatives, Ernst and Young, High Value Horticulture and Sparks Commodities. Marketing services are provided by SRD Research and Development Group, Inc.

PREFACE

This report is based on a study carried out over the period February 4 - 27, 1993, by ISTI consultants Dr. Cedric Nott, livestock specialist, and Hiran Perera, financial specialist. Also, Mrs P.C. Mathias, EIED Financial Manager, participated in most of the study's field work and follow up discussions. The study was greatly assisted by the cooperation and assistance, both logistical and technical, of Dr. Jagath Peiris of the DA&DDP.

The report recommends that the Draught Animal and Dairy Development Program be corporatized and subsequently privatized. It recommends that the Mahaweli Livestock Enterprises, Ltd., be merged into the corporatized DA&DDP prior to privatization. The reasons for these recommendations, including eliminating the public sector subvention, continuing services to settlers and achieving a more efficient use of Mahaweli resources, are set out along with an action plan for implementation.

ACRONYMS

A.I.	Artificial Insemination
DA&DDP	Draught Animal & Dairy Development Programme
DAFH	Department of Animal Production & Health
EC	European Community
EEC	European Economic Community
EIED	Employment Investment & Enterprise Development Division
FMD	Foot & Mouth Disease
HS	Haemorrhagic Septicemia
IDPL	International Dairy Products Ltd.
MASL	Mahaweli Authority of Sri Lanka
MED	Mahaweli Enterprise Development Project
MILCO	Milk Industries of Lanka Company Ltd.
MLE	Mahaweli Livestock Enterprises Ltd.
NLDB	National Livestock Development Board
PRIMA	Brand name of compound poultry and livestock feeds of Ceylon Grain Elevators Ltd.
U.K.	United Kingdom
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

GLOSSARY

Maha	North East monsoon season (November to February)
Neat Cattle	General term for cattle, including Bos indicus Zebu and Bos taurus Temperate, and unimproved and improved/upgraded breed types
Yala	South West monsoon season (April/May to September).

EQUIVALENTS

5 miles	= 8 kilometres (approx.)
2.47 acres	= 1 hectare (approx.)
SLRs.45	= US\$1 (approx.)

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**STUDY OF COMMERCIALIZATION OPTIONS FOR THE
DRAUGHT ANIMAL AND DAIRY DEVELOPMENT PROGRAMME
FARMS AND ACTION PLAN PREPARATION**

EXECUTIVE SUMMARY

1. OBJECTIVE OF STUDY

The objective of the study is to identify options for the future of the DA&DDP and the MLE taking into account the objectives of ensuring the continued availability of the present services to settlers and the optimal use of Mahaweli resources which are presently assigned to them.

2. BACKGROUND

The Draught Animal & Dairy Development Programme (DA&DDP) of the Mahaweli Authority of Sri Lanka (MASL) started in 1981 with the objective of making animal draught power for cultivation available to settlers as an alternative to tractor power which was becoming increasingly expensive at that time. Eleven Mahaweli Authority cattle and buffalo breeding farms were established as the sources of improved draught and dual-purpose draught-dairy stock. A milk collection, processing and marketing programme was started, together with supporting technical extension services, in order to provide a secure market for the milk from the settlers' dairy farming enterprises, as a source of income for settlers to use for purchase of the draught-dairy stock.

In 1987 the DA&DDP made a cooperation agreement with the Land Commissioner's Department to establish essentially the same draught-dairy cattle-buffalo and milk collection, processing and marketing programme under Phase II of the Kirindi Oya Irrigation and Settlement Project financed by the Asian Development Bank.

There are now about 5,240 settler milk producers supplying 53 milk collection centres established by the DA&DDP. A total of 1.45 million litres of milk was collected in 1992.

The DA&DDP activities are based in Systems B, C, H, Uda Walawe, Kirindi Oya, Upper Mahaweli Kotmale, System A, System G and System L. The twelve farms total 8,974 acres.

In 1990 a programme of diversification was started on the eleven cattle and buffalo breeding farms, and on the farm allocated in Kirindi Oya project, primarily to increase farm revenue to offset the cost of operating the DA&DDP. Poultry broiler, layer, pig and goat enterprises have been started. A secondary benefit of the diversification policy has been that settlers have been introduced to these four enterprises.

A private broiler processing company, Mahaweli Livestock Enterprises Ltd. (MLE), was established at Thambuttegama in System H in 1989. The MLE plant is supplied by 236 settler contract growers of broilers. The DA&DDP is contracted to manage MLE.

3. **COMMERCIAL ACTIVITIES AND SETTLER DEVELOPMENT SERVICES OF THE DA&DDP AND MLE**

The DA&DDP carries out commercial activities on the twelve farms and from those farms the DA&DDP delivers livestock development services to settlers. The MLE is a commercial broiler processing company located next to the DA&DDP Niraviya farm.

The activities and services can be listed as follows:

Commercial Production Activities and Marketing of Unprocessed Products:

- Cattle breeding, sale of improved crossbred breeding stock, milk, cull breeding stock
- Buffalo breeding, sale of improved crossbred breeding stock, milk, cull breeding stock
- Production of broiler chicks by MLE, sale of chicks, cull parent stock
- Broiler production, sale of commercial broilers
- Egg production, based on bought in chicken day-old chicks, sale of eggs, cull spent hens.
- Pig multiplication, sale of weaner piglings for breeding or fattening
- Pig fattening, sale of fattened pigs
- Goat breeding, sale of crossbred meat-type and dairy-type breeding stock, cull breeding stock
- Maize production for grain (40 acres only), sale of grain from DA&DDP to MLE
- Egg marketing of DA&DDP farm eggs (dry-cleaned, ungraded)

Commercial Processing Activities and Marketing of Processed Products:

- Milk processing, sale of chilled milk, curd, yoghurt, ghee
- Broiler processing (MLE), sale of frozen broilers
- Pig processing (small scale), local marketing of own farm produced pork through DA&DDP sales outlets
- Goat processing (small scale), local marketing of own farm produced mutton through DA&DDP sales outlets

Minor and Experimental Commercial Activities:

- Pineapple production
- Hardwood timber (teak, hamila) production
- Cashew production

Settler Development Services: Production Activities and Marketing of Unprocessed Products:

- Secure market for commercial cattle and buffalo milk production, establishment of milk collection (reception) centres, including civil works, equipment, training secretary-receiver, organization of primary cooperative, milk quantity and quality control, payments, provision of inputs: sale of upgraded cattle and buffalo to settlers, milk cans, minerals, feed (if required)
- Breeding services for cattle and buffalo, natural mating (free loan of stud bulls), cattle Artificial Insemination and follow up pregnancy diagnosis
- Fodder services, provision of fodder grasses and shrubs
- Feed services, provision of compound feeds, minerals
- Health care services, vaccination of cattle and buffalo against Haemorrhagic septicemia (HS) and Foot & Mouth Disease (FMD), establishment of Minor Treatment Centres (training volunteer operator, supply of materials, medicines and drugs, anthelmintics, sale receipts are returned to DA&DDP without commission for volunteer), access to DA&DDP veterinary surgeon, facilitated contact with services of Department of Animal Production & Health
- Settler education and training in livestock and poultry husbandry

- Credit facilitation, source of loans are commercial banks, technical support to loan beneficiary for milk production, administration of repayments to bank through deductions from milk sales
- Broiler production, MLE contract grower scheme, 236 settler families: delivery of day old chicks, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision), collection of slaughter stock, accounts, administration and payments
- Broiler production, DA&DDP scheme, 26 settler families in 1992, procurement of chicks from MLE, delivery of day old chicks, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision)
- Egg production, delivery of pullets on cash basis, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision)
- Pig production, delivery of weaner piglings on cash basis, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision)
- Goat production, delivery of young stock on cash basis, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision)
- Trained draught cattle bull production, delivery on cash basis of Khillari bull already trained for carting and cultivation. Also training of carter/ploughman.

Settler Development Services: Processing Activities and Marketing of Processed Products:

- Milk processing at four farms: Girandurukotte (System C), Damminna (System B), Niraviya (System H), and Tissamaharama (Kirindi Oya). Product range: buffalo and cattle curd, yoghurt, sterilized sweetened flavoured milk, ice cream, ghee, chilled milk.

4. ASSESSMENT OF THE DA&DDP AND MLE

The DA&DDP has contributed significantly to the provision of animal draught power in the Mahaweli areas and to the development of the commercial dairy industry there. It has done this by establishing cattle and buffalo multiplication farms, issuing dual purpose draught-dairy cattle and buffaloes to settlers, progressively improving the performance of the cattle and buffalo populations in those areas through breed improvement, health care and farmer education programmes, and collecting, processing and marketing milk.

Approximately 10,000 to 12,000 settlers have benefitted from DA&DDP settler services during the ten-year period 1983-1992.

5. **PRIVATE SECTOR AND THE DA&DDP**

The DA&DDP milk collection points can accept an unlimited quantity of milk because private sector companies, viz International Dairy Products Ltd. (main shareholder Nestle), and Milk Industries of Lanka Company Ltd (MILCO) are buying the excess raw milk surplus to DA&DDP's requirements for processing.

The DA&DDP supplies inputs and services for settlers' livestock enterprises more cheaply or more conveniently or both than the private sector.

6. **POTENTIAL FOR THE PRIVATE SECTOR TO SUPPLY DA&DDP SERVICES**

Both MILCO and Nestle have the capacity to provide settler development services similar to DA&DDP for milk procurement and production support services, but whether either or both would provide the present DA&DDP range, availability and quality of settler development services is unclear.

None of the private buyers of cattle and buffalo milk have the capacity of DA&DDP to provide breed improvement services, i.e. to issue upgraded breeding stock, and the availability of stud bull and cattle A.I. services.

The larger private poultry hatcheries have the capacity to supply broiler and layer chicks to settlers in the Mahaweli areas and Kirindi Oya although they are not doing so directly at present.

7. **LIVESTOCK AND CROP DEVELOPMENT POTENTIAL OF THE DA&DDP FARMS**

Land Use Capability: The main constraints affecting potential livestock and crop production and development on the land resources of DA&DDP are: low and erratic annual rainfall, an annual drought period, unavailability of water all year for irrigation, and poor soil quality. Much of the farm land is suitable only for grazing livestock.

Irrigable and Potentially Irrigable Land: There are about 350-400 acres irrigated or potentially irrigable land on the farms out of the total of almost 9000 acres, i.e. about 4%. The potentially irrigable land could be used either for livestock development by planting fodder crops and giving supplementary irrigation, or for irrigated cash crop development. A thorough marketing study is required before diversifying into unusual livestock or crops.

Commercial Activities: The core business activity of the DA&DDP, and the only one in which a product is bought in from settlers' livestock enterprises, is milk collection, processing and marketing of dairy products. The four commercial milk processing activities in Systems B, C, H and Kirindi Oya could be expanded by developing new collection points and routes to extract more milk.

8. FINANCIAL PERFORMANCE OF THE DA&DDP

Since its inception in 1981, the DA&DDP has accumulated a deficit of Rs.131 million, largely due to the obligation to deliver settler development services. In its present form, the DA&DDP would require an annual subsidy of Rs.18 million to continue.

9. FINANCIAL PERFORMANCE OF MAHAWELI LIVESTOCK ENTERPRISES LTD.

The company is at present commercially viable and could continue to operate and expand in the future without any public sector subsidies.

10. OPTIONS FOR THE FUTURE OF THE DA&DDP FARMS

Option 1: Continue the present programme on a commercial basis, while providing the services to settlers.

This would continue to cost the Treasury Rs.18 million per year.

Option 2: Privatize the farms on an individual basis.

This would result in settler development services being dropped.

Option 3: Corporatize the entire programme and proceed to privatize the whole operation by a combination of Private Placements and an offering on the Colombo Stock Exchange.

We recommend Option 3 for the following reasons:

- It will continue delivery of settler development services;
- It will eliminate public sector subsidies within two years;
- It would make the operation of DA&DDP commercially viable;

- It would result in more efficient use of Mahaweli resources;
- It would entitle the settlers to participate in the development and operation of the incorporated DA&DDP;
- It would facilitate profit motivation among DA&DDP employees;
- It would encourage the private sector to invest in developing the commercial livestock sector in the Mahaweli areas; and
- It would assist the raising of capital through the mechanism of the Colombo Stock Exchange.

11. EFFECT OF OPTION 3 ON SETTLER SERVICES

The range, availability and quality of services would be maintained. The participation by settlers in commercial livestock enterprises would increase.

Approximately Rs.18 million per year minimum charge would be spread over the 10,000 to 12,000 participating settler families in order to break even. This annual charge would increase over the next five years.

The prices of services would be increased gradually to minimize resistance from settlers and to maintain effective demand for services.

12. ACTION PLAN

The Preliminary Action Plan comprises the following steps which should be taken without delay in order to take advantage of the existing and indicative commitments for capital grants from the European Community and Asian Development Bank.

1. The MED/USAID Project Team presents the Action Plan to EIED and other MASL officials for the corporatization of the DA & DDP Programme and recommendations with regard to MLE.
2. EIED of MASL to review this plan and submit paper to the Board of Directors of MASL
3. MASL decides to accept or reject plan.

4. If decision is made to implement the plan, MASL to obtain Government of Sri Lanka approval to corporatize the DA & DDP programme. MASL to obtain decision on land tenure and transfer (i.e. freehold or leasehold) and sale or lease of other assets.
5. Following Government of Sri Lanka approval, MASL through EIED/MED to establish an external Implementation Team, with internal collaboration, to carry out the following within one to two years. The Team should comprise at least: Chairman, Representatives of MASL/EIED and MED, Consultant Dr. Jagath Peiris, Livestock Consultant, Investment and Financial Consultant, and Lawyer.
 - 5.1 Develop a 5 year plan to diversify and expand activities, computerize operations, reduce staff, charge for services and utilize untapped resources (e.g. tourist potential) designed to ensure commercial viability within two-three years.
 - 5.2 Obtain funding commitments from European Community, Asian Development Bank and MASL for the first two years. Explore possibility of obtaining privatization assistance from USAID.
 - 5.3 Incorporate company with MASL as the sole shareholder with the necessary legal provision to privatize the company in the future.
 - 5.4 Write into Memorandum and Articles of Association the objective of ensuring the continued availability of the present services to settlers.
 - 5.5 Appoint Board of Directors with participation from private sector mainly from the Livestock Industry e.g. MILCO, Nestle, Prima, John Kee's, Veterinary Pharmaceutical Industry, etc. etc.
 - 5.6 Select Management Team and staff for the company from within the DA&DDP or from outside. Staff recruitment per 5 year plan.
 - 5.7 Review, refine and agree the 5 year plan with Board and Management Team.
 - 5.8 Diversify and Expand activities to improve profitability. These activities should be chosen with interests of potential investors in the livestock industry in mind as well as commercial viability.
 - 5.9 Develop pricing policy to recover costs of services to settlers commencing with moderate fees and gradually increasing them over the two-three year period. Computerize and streamline operations.
 - 5.10 Utilize untapped resources (eg. tourist potential, ie. farm tours).

- 5.11 Commence privatization process in consultation with Investment Bankers and Brokers (re. share valuation, corporate finance requirements and method of privatization).
- 5.12 Establish 10% restriction on share ownership of the company (i.e. no company or group of related individuals to own more than 10% of the issued share capital of the company). Settler community should not be treated as a group of related individuals.
- 5.13 Establish share purchase and share ownership scheme for settlers and co-op societies dealing in livestock products.
- 5.14 Establish share ownership scheme for employees.
- 5.15 Merge MLE with new company if plan is approved by MLE shareholders. The financial package to MLE will have to be priced attractively.
- 5.16 Establish confidence in potential investors by giving publicity to restructuring activities.
- 5.17 Offer shares to private sector participants in the livestock industry eg. PRIMA, MILCO, Nestle, John Keells etc. on a private placement basis (maximum shareholding of this group to be restricted to 40% of the issued share capital of the company).
- 5.18 Offer shares to institutional investors and the public through the Colombo Stock Exchange to conclude the privatization process.
- 5.19 Make a Rights offering on the Colombo Stock Exchange to raise additional capital required for expansion and operations.

13. FINANCIAL IMPLICATIONS OF THE PROPOSED ACTION PLAN

The financial implications of the proposed action plan are that the newly incorporated DA&DDP will need Rs.20 million per year for the first two years to fund its activities and settler development services.

Preliminary discussions between Consultant Dr. Jagath Peiris and the European Community (EC) indicate that the EC may be willing to finance the DA&DDP throughout the Mahaweli areas (i.e. not limited to Mutuwela farm only, as in the past).

The decision to privatize will mean that the MASL could stop financing the programme after two years.

If the action plan is implemented within a two year period, we believe that the privatization process would bring in sale proceeds of approximately Rs.100 million in shares for the company.

Following privatization, the savings to the MASL over the medium term would be approximately Rs.20 - 25 million per year beginning in the third year. Further, the MASL would receive lease rentals in respect of the land and revenue relating to electricity and water services. The Government of Sri Lanka would benefit from taxation revenues on corporate profits and business turnover.

If the DA&DDP farms were to be privatized on an individual basis, the MASL would receive sale proceeds but the settler development services would be dropped. []

1. INTRODUCTION

At the request of the Mahaweli Authority of Sri Lanka (MASL), Employment Investment and Enterprise Development Division (EIED), under the USAID-assisted Mahaweli Enterprise Development Project (MED), the study was carried out during February 4-27, 1993 by Dr. Cedric Nott, Livestock Specialist and Mr. Hiran Perera, Financial Consultant.

The team acknowledges with sincere thanks the cooperation that it has received from the staff of the MASL/EIED, MED, the Draught Animal and Dairy Development Programme and Mahaweli Livestock Enterprises Limited.

2. BACKGROUND

The Draught Animal & Dairy Development Programme (DA&DDP) of the Mahaweli Authority of Sri Lanka (MASL) started in 1981 with the objective of making animal draught power for cultivation available to settlers as an alternative to tractor power which was becoming increasingly expensive at that time. Eleven Mahaweli Authority cattle and buffalo breeding farms were established as the sources of improved draught and dual-purpose draught-dairy stock. A milk collection, processing and marketing programme was started, together with supporting technical extension services, in order to provide a secure market for the milk from the settlers' dairy farming enterprises, as a source of income for settlers to use for purchase of the draught-dairy stock.

In 1987 the DA&DDP made a cooperation agreement with the Land Commissioner's Department to establish essentially the same draught-dairy cattle-buffalo and milk collection, processing and marketing programme under Phase II of the Kirindi Oya Irrigation and Settlement Project financed by the Asian Development Bank.

In 1990 a programme of diversification was started on the eleven cattle and buffalo breeding farms, and on the farm allocated in Kirindi Oya project, primarily to increase farm revenue to offset the cost of operating the DA&DDP. Poultry broiler, layer, pig and goat enterprises have been started. A secondary benefit of the diversification policy has been that settlers have been introduced to these four enterprises.

In 1990 also, the DA&DDP started field extension activities in System G.

A private broiler processing company, Mahaweli Livestock Enterprises Ltd. (MLE), was established at Thambuttegama in System H in 1989. The MLE plant is supplied by 236 settler contract growers of broilers. The DA&DDP is contracted to manage MLE.

3. OBJECTIVE OF STUDY

The objective of the study is to identify options for the future of the DA&DDP and the MLE taking account the objectives of ensuring the continued availability of the present services to settlers and the optimal use of Mahaweli resources which are presently assigned to them.

4. ACTIVITIES OF THE DRAUGHT ANIMAL & DAIRY DEVELOPMENT PROGRAMME AND THE MAHAWELI LIVESTOCK ENTERPRISES LTD., INCLUDING THEIR SERVICES TO MAHAWELI SETTLERS

4.1 Commercial Activities and Settler Development Services of the DA&DDP and MLE

The DA&DDP carries out commercial activities on the twelve farms and from those farms the DA&DDP delivers livestock development services to settlers. The MLE is a commercial broiler processing company located next to the DA&DDP Niraviya farm.

The activities and services can be listed as follows:

Commercial production activities and marketing of unprocessed products:

Cattle breeding, sale of improved crossbred breeding stock, milk, cull breeding stock

Buffalo breeding, sale of improved crossbred breeding stock, milk, cull breeding stock

Production of broiler chicks by MLE, sale of chicks, cull parent stock

Broiler production, sale of commercial broilers

Egg production, based on bought in chicken day-old chicks, sale of eggs, cull spent hens.

Pig multiplication, sale of weaner piglings for breeding or fattening

Pig fattening, sale of fattened pigs

Goat breeding, sale of crossbred meat-type and dairy-type breeding stock, cull breeding stock

Maize production for grain (40 acres only), sale of grain from DA&DDP to MLE

Egg marketing of DA&DDP farm eggs (dry-cleaned, ungraded)

Commercial processing activities and marketing of processed products:

Milk processing, sale of chilled milk, curd, yoghurt, ghee

Broiler processing (MLE), sale of frozen broilers

Pig processing (small scale), local marketing of own farm produced pork through DA&DDP sales outlets

Goat processing (small scale), local marketing of own farm produced mutton through DA&DDP sales outlets

Minor and experimental commercial activities:

Pineapple production

Hardwood timber (teak, hamila) production

Cashew production

Settler development services: production activities and marketing of unprocessed products:

Secure market for commercial cattle and buffalo milk production, establishment of milk collection (reception) centres, including civil works, equipment, training secretary-receiver, organization of primary cooperative, milk quantity and quality control, payments, provision of inputs: sale of upgraded cattle and buffalo to settlers, milk cans, minerals, feed (if required)

Breeding services for cattle and buffalo, natural mating (free loan of stud bulls), cattle Artificial Insemination and follow up pregnancy diagnosis

Fodder services, provision of fodder grasses and shrubs

Feed services, provision of compound feeds, minerals

Health care services, vaccination of cattle and buffalo against Haemorrhagic septicemia (HS) and Foot & Mouth Disease (FMD), establishment of Minor Treatment Centres (training volunteer operator, supply of materials, medicines and drugs, anthelmintics, sale receipts are returned to DA&DDP without commission for volunteer), access to DA&DDP veterinary surgeon, facilitated contact with services of Department of Animal Production & Health

Settler education and training in livestock and poultry husbandry

Credit facilitation, source of loans are commercial banks, technical support to loan beneficiary for milk production, administration of repayments to bank through deductions from milk sales

Broiler production, MLE contract grower scheme, 236 settler families: delivery of day old chicks, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision), collection of slaughter stock, accounts, administration and payments

Broiler production, DA&DDP scheme, 26 settler families in 1992, procurement of chicks from MLE, delivery of day old chicks, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision)

Egg production, delivery of pullets on cash basis, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision)

Pig production, delivery of weaner piglings on cash basis, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision)

Goat production, delivery of youngstock on cash basis, feed and other inputs, husbandry advice, monitoring, health care (vaccination, supervision)

Trained draught cattle bull production, delivery on cash basis of Khillari bull already trained for carting and cultivation. Also training of carter/ploughman.

Settler development services: processing activities and marketing of processed products:

Milk processing at four farms: Girandurukotte (System C), Damminna (System B), Niraviya (System H), and Tissamaharama (Kirindi Oya). Product range: buffalo and cattle curd, yoghurt, sterilized sweetened flavoured milk, ice cream, ghee, chilled milk.

4.2 **Assessment of the DA&DDP and MLE commercial activities and settler development services**

The assessment of the commercial activities is included in the review of the financial performance of the DA&DDP and the MLE, presented elsewhere. The individual livestock and poultry enterprises are not costed separately by DA&DDP which has prevented an assessment by enterprise in the time available.

A sample of key indicators of settler development services will be assessed.

4.2.1 Provision of animal draught power

The continuing importance of animal draught power in the Mahaweli areas is shown by the results of a survey carried out during the study period. A survey was made in System C of all settlers within one sub-unit within each of the three units where DA&DDP operates, viz. in Units 1, 2 & 3 out of the five units in System C. The returns from the 591 settlers show that 91% use animal draught power for the first ploughing for paddy and 9% use two-wheeled tractor power. More than half use a tractor for the second cultivation because it is quicker than animal draught power and timeliness is important.

The DA&DDP also operates in System H. System H has been settled for longer than System C, and two-wheeled tractors are more common there which suggests that the use of animal draught power varies with System. A random sample of 19 milk suppliers to two milk collection points in System H visited by the study team showed that 84% used a two-wheeled tractor and 16% used animal draught power for first ploughing for paddy. Note that this sample is biased in that it did not include settlers who did not supply milk to the collection point.

The original objective of the DA&DDP was to make animal draught power for cultivation available to settlers as an alternative to tractor power.

There is a total of about 1,575 adult breeding cattle and buffalo cows on the twelve DA&DDP farms. A total of 822 breeding heifers and young bulls were issued to settlers in 1992 which is within the range of annual offtake which can be expected reasonably under the conditions prevailing on the farms.

4.2.1 Secure market for commercial cattle and buffalo milk production

There are about 5,240 settler milk producers supplying the 53 milk collection centres established by the DA&DDP. The regular income from milk sales has benefitted settlers.

The collection points can accept an unlimited quantity of milk because private sector companies, viz. International Dairy Products Ltd. (main shareholder Nestles) and Milk Industries of Lanka Company Ltd. (MILCO), are buying the excess raw milk surplus to processing requirements.

4.2.2 Breeding services and upgrading of cattle and buffalo

A component of the DA&DDP is the upgrading of the cattle and buffalo population in the Mahaweli areas by making available the services of improved sires through provision of breeding services.¹ In 1992, there were 1,117 crossbred calves born, observed and recorded alive on settlers' landholdings and sired by DA&DDP stud bull services.

4.2.3 Health care services

Health care services include vaccination of cattle and buffalo against hemorrhagic septicemia (HS) and foot and mouth disease (FMD).

There has been excellent vaccination coverage in Systems B and H.

The number of vaccinations recorded for System B in 1990 and 1991 were 9,400 and 11,000, respectively, which corresponds closely with the total cattle and buffalo population of 11,000.

The number of vaccinations recorded for System H in 1990 and 1991 were 19,100 and 20,100, respectively, which corresponds closely with the total cattle and buffalo population of 20,000.

This shows not only the work of the DA&DDP but also the facility of carrying out a vaccination campaign in an area administered by the Mahaweli Authority. The level of coverage outside the Mahaweli administered areas would probably be less because the degree of cooperation of cattle and buffalo owners would be expected to be less.

The same comparison could not be made for Uda Walawe and Kirindi Oya because those vaccination figures included cattle and buffaloes in migratory herds outside the project areas.

¹ DA&DDP breeding services for cattle and buffaloes: Board & Lodging facilities (cows and heifers boarded on DA&DDP units until served by stud bull, service charge), Stud Bulls (provision of stud bull free to sedentary herd, available to herds nearby for service fee to stud bull keeper), Track Breeding (provision of stud bulls free to migratory herds, free service), and cattle Artificial Insemination (service charge includes pregnancy diagnosis).

4.2.4 Broiler, egg, pig and goat production services

The DA&DDP does not include the service of secure market for the products of commercial broiler, egg, pig and goat production. The Mahaweli Livestock Enterprises Ltd. (MLE), however, buys broilers from its 236 contract growers.

Settler producers are therefore vulnerable to the volatile and cyclical egg prices which prevail, and to over-production of fattened pigs. Under these circumstances, the DA&DDP has been appropriately cautious in issuing to settlers only a small quantity of broiler and layer chicks and weaner pigs because the outputs are all sold on the local market by the settlers themselves and the effective local market demand is unknown. The DA&DDP is willing to be a buyer of last resort in order to maintain settler confidence. So far the DA&DDP has only had to buy settlers' products once; that was in Uda Walawe and for only 300 broilers.

4.2.5 Trained draught cattle bull production

The programme for the production of trained draught Khillari cattle bulls, already trained for carting and ploughing, was begun only in 1992. Three trained bulls have been sold so far. Training takes about three months.

4.2.6 Participation by settlers in commercial livestock enterprises

An objective of the DA&DDP is to increase the number of settler families participating in commercial livestock and poultry production and thereby to provide additional income.

Approximately 10,000 to 12,000 settlers have benefitted from DA&DDP settler services during the ten-year period 1983-1992, and mostly by the cattle and buffalo components because the diversification activities began only three years ago in 1990.

Counting beneficiaries is not done as a matter of routine programme progress monitoring by the DA&DDP.

Moreover, the number of potential beneficiaries needs to be kept in perspective. The Mahaweli Livestock Enterprises Ltd. (MLE), a medium sized broiler processing plant (2,000 broilers per 8 hour day), to satisfy its market for broiler needs only about 300 contract grower out of more than the 30,000 settler families in System H.

One is therefore looking in the short term for hundreds, rather than thousands, of new participants in the diversification activities of broiler, egg, pig and goat production.

4.3 **Activities and Settler Services for Livestock Production Processing and Marketing being carried out by DA&DDP and MLE which are also being carried out by Private Suppliers in the Mahaweli Areas**

The DA&DDP operates in the context of private and government livestock services which support its commercial activities and settler development services.

4.3.1 **Marketing of unprocessed milk**

The private sector supports the settler service of secure market for milk. The raw milk at the Girandurukotte mini-dairy which is in excess of requirement for processing is bought by MILCO. The excess milk at Niraviya farm is bought by International Dairy Products Ltd. (main shareholder Nestles). One or other or both of these companies collect milk in the areas adjacent to the DA&DDP operational areas. For example, both Nestles and MILCO collect milk in Uda Walawe Right Bank, and DA&DDP collects milk in Uda Walawe Left Bank. Nestles collects milk from a wide area around Polonnaruwa to supply its condensary just outside the town.

DA&DDP, Nestles and MILCO all use the MILCO schedule of prices per litre for milk according to fat and solids-not-fat content.

The technical support services of DA&DDP are more comprehensive and better than those of Nestles and MILCO in the Mahaweli areas at present.

In other areas of Sri Lanka, both Nestles and MILCO have established milk collection centres similar to those established by DA&DDP. Because they are primarily milk processors, however, both these companies may perhaps give slightly more emphasis than DA&DDP to total milk volume procured, if necessary from many suppliers, and slightly less emphasis to increasing the productivity of cattle and buffaloes. Both companies place greater reliance than DA&DDP on DAPH veterinary and cattle A.I. services.

In the Upper Mahaweli area of Kotmale, the DA&DDP does not collect milk. A milk producer in Kotmale can sell either to the Nawalapitiya Multipurpose Cooperative Society or to the Swiss Cheese Company Ltd. (which sells its excess raw milk to Nestle Lanka Ltd.) or to tea boutiques in the locality. The quality of the cooperative's service is allegedly poor. The Swiss Cheese Company's collection points are located conveniently in the hilly terrain but the company collects in bulk, i.e. without individual milk quality testing and the related payment system.

4.3.2 Milk processing and marketing of processed milk products

The main private milk processors supporting commercial milk production in the Mahaweli areas are MILCO (supplying the Digana Milk Factory, Kandy, and Ambewela Milk Powder Factory, Nuwara Eliya); Nestle (International Dairy Products Ltd. supplying the condensary at Polonnaruwa, and Nestle Lanka Ltd. supplying the milk powder plant at Pannala, Kurunegala district); and Swiss Cheese Company (Pvt) Ltd. at Kotmale, Nuwara Eliya district.

The performance of the private plants, as measured by average daily throughput of milk which ranges from 12,000 to 70,000 litres/day, exceeds by far the 1,000 litres/day of the mini-dairy at Girandurukotte.

4.3.3 Marketing of live cattle and buffaloes

Private butchers or their agents buy surplus cattle and buffalo young stock and cull breeding stock and cull draught bulls from settlers. In general DA&DDP does not buy such animals.²

4.3.4 Supply of cattle and buffaloes

Cattle and buffalo multiplication and distribution are carried out by the [private] settlers themselves. The upgrading and breeding services are carried out mainly by DA&DDP.

In order to buy upgraded cattle and buffalo outside the Mahaweli areas, the settlers in Systems B, C and H have to travel to Polonnaruwa or elsewhere which is inconvenient and time-consuming.

4.3.5 Cattle artificial insemination service

The DA&DDP farms using cattle A.I. are generally outside the operating areas of the AI service of the Department of Animal Production & Health (DAPH).

4.3.6 Health care services

There is no private vaccination service for cattle and buffaloes; the DAPH gives the vaccinations against hemorrhagic septicaemia and foot and mouth disease.

² DA&DDP sometimes buys unimproved cattle and buffaloes in Uda Walawe and Kirindi Oya in part exchange for the supply of improved animals.

Alternative private suppliers of veterinary drugs and medicines are the medical pharmacists in the towns, located generally a long way from most milk producers and so time-consuming to buy from. DA&DDP is a cheaper source of drugs and medicines and they are prescribed by the DA&DDP veterinary surgeon, i.e. they are issued together with professional advice which is not given by the pharmacist.

The veterinary services provided by DAPH are dispersed widely in relation to the DA&DDP operational areas, and limited private practice is available from DAPH veterinarians only out of official hours. The DA&DDP has increased the density or proximity of health care services available to settlers.

4.3.7 Supply of fodder inputs

Settlers' neighbours are the usual source of forage planting material which is usually given free.

4.3.8 Supply of feed

Rice bran is widely available from private mills. The private provision of compound feed, almost entirely for poultry only, is through retail feed agents, usually for PRIMA feed (Ceylon Grain Elevators Ltd.).

Buying from DA&DDP is cheaper and less likely to be adulterated than buying the same compound feed from a private retail agent.

A new brand of poultry and livestock feeds, viz. Gold Coin (a Singaporean investor), is expected on the market shortly, and to give strong competition to PRIMA.

4.3.9 Farmer education and training

In general, there is no alternative private farmer education and training in the Mahaweli areas for cattle and buffalo husbandry.

Some farmer education and training in layer production may be given by agencies which supply chicks, e.g. in System B layer chicks are available from UNICEF, Mahaweli Agriculture & Rural Development Project, Mahaweli Economic Authority, and European Trust Fund.

The manufacturer of Prima feeds, Ceylon Grain Elevators Ltd., gives technical support to its buyers of poultry feed. This service may extend to some Mahaweli areas if the quantity sold justifies providing the support service to broiler and layer producers.

4.3.10 Supply of broiler chicks

The alternative private suppliers of broiler chicks to MLE in the Mahaweli areas would be sources in the Colombo area, e.g. Bairaha Farms, Christombu Farm, Prima Three Acre Farm and Prima Breeder Farm. At present, however, these broiler breeders do not supply chicks to the Mahaweli areas (excluding Kotmale) and a settler typically has no convenient source of supply.

The delivered cost, including transport, of alternative chicks would be higher than MLE chicks, supplied either direct or through DA&DDP, depending upon the particular location of the settler-buyer.

The alternative suppliers of chicks do not provide technical support to producers in the Mahaweli areas, compared with DA&DDP which does.

4.3.11 Broiler processing with contract growers

At present there are no private broiler processors with contract growers in the Mahaweli areas.

Bairaha Farms has applied to the Mahaweli Authority of Sri Lanka for land at Kotmale to establish a broiler hatchery to supply chicks to outgrowers. The broilers will be transported either to the Bairaha processing plant south-east of Colombo or to its new plant, Bairaha Norfolk Foods Ltd., a joint venture plant with Bernard Matthews of U.K. The application for the hatchery at Kotmale is pending.

MLE pays outgrowers by live weight of broilers. Bairaha pays by live weight of broilers and by feed conversion. The technical support services are similar. MLE supports its outgrowers to obtain a bank loan for the enterprise, if required. Bairaha requires an advance deposit for the full cost of one batch of chicks. Bairaha also operates a buy-back scheme where the agreement is to supply chicks only, but not other inputs, and a guaranteed market at an agreed price beforehand.

MLE outgrowers are entitled to and automatically receive shares in MLE, whereas Bairaha outgrowers do not have any such entitlement.

4.3.12 Supply of layer chicks and pullets

The alternative suppliers of layer chicks are either the Colombo area hatcheries, e.g. Prima Three Acre Farms, Christombu Farm, Shetna Poultry Farm, but which do not supply the Mahaweli areas (excluding Kotmale) directly at present; or the DAPH/NLDB hatchery, Central Poultry Research Station, Karandagolla, Kandy; or other agencies operating in the Mahaweli areas, e.g. in System B layer chicks are available from UNICEF, Mahaweli Agriculture & Rural Development Project, Mahaweli Economic Authority, and European Trust Fund.

The delivered cost of the chick is similar to the price from DA&DDP, which does not have its own layer hatchery, and after sales technical support services are generally less from alternative agencies.

The DA&DDP supplies 21-28 day-old pullets to settlers. Some agencies may supply pullets to settlers but hatcheries do not.

4.3.13 Marketing of eggs

The settlers who have received layer chicks from DA&DDP sell the eggs themselves in their immediate locality to neighbours, hotels and boutiques. At present (February 1993) eggs are being imported into the Mahaweli areas from outside production areas. DA&DDP does not market settlers' eggs.

4.3.14 Supply of weaner pigs

There are no private suppliers of weaner pigs of similar quality in the Mahaweli areas, not counting the settlers who have received pigs from DA&DDP since the diversification programme was started in 1990. Alternative sources of pigs originating from the DAPH/NLDP nucleus herd at Welisara, Gampaha district, would be located in Gampana, Colombo or Kalutara districts, i.e. alternative sources for Mahaweli settlers are distant and procurement would be time-consuming.

4.3.15 Supply of breeding goats

There are no private suppliers of upgraded crossbred meat-type or dairy-type breeding goats of similar quality in the Mahaweli areas, not counting the settlers who have received goats from DA&DDP since the diversification programme with goats was started in 1990-91. Alternative private sources would be located in Matale, Kandy and Nuwara Eliya, i.e. the alternative sources for Mahaweli settlers are distant and procurement would be time-consuming.

4.3.16 Marketing of goats and fattened pigs

Goats and fattened pigs are bought by local butchers or agents and may be exported from the Mahaweli areas. For instance, in Uda Walawe, agents buy goats and pigs for onward transportation to Colombo. DA&DDP does not buy goats and fattened pigs from settlers.

5. THE POTENTIAL FOR PRIVATE ENTERPRISES TO SUPPLY THE SERVICES TO SETTLERS PRESENTLY BEING PROVIDED BY THE DRAUGHT ANIMAL & DAIRY DEVELOPMENT PROGRAMME AND THE MAHAWELI LIVESTOCK ENTERPRISES LTD.

5.1 MLE Service to Settlers

The MLE service to settlers is contract growing of broilers. This service has been proposed by Bairaha Farms for Kotmale with 300 outgrowers for broilers and an application for land has been lodged with the Mahaweli Authority of Sri Lanka. Other private broiler processors could do the same. Whereas MLE outgrowers are entitled to and automatically acquire shares in MLE, outgrowers of Bairaha Farms will not be entitled to acquire shares in the company.

5.2 DA&DDP Services to Settlers

Services related to milk procurement and supporting production extension. Both MILCO and Nestles have the capacity to provide services similar to DA&DDP but whether either or both would provide the present DA&DDP range of services is unclear.

MILC) was taken over in mid-February 1993 and senior management is presently assessing what production support services it will give nationwide in addition to buying milk.

Nestles has delivered similar services to farmers in the past in Kurunegala, Anuradhapura and Polonaruwa districts, as a condition for operating in those districts. Nestles have proposed to the MASL/EIED to provide similar services to settlers in selected Mahaweli areas, except that cattle A.I. and health care services have not been included to avoid overlap and possible conflict with the Department of Animal Production & Health.

Both MILCO and Nestles are interested primarily in securing the quantity and quality of milk supplies for their processing plants. As commercial organizations they are likely to be most interested in dairy sector development production support services which relate to milk supplies. The same will be the case for other milk processors buying settlers' milk in the DA&DDP operational area, e.g. the Swiss Cheese Company (Pvt) Ltd. buys and processes milk in Kotmale.

None of the private buyers of cattle and buffalo milk have the capacity of DA&DDP to provide breed improvement services, i.e. to issue upgraded breeding stock, and the availability of stud bull and cattle A.I. services.

If the farms were sold or leased to entrepreneurs engaged in the meat trade, even with the condition that the cattle, buffalo and goat breed improvement services should be maintained, the farms would become holding grounds with only token activities and services for breed improvement. The poultry and pig enterprises would stop.

Private suppliers of upgraded crossbred meat-type and dairy-type goats can be found in Matale, Kandy and Nuwara Eliya districts.

Private suppliers of weaner pigs of similar quality to those issued by DA&DDP can be found in Gampaha, Colombo and Kalutara districts.

The larger private poultry hatcheries have the capacity to supply broiler and layer chicks to settlers in the Mahaweli areas and Kirindi Oya although they are not doing so directly at present. If the hatcheries were to supply chicks through agents, such as shops selling poultry feed, the supporting services would probably be less than those provided by DA&DDP until the volume of sales justified the hatchery providing such services.

The DA&DDP is willing to be the buyer of last resort for some of the products of settlers' livestock and poultry enterprises in order to maintain settler confidence. Private enterprises supplying inputs are unlikely to be willing to be buyers of last resort of products.

Private pharmacists have the capacity to supply the same drugs and medicines as DA&DDP, but slightly more expensively, without advice from a veterinary surgeon on their use, and possibly less conveniently, depending on the distance of the settler from the town pharmacist.

Private shopkeepers have the capacity to supply the same poultry feeds as DA&DDP but slightly more expensively.

Private enterprises in the Mahaweli areas are not engaged in commercial production of planting material from improved grasses and fodder shrubs.

There is private practice by DAPH veterinarians located in the ranges covering the DA&DDP operational area but this cadre does not have the capacity to meet all the health care service requirements of the DA&DDP because the veterinarians are too few and are dispersed widely.

6. **THE CAPABILITIES IN TERMS OF CROP AND LIVESTOCK DEVELOPMENT OF THE MAHAWELI RESOURCES PRESENTLY ASSIGNED TO THE DRAUGHT ANIMAL & DAIRY DEVELOPMENT PROGRAMME AND THE MAHAWELI LIVESTOCK ENTERPRISES LTD.**

6.1 **Commercial Activities**

The commercial milk processing activities at Damminna (System B), Girandurukotte (System C), Niraviya (System H), Tissamaharama (Kirindi Oya) could be expanded by developing new collection points and routes to extract more milk. This is planned already for System C, Units 4 and 5. This expansion would support increased livestock development.

6.2 **Irrigable and Potentially Irrigable Land**

The main constraints affecting potential crop and livestock production and development on the land resources of DA&DDP and MLE are: low and erratic annual rainfall, an annual drought period, unavailability of water all year for irrigation, and poor soil quality.

Out of the twelve DA&DDP farms, the locations of irrigated or potentially irrigable land are as follows:

System B: Damminna (135 ac): say 50 acres potential (water could be extracted from tank on boundary).

System B: Mutuwela (1200 ac): say 100 acres potential (water could be supplied from paddy water canal near boundary).

System H: Niraviya (459 ac): 5 acres pasture irrigated now from paddy water canal.

System H: Niraviya (459 ac): say 50-100 acres potential (water by lift irrigation from the two perennial rivers bordering two of the three sides of the property, if justified financially).

Uda Walawe: Thunkama (70 ac): 61 acres pasture and vegetable crops for seed irrigated now from well next to very large perennial tank. Farm located on shoreline.

Uda Walawe: Mahagama (70 ac): part of pasture area irrigated now from well next to very large perennial tank; potential to irrigate remaining area. Farm located on shoreline.

The potentially irrigable land could be used either for livestock development by planting fodder crops and giving supplementary irrigation, or for irrigated cash crop development.

The results of dry zone fodder crop research should be reviewed and trials may be carried out with potentially suitable green fodder crops such as berseem, lucerne, sorghum, cowpea, millet, maize, sorghum x sudan grass hybrid. Grain maize is already being grown at Sorabora (System C) and Niraviya (System H). The potentially high-yielding grasses - Bracharia species, Guinea and Napier NB-21 - are being grown already on the farms. Rainfed *Stylosanthes hamata* could be tried.

The cattle and buffalo production could be increased by buying in feed, e.g. molasses from the sugar cane plant in Uda Walawe.

A thorough marketing study is required before diversifying into unusual livestock or crops. Meanwhile chillies can be tried.

7. FINANCIAL PERFORMANCE OF THE DRAUGHT ANIMAL & DAIRY DEVELOPMENT PROGRAMME AND THE MAHAWELI LIVESTOCK ENTERPRISES LTD.

7.1 Draught Animal & Dairy Development Programme

	Years ended 31st December			Cumulative since inception in 1981 rupees ³
	1990 Actual Rupees	1991 Actual Rupees	1992 Estimate Rupees	
Total Investment (Capital Grants and Subsidies)				239,548,825
Represented by:				
Farm Assets (including land at original valuation)				108,000,000
Cumulative Deficit Representing Expenditure on Services to Settlers				131,548,825
				239,548,525
Reported Profit/(Loss)	(226,889) ⁴	8,916,477	10,000,000	(2,465,813)
Services and Other General Expenditure Capitalised	(14,467,000)	(26,540,170)	(28,000,000)	(129,083,012)
Total Deficit	(14,693,899)	(17,623,693)	(18,000,000)	(131,548,825)

7.1.1 Total investment

Since inception in 1981, the MASL, with some support from International Donor Agencies, has invested a total of Rs.239 million in the DA & DDP. This investment is at present represented by Farm assets of Rs.108 million, which include Land (at original valuation of forest land plus actual development expenditure) and other Fixed and net Current Assets at approximately current values. The Land Value does not reflect any appreciation that has taken place as a result of the development which has taken place in the last 11 years.

³ Actual as at 31 December 1991 PLUS Estimate for 1992. (see notes to Financial Summaries).

⁴ Per Working Account 31 December 1990 PLUS Adjustment in Balance Sheet 31 December 1991. (see notes to Financial Summaries).

The difference between the Total Investment of Rs 239 million and the Assets at Valuation of Rs.108 million represents the Cumulative Deficit of Rs.131 million which has mostly been spent on Services to settlers in the last 11 years.

The benefits of this expenditure cannot be quantified in monetary terms but some of the intangible benefits are as follows:

- Promotion of livestock production among approximately 10,000 settler families and the resulting economic benefits both to the settler communities and the country.
- The value added benefit of upgrading animals.
- Prevention of disease.
- Reduction of mortality.
- Technological transfer to settler families.
- Reduction of malnutrition as a result of increased consumption of milk, eggs, and animal products.
- Use of animal waste products for organic fertilizers.
- Return to Draught Power resulting in reduction in fuel consumption.
- Environmental benefits arising from Integrated Crop and Livestock Farming.

7.1.2 Operating results

The present accounting treatment of the DA & DDP is to charge 25% of service expenditure against revenue and capitalize the balance 75%. Appreciation in the value of livestock have also been taken into account in calculating operating profits or losses.

According to this basis of Accounting, Operating Profits and Losses of the last 3 years, and the cumulative loss since inception, have been reported as follows:

31 December 1990	Actual	Rs.(226,889)	Loss
31 December 1991	Actual	Rs. 8,916,477	Profit
31 December 1992	Estimate	Rs. 10,000,000	Profit
Cumulative since 1981		Rs.(2,465,813)	Loss

However if the amount capitalized in respect of service and other expenditure were taken into account, the total deficit in revenue would be as follows:

31 December 1990	Actual	Rs.(14,693,899)	Deficit
31 December 1991	Actual	Rs.(17,623,693)	Deficit
31 December 1992	Estimated	Rs.(18,000,000)	Deficit
Cumulative since 1981		Rs.(131,548,825)	Deficit

The Cumulative Deficit of Rs. 131,548,825 as mentioned earlier represents expenditure incurred on providing services to settlers over a 11 year period from 1981 to 1992.

The programme has shown reduced operating losses and increasing operating profits in the last few years. This improvement has been the result of diversification of activities into other areas of livestock and crop development.

Operating Profit for 1992 is estimated at 10 million rupees versus a profit of Rs.8.9 million in 1991. However, due to service expenditure to settlers of approximately Rs.28 million in 1992 the total deficit for 1992 is estimated at Rs.18 million.

7.1.3 Forecast for 1993 and beyond

The results for 1993 are expected to show some improvement with operating profits rising to Rs.11 to 12 million Service expenditure will remain at present levels.

If the programme continues in its present form, we project public sector support of approximately Rs.16 to 18 million annually over the next few years, to finance this annual deficit arising from the expenditure on services to settlers. Additionally, capital expenditure will have to be funded. We estimate that approximately Rs.20 to 25 million per annum will be required in public sector subsidies and capital grants to fund this programme.

	YEARS ENDED 31ST MARCH			CUMULATIVE SINCE INCEPTION (1989) TO MARCH 31 1993 (ACTUAL & ESTIMATED)
	1991 Actual Rupees	1992 Actual Rupees	1993 Estimated Rupees	
Reported Pre- Tax Profit/(Loss)	(1,309,758)	4,389,851	6,000,000	5,907,126
Total Capital Employed	26,959,988	30,898,344	33,000,000	33,000,000
Average Capital Employed		28,929,166	31,949,172	
Pre-Tax Return on Average Capital Employed	Nil	15.17%	18.78%	

7.2.1 Total investment

Mahaweli Livestock Enterprises Limited (MLE) was incorporated in 1989 with an initial capital of Rs.26 million consisting of Rs.5 million in preferred capital and Rs.21 million in equity capital.

Since incorporation a share purchase and share ownership scheme has been introduced for the settler farmers who participate in the poultry broiler contract outgrower programme. At present, the share ownership is as follows:

Preference Shares

Netherlands Development Finance Company Rs. 5,390,000

Ordinary Shares

Mahaweli Authority of Sri Lanka	Rs.10,000,000	44.5%
National Development Bank	Rs. 6,000,000	26.7%
Netherlands Development Finance Company	Rs. 5,014,740	22.3%
Settler Farmers	Rs. 1,461,453	6.5%
	Rs.22,476,193	100.0%

Total capital employed (including a long term loan) at 31st March 1993 is estimated to be about Rs.33 million.

7.2.2 Operating results

Operating results in the last years as follows:

31st March 1990	Actual	Rs.(2,658,161)	Loss
31st March 1991	Actual	Rs.(1,309,758)	Loss
31st March 1992	Actual	Rs. 4,389,851	Profit
31st March 1993	Estimate	Rs. 6,000,000	Profit
Cumulative since incorporation (1989)		Rs. 5,907,126	

7.2.3 Forecast for 1993 and beyond

For the year ended 31 March 1992, the pre-tax return on average capital employed was 15.17%. In 1993, it is estimated that this would improve to a healthy 18.78%.⁵ This company is at present commercially viable and could continue to operate and expand in the future without any public sector subsidies.

8. OPTIONS FOR THE MAHAWELI AUTHORITY OF SRI LANKA TO PURSUE WITH REGARD TO THE FUTURE OF THE DRAUGHT ANIMAL & DAIRY DEVELOPMENT PROGRAMME AND THE MAHAWELI LIVESTOCK ENTERPRISES LTD. IN ORDER TO ENSURE THE CONTINUED AVAILABILITY OF SERVICES TO THE SETTLERS AND THE OPTIMUM USE OF MAHAWELI RESOURCES

In our opinion, the options available to the Mahaweli Authority of Sri Lanka with regard to the DA & DDP and the MLE are:

8.1 Options for DA&DDP

8.1.1 Option 1: Continue with the present programme on a commercial basis, while providing the services to settlers

- A fee based system to be introduced for providing services to settlers, initially commencing with fairly low fees and gradually increasing them to profitable levels over a 2 - 3 year period.

⁵ Compared with the prevailing interest rate on Government Treasury Bills of approximately 18% per annum.

- The activities to be further diversified. A further expansion to take place with regard to milk collection and processing, poultry, pigs, goats, and crops thereby increasing the profitability of the entire programme.

The disadvantage with this option is that the MASL will have to finance this programme for a further period until a break-even point is arrived at. Further expansion would require increased capital which would place an additional burden on MASL resources. We are also of the opinion that a continuation in the Government sector would not provide the environment for profit motivation of employees of DA&DDP and the required fee based system and financial incentives.

8.1.2 Option 2: Privatize the farms on an individual basis

Our discussions with MILCO revealed that they may be interested in the milk processing operation of some farms on a selective basis. They would not be interested in the other activities i.e. poultry, pigs, cattle breeding etc. The management of Nestle indicated that they would not be interested in managing the farms.

Any prospective buyer of these farms encompassing all of the present activities would therefore be private entrepreneurs. Bids could be invited from the private sector for these farms if they were properly packaged, taking into account the following considerations:

- Price to be reasonable relative to expected financial returns.
- Terms of payment to be attractive bearing in mind that these entrepreneurs may have to invest additional capital in these farms. This may be facilitated by arranging financing packages through lending institutions.
- Complete freedom to absorb or not absorb all members of staff.
- Initial period of training to new owners to be given by DA & DDP staff.

The advantages are that MASL will no longer have to fund the activities of the DA & DDP. The responsibility of ensuring that these farms operate on a profitable basis would be in the hands of the private sector.

A significant and major disadvantage of this option is that essential services to settlers may be dropped. There will no longer be a commercially justifiable reason to continue these services to settlers and it would then be necessary for the Government of Sri Lanka to provide these services funded by public sector subsidies thus placing an additional strain on Government resources.

If this option is chosen, the Government of Sri Lanka will have to continue delivering the settler development services, either through the DA&DDP or Department of Animal Production and Health, and this expenditure would have to be funded by the Treasury.

8.1.3 Option 3: Corporatize the entire program and proceed to privatize the whole operation by a combination of Private Placements and an offering on the Colombo Stock Exchange

In our opinion, the most suitable method of commercialization of the DA & DDP program is to corporatize the whole program, initially as a parastatal corporation with a definite plan to privatize the entire company within a specified period.

During the process of corporatization the financial feasibility of forming two or more separate companies, clustering the farms by geographical area, should be examined. This may be of special importance if there are any Board of Investment incentives offered for dairy development in Sri Lanka.

We recommend that the corporatization of the whole programme should be done in the following manner to ensure continuation of services to settlers, participation of the private sector, increased commercial viability and greater efficiency in utilization of Mahaweli resources.

Continuation of Services to Settlers

Initially the MASL will be the sole shareholder. It will be able to ensure that services to settlers are continued by writing this object as a clause in the Memorandum and Articles of Association and by exercising its influence through the Board of Directors.

The privatization process should involve offering shares to settlers and the related farmer co-operative societies

All settlers and co-operative societies either buying a service from the company or selling a product to the company should be entitled and encouraged to buy shares of the company.

A charge for the shares can be either built into the price of supplies eg. cost of a goat or deducted from the sale price of a product eg. milk.

A register of settlers can be maintained, issued an identification number and shares allotted depending on the value purchased from or sold to the corporation. The greater the value purchased or sold, the greater the number of shares issued and thus greater the potential dividends to the settler.

The settler community will be able to exercise some influence on the corporation through this mechanism.

Increased participation of the private sector

Shares should be offered on a private placement basis to all private sector participants in the livestock industry in return for supply guarantees. A policy of restricting maximum ownership by a company or a group of related individuals to 10% of the issued share capital of the company will ensure that share ownership is widely held by private sector participants. Shares could be offered to MILCO, Nestle, John Keells and other participants. MILCO has already expressed an interest and if they were persuaded to invest in this company we believe Nestle would as well. This would lead to interest among other participants. This investment should be offered to both local and foreign investors.

Commercial viability and more efficient utilization of Mahaweli resources

Immediate steps should be taken to improve the commercial viability of the operation. The most important steps are:

1. Further diversify and expand the profitable activities such as milk collection and processing, poultry, goat and pig breeding.
2. Commence charging for services, modestly at first gradually increasing them to break-even levels and beyond.
3. Explore untapped resources. Some of these farms have untapped resources eg. tourist potential. By using the water-front properties on these farms, cottages could be built and offered to local tourists on Guided Farm Tours. This may be of special interest to families with school going children and would generate revenue while raising awareness among the public on dairy and livestock development. It would also be of benefit to promote the products of the corporation since a visit to the farm would cultivate some loyalty to the product.
4. Offer shares to employees. The privatization process should involve distribution of some shares to the employees of the company.
5. Strengthen Management Team. The diversification of the activities and the resulting additional revenue has been due to the enthusiasm and efforts of the present Consultant, Dr. Jagath Peiris. However, considerable enhancement is necessary in building an efficient Management Team providing support to the present Consultant and to facilitate succession in the future.

6. Computerize records and reduce staff. We believe that by computerizing records and streamlining operations, substantial staff reductions are achievable.

Public Offering

Finally the corporation should offer shares to the public through the Colombo Stock Exchange. The timing of the offering must depend on market conditions and the evidence of a definite strategy to operate on a profitable basis. This investment should be offered to both local and foreign investors.

Public Sector Subsidies

Until privatization is complete, there would be some dependence on Public Sector and EEC capital grants and subsidies. The raising of additional capital from the private sector, the settlers and finally the public would eliminate the need for these subsidies. The sale of MASL shares to the public would raise additional revenues to the public sector.

8.1.4 **Recommendation**

We recommend corporatizing the entire programme outlined in Option 3. We cannot guarantee improvement of services to settlers under this system. Services are most likely to continue if there was wide share ownership with the settlers themselves owning shares. In the final analysis, apart from legal commitments, the continuation of settler services would to a large extent depend on the commercial viability of the entire operation.

8.2 **Options for MLE**

Mahaweli Livestock Enterprises Limited is an existing corporation which is currently operating on a profitable basis. The profitability of this operation is expected to improve in the future.

In our opinion, the options available are:

Option 1: Continue as present or

Option 2: Merge with the new corporation encompassing the DA & DDP programme. This will require agreement by the existing shareholders.

Recommendation

The MLE is now a profitable company whereas the DA & DDP is presently in a deficit position. We are of the opinion that the corporatization and restructuring of DA & DDP should take place first and the merger with the MLE (if acceptable to the MLE shareholders) should take place prior to the privatization.

9. **ASSESS THE EFFECT THE SUGGESTED OPTIONS MIGHT HAVE WITH REGARD TO THE QUALITY AND PRICES CHARGED TO SETTLERS FOR THE VARIOUS SERVICES**

9.1 **OPTION 1: Continue with the present programme on a commercial basis, while providing services to settlers**

The quality of services would remain unchanged but the effect of increasing prices charged to settlers for various services might mean that the effective demand for those services would fall and the participation of settlers in that livestock or poultry enterprise might fall also. At the same time, the existence of competitors for some services, e.g. secure market for milk, could result in milk suppliers defecting to competing buyers.

9.2 **OPTION 2: Privatize the DA&DDP farms on an individual basis**

The range, availability and quality of settler development services would be reduced. The prices of services would increase. The farms could become simply commercial mixed agricultural/ horticultural and livestock/ poultry production units with token services to settlers.

9.3 **OPTION 3: Corporatize the DA&DDP and proceed to privatize the whole operation by a combination of Private Placements and an offering on the Colombo Stock Exchange**

The range, availability and quality of settler development services would be maintained, but an improvement in services cannot be guaranteed. The participation by settlers in commercial livestock enterprises would increase.

Approximately Rs.18 million per year minimum charge would be spread over the 10,000 to 12,000 participating settler families in order to break even. This annual charge would increase over the next five years.

The prices of services would be increased gradually to minimize resistance from settlers and to maintain effective demand for services.

10. **PRELIMINARY ACTION PLAN**

The Preliminary Action Plan comprises the following steps which should be taken without delay in order to take advantage of the existing and indicative commitments for capital grants from the European Community and Asian Development Bank.

1. The MED/USAID Project Team presents the Action Plan to MASL officials for the corporatization of the DA & DDP Programme and recommendations with regard to MLE.
2. EIED of MASL to review this plan and discuss it with the Board of Directors of MLE.
3. EIED decides to accept or reject plan.
4. If decision is made to implement the plan, EIED to obtain Government of Sri Lanka approval to corporatize the DA & DDP programme. EIED to obtain decision on land tenure and transfer (i.e. freehold or leasehold) and sale or lease of other assets.
5. Following Government of Sri Lanka approval, EIED/MED to establish an external Implementation Team, with internal collaboration, to carry out the following within one to two years. The Team should comprise at least: Chairman, Representatives of MASL/EIED and MED, Consultant Dr. Jagath Peiris, Livestock Consultant, Investment and Financial Consultant, and Lawyer.
 - 5.1 Develop a 5 year plan to diversify and expand activities, computerize operations, reduce staff, charge for services and utilize untapped resources (e.g. tourist potential) designed to ensure commercial viability within two-three years.
 - 5.2 Obtain funding commitments from European Community, Asian Development Bank and MASL for the first two years. Explore possibility of obtaining privatization assistance from USAID.
 - 5.3 Incorporate company with MASL as the sole shareholder with the necessary legal provision to privatize the company in the future.
 - 5.4 Write into Memorandum and Articles of Association the objective of ensuring the continued availability of the present services to settlers.
 - 5.5 Appoint Board of Directors with participation from private sector mainly from the Livestock Industry e.g. MILCO, Nestle, Prima, John Keels, Veterinary Pharmaceutical Industry, etc. etc.
 - 5.6 Select Management Team and staff for the company from within the DA&DDP or from outside. Staff recruitment per 5 year plan.
 - 5.7 Review, refine and agree the 5 year plan with Board and Management Team.

- 5.8 Diversify and Expand activities to improve profitability. These activities should be chosen with interests of potential investors in the livestock industry in mind as well as commercial viability.
- 5.9 Develop pricing policy to recover costs of services to settlers commencing with moderate fees and gradually increasing them over the two-three year period. Computerize and streamline operations.
- 5.10 Utilize untapped resources (eg. tourist potential, ie. farm tours).
- 5.11 Commence privatization process in consultation with Investment Bankers and Brokers (re. share valuation, corporate finance requirements and method of privatization).
- 5.12 Establish 10% restriction on share ownership of the company (i.e. no company or group of related individuals to own more than 10% of the issued share capital of the company). Settler community should not be treated as a group of related individuals.
- 5.13 Establish share purchase and share ownership scheme for settlers and co-op societies dealing in livestock products.
- 5.14 Establish share ownership scheme for employees.
- 5.15 Merge MLE with new company if plan is approved by MLE shareholders. The financial package to MLE will have to be priced attractively.
- 5.16 Establish confidence in potential investors by giving publicity to restructuring activities.
- 5.17 Offer shares to private sector participants in the livestock industry eg. PRIMA, MILCO, Nestle, John Keells etc. on a private placement basis (maximum shareholding of this group to be restricted to 40% of the issued share capital of the company).
- 5.18 Offer shares to institutional investors and the public through the Colombo Stock Exchange to conclude the privatization process.
- 5.19 Make a Rights offering on the Colombo Stock Exchange to raise additional capital required for expansion and operations.

11. FINANCIAL IMPLICATIONS OF THE PROPOSED ACTION PLAN

The financial implications of the proposed action plan are that the newly incorporated DA&DDP will need Rs.20 million per year for the first two years to fund its activities and settler development services.

Preliminary discussions between Consultant Dr. Jagath Peiris and the European Community (EC) indicate that the EC may be willing to finance the DA&DDP throughout the Mahaweli areas (i.e. not limited to Mutuwela farm only, as in the past).

The decision to privatize will mean that the MASL could stop financing the programme after two years.

If the action plan is implemented within a two year period, we believe that the privatization process would bring in sale proceeds of approximately Rs.100 million in shares for the company.

Following privatization, the savings to the MASL over the medium term would be approximately Rs.20 - 25 million per year beginning in the third year. Further, the MASL would receive lease rentals in respect of the land and revenue relating to electricity and water services. The Government of Sri Lanka would benefit from taxation revenues on corporate profits and business turnover.

If the DA&DDP farms were to be privatized on an individual basis, the MASL would receive sale proceeds but the settler development services would be dropped. []

SUPPLY OF IMPROVED BREEDING CATTLE AND BUFFALOES TO SETTLERS IN 1992

Farm Name	Farm Size acres	Herd Size Breeding Cows only Nos.	Issued (1) Nos.	Born (2) Nos.	Total Supplied Nos.
<u>System A</u>					
Kantalai	2845	520 Catt	55	NApp	55
<u>System B</u>					
Damminna	135	45 Catt	28	147	175
Siddhapura	1820	145 Catt	24	NApp	24
Mutuwela	1200	130 Buff	10	NApp	10
<u>System C</u>					
Girandurukotte	1075	170 Catt) 15 Buff)	440	400	840
Sorabora	800	210 Catt	0	NApp	0
<u>System H</u>					
Niraviya	459	165 Catt	110	326	436
Kalankuttiya	85	65 Buff	0	NApp	0
<u>Uda Walawe</u>					
Thunkama	70	[6 Catt](3) 25 Buff	0	19	19
Mahagama	70	65 Buff	31	NApp	31
<u>Kirindi Oya</u>					
Tissamahrama	400	[1 Catt](3) 20 Buff)114) 10)126))250)
<u>Upper Mahaweli</u>					
Kotmale	5	None	NApp	NApp	NApp
<u>System G</u>					
Bakamuna	None	None	NApp	No calves born yet	0
<u>System L</u>					
Weli Oya	10	None	NApp	99	99
Sub-Total		1255 Catt			
Sub-Total		320 Buff			
TOTAL	8974	1575 C+B	822	1117	1939

(1) Issue of improved breeding cattle and buffaloes to settlers.

(2) Improved crossbred calves born and recorded alive on settlers' landholdings and sired by DA&DDP stud bulls

(3) Unimproved adult breeding females bought in from settlers in part exchange for issue of upgraded breeding cattle heifers (2-4 years old).

NApp = Not Applicable, i.e. activity or service is not being undertaken at that location

Table 2

**ISSUE OF IMPROVED BREEDING CATTLE AND BUFFALOES TO SETTLERS IN
1990, 1991 AND 1992**

Farm Name	Farm Size acres	Herd Size Breeding Cows only Nos.(2)	Issued 1990 (1) Nos.	Issued 1991 (1) Nos.	Issued 1992 (1) Nos.	Total Issued 1990-2 Nos.
<u>System A</u>						
Kantalai	2845	520 Catt	8	7	55	70
<u>System B</u>						
Dammanna	135	45 Catt	50	40	28	118
Siddhapura	1820	145 Catt	66	12	24	102
Munuweia	1200	130 Buff	0	25	10	35
<u>System C</u>						
Giran- durukotte	1075	170 Catt 15 Buff	526 0	462 0	440 0	1428 0
Sorabora	800	210 Catt	0	0	0	0
<u>System H</u>						
Niraviya	459	165 Catt	120	41	110	271
Kalankuttiya	85	65 Buff	14	7	0	21
<u>Uda Walawe</u>						
Thunkama	70	[6 Catt](3) 25 Buff	23 0	6 5	0 0	29 5
Mahagama	70	65 Buff	20	24	31	75
<u>Kirindi Oya</u>						
Tissamaharama	400	[1 Catt](3) 20 Buff	106 0	210 0	114 10	430 10
<u>Upper Mahaweli</u>						
Kotmale	5	None	NApp	NApp	NApp	NApp
<u>System G</u>						
Bakamuna	None	None	NApp	NApp	NApp	NApp
<u>System L</u>						
Weli Oya	10	None	NApp	NApp	NApp	NApp
Sub-Total		1255 Catt	899	778	771	2448
Sub-Total		320 Buff	34	61	51	146
TOTAL	8974	1575 C.+B	933	839	822	2594

(1) Issue of improved breeding cattle and buffaloes to settlers.

(2) Number of adult breeding cows as at February 1993.

(3) Unimproved adult breeding females bought in from settlers in part exchange for issue of upgraded breeding cattle heifers (2-4 years old).

NApp = Not Applicable, i.e. activity or service is not being undertaken at that location.

MILK PROCESSING AND MARKETING ACTIVITIES IN 1992

<u>Farm Name</u>	<u>Suppliers (Nos.)</u>	<u>Producers' Societies (Nos.)</u>	<u>Processing & DA&DDP sales</u>	<u>Buyer of excess raw milk</u>
<u>System A</u> Kantalai	NApp	NApp	NApp	NApp
<u>System B</u> Damminna	498	6	Catt curd	IDPL (Nestle)
Siddhapura Mutuwela	Farm Farm	NApp NApp	NApp Buff curd	IDPL IDPL
<u>System C</u> Girandurukotte	3375	22	Buff curd Yoghurt Sterilized flavoured milk, Ghee Ice cream NApp	MILCO
Sorabora	NApp(1)	NApp	NApp	NApp
<u>System H</u> Niraviya	1309	21	Buff curd Yoghurt, Ghee NApp	IDPL (Nestle) NApp
Kalankuttiya	NApp(2)	NApp	NApp	NApp
<u>Uda Walawe</u> Thunkama	Farm	NApp	Buff curd Yoghurt	MILCO
Mahagama	Farm	NApp	Buff curd	NApp
<u>Kirindi Ova</u> Tissamaharama	58	4	Buff curd Yoghurt	Nestle (alternate MILCO)
<u>Upper Mahaweli</u> Kotmale	NApp	NApp	NApp	NApp
<u>System G</u> Bakamuna	NApp	NApp	NApp	NApp
<u>System L</u> Wei Oya	NApp	NApp	NApp	NApp
TOTAL	5240	53	—	—

- (1) No cows are milked on Sorabora division. Lactating cows are transferred into the milking herd at Girandurukotte.
(2) None in 1992. Milk is being produced on farm in 1993.
NApp = Not Applicable, i.e. activity or service is not being undertaken at that location

MILK PRODUCTION AND COLLECTION ACTIVITIES IN 1992

Farm Name	Milk produced on farm litres '000	Milk received from settlers litres '000	Total milk collected litres '000
<u>System A</u>			
Kantalai	NApp	NApp	NApp
<u>System B</u>			
Damminna	4,625	121,801	126,426
Siddhapura	9,845	NApp	9,845
Mutuwela	14,403	NApp	14,403
<u>System C</u>			
Girandurukotte	29,167	482,035	511,202
Sorabora	11,109	NApp	11,109
<u>System H</u>			
Niraviya	60,603	590,298	650,901
Kalankuttiya	None(1)	NApp	NApp
<u>Uda Walawe</u>			
Thunkama	21,716	NApp	21,716
Mahagama	31,049	NApp	31,049
<u>Kirindi Oya</u>			
Tissamahrama	3,726	72,044	75,770
<u>Upper Mahaweli</u>			
Kotmale	NApp	NApp	NApp
<u>System G</u>			
Bakamuna	NApp	NApp	NApp
<u>System L</u>			
Weli Oya	NApp	NApp	NApp
TOTAL	186,243	1,266,177	1,452,420

(1) None in 1992. Milk is being produced on farm in 1993.
 NApp = Not Applicable, i.e. activity or service is not being undertaken at that location

CATTLE AND BUFFALO BREED IMPROVEMENT (UPGRADING) PROGRAMME

Farm Name		Cumulative 1983-1988 Nos.	1989 Nos.	1990 Nos.	1991 Nos.	1992 Nos.	Total Nos.
<u>System A</u>							
Kantalai	On Farm (1)	1291	326	354	373	354	2698
	In Field(2)	NApp	NApp	NApp	NApp	NApp	NApp
<u>System B</u>							
Damminna							
Sidhapura							
Mutuwela	On Farm	1451	329	323	220	254	2577
	In Field	800	279	140	182	147	1548
<u>System C</u>							
Girandurukotte							
Sorabora	On Farm	1356	503	359	407	349	2974
	In Field	1074	314	497	441	400	2726
<u>System H</u>							
Niraviya							
Kalankuttiya	On Farm	511	129	121	140	122	1023
	In Field	2317	239	457	488	326	3827
<u>Uda Walawe</u>							
Thunkama							
Mahagama	On Farm	NApp	NApp	NApp	82	87	169
	In Field	NApp	NApp	NApp	19	124	143
<u>Kirindi Oya</u>							
Tissamahrama							
	On Farm	NApp	NApp	10	76	12	98
	In Field	NApp	NApp	NApp	210	126	336
<u>Upper Mahaweli</u>							
Kotmale							
	On Farm	NApp	NApp	NApp	NApp	NApp	NApp
	In Field	NApp	NApp	NApp	NApp	NApp(3)	NApp
<u>System G</u>							
Bakamuna							
	On Farm	NApp	NApp	NApp	NApp	NApp	NApp
	In Field	NApp	NApp	NApp	NApp	NApp(3)	NApp
<u>System L</u>							
Weli Oya							
	On Farm	NApp	NApp	NApp	NApp	NApp	NApp
	In Field	NApp	NApp	NApp	NApp	99	99
TOTAL UPGRADED CATTLE & BUFFALO ON FARM & IN FIELD							18,218

- (1) On Farm: Upgraded crossbred or purebred calves sired by selected stud bulls and born on DA&DDP farms
(2) In Field: Crossbred calves born on settlers' landholdings and sired by DA&DDP stud bulls
(3) In Field upgrading programme started in 1992 but no births yet (February 1993)
NApp = Not Applicable, i.e. activity or service is not being undertaken at that location

Table 6

ANIMAL HEALTH ACTIVITIES: VACCINATIONS AND MINOR TREATMENT CENTRES

Farm Name	Catt & Buff Population 1990 Nos.	Vaccin.	Vaccin.	Vaccin. Minor	Treatment Centre Nos.
		HS & FMD 1990 Nos.	HS & FMD 1991 Nos.	HS & FMD 1992 (1) Nos.	
<u>System A</u> Kantalai	NAv(2)	None(2)	None(2)	None(2)	NApp
<u>System B</u> Damminna Siddhapura Muruwela	11,000	9,400	11,000	NAv	3
<u>System C</u> Giranduru- kotte Sorabora	20,100	19,000	21,300	NAv	3
<u>System H</u> Niraviya Kalankuttiya	20,000	19,100	20,100	NAv	5
<u>Uda Walawe</u> Thunkama Mahagama	NAv	NApp	36,600(3)	NAv	NApp
<u>Kirindi Oya</u> Tissamahrama	NAv	1,800	6,000(3)	NAv	NApp
<u>Upper Mahaweli</u> Kotmale	237	None	None	None(4)	1
<u>System G</u> Bakamuna	NAv(2)	6,600	9,300	NAv	NApp
<u>System I</u> Weli Oya	NAv(2)	400	800	NAv	NApp
TOTAL	—	56,300	105,100	NAv	17

HS & FMD = Haemorrhagic seticaemia & Foot and Mouth Disease

- (1) Vaccinations done in some areas by DA&DDP and other areas by DAPH. DAPH vaccination figures were not available.
- (2) Access restricted by security problem
- (3) Includes cattle and buffalo in large migratory herds outside the irrigation project.
- (4) Farm activities started October 1992
- NApp = Not Applicable, i.e. activity or service is not being undertaken at that location
- NAv = Information Not Available

DA&DDP DIVERSIFICATION ACTIVITIES IN 1992

Farm Name	On Farm Activities Nos. head on farm Feb 1993	In Field Settler Enterprises (1) Nos. head issued 1992
<u>System A</u>		
Kantalai	NApp	NApp
<u>System B</u>		
Damminna	Layers 1,656 Fattener pigs 7 Draught bull 1	Layers 4,224 Pigs 67 Meat goats 19
Siddhapura	Broilers 2,369 Fattener pigs 30	None
Mutuwela (2)	Broilers 1,478	NApp
<u>System C</u>		
Giranduru- kotte	Broilers 1,562 Layers 923 Fattener pigs 59	Layers 2,098 Pigs 41 Meat goats 102 (3)
Sorabora	Meat goats 264 Grain maize 20ac	NApp
<u>System H</u>		
Niraviya	Broilers 1,490 Layers 760 Pigs (4) 177 Meat goats 138 Draught bulls 2 Muscovy ducks 5 Fish pond Grain maize 20ac Pineapple 0.25ac	Layer 1,904 Pigs 36 Meat goats 53
Kalankuttiya	Broilers 500	NApp
<u>Uda Walawe</u>		
Thunkama	Broilers 2,363 Layers 2,797 Milk goats 52 Draught bulls 4 (5)	Broilers 16,150 Layers 4,695 Pigs 74 Draught bulls 3 (5)
Mahagama	NApp	NApp

Farm Name	On Farm Activities Nos. head on farm Feb 1993		In Field Settler Enterprises (1) Nos. head issued 1992	
	<u>Kirindi Oya</u> Tissamahrama	Broilers	1,665	Layers
	Layers	514		
	Draught bulls	30 (5)		
	H/wood teak	1,000 plants		
	" hamila	20 plants		
	Cashew	250 plants		
<u>Upper Mahaweli</u> Kotmale	Milk goats	23	Broilers	225
	Draught bull	1	Layers	695
<u>System G</u> Bakamuna	NApp		NApp	
<u>System L</u> Weli Oya	Layers	260	NApp	

- (1) Nos. of head issued:
 Broilers 100-500 birds per settler family
 Layers 25-100 birds per settler family
 Pigs 5-10 weaner piglings per settler family
 Goats 4-5 kids per settler family
- (2) DA&DDP is preparing a proposal for layer hatchery at Mutuwela. It will be submitted to one or more international agencies for financing, e.g. to the European Community.
- (3) Goats from the Sorabora flock are issued to settlers from Girandurukotte.
- (4) Breeding and fattening pigs at Niraviya farm. The sow herd is being expanded to 40 sows with an expected output of approximately 120 fatteners per month.
- (5) Production and issue of draught bulls already trained for carting and cultivation.
- NApp = Not Applicable, i.e. activity or service is not being undertaken at that location

NOTES TO FINANCIAL SUMMARIES

Reported Loss 31st December 1990

Profit per Working Account 31st December 1990	Rs. 74,616
Adjustment in Respect of 31 December 1990 Per Balance Sheet 31 December 1991	Rs.(301,505)

	Rs.(226,889)

Estimated Profit and Estimated Service Expenditure 31st December 1992

The annual accounts Preparation for 31st December 1992 was not complete as at February 26, 1993. The profit for year ended 31st December 1992 of Rs.10 million and Service Expenditure of Rs.28 million were estimated by Mr. Y.G. Dharmasena, Deputy Director of Financ, DA.&DDP.

Farm Assets 31 December 1992

Total Assets at 31 December 1991:

Land	11,809,159	
Fixed Assets at cost less depreciation	47,950,778	
Net current assets	38,644,563	
	-----	Rs. 98,404,500
<u>Add: Estimated Additions 1992</u>		Rs. 9,595,500

Estimated at 31 December 1992		Rs.108,000,000
		=====

Cumulative Operating Profit/Loss 31 December 1992

Profit and Loss account closing balance 31 December 1991	Rs.(12,465,813)
<u>Add Estimated Profit for Year 31 December 1992</u>	Rs. 10,000,000

Cumulative Profit/(Loss) 31 December 1992 (Estimated)	Rs.(2,465,813)
	=====

Total Investment as at 31 December 1992

Capital Grants and Foreign Aid 31 December 91
(including capital reserve)

Rs.210,548,825

Estimated Grants in 1992

Rs. 29,000.,000

Estimated Total Investment at 31 December 1992

Rs.239,548,825
=====

Traught Animal & Dairy Development Programme - Balance Sheet as at 31 December 1990

	Rs. Pts.	Rs. Pts.	Rs. Pts.
Capital Grants			
Opening balance		159,472,299.74	
Additions during the year		14,669,000.00	174,141,299.74

Foreign Aid			
Opening balance			1,329,781.77
Capital Reserve			
Opening balance		5,795,400.09	
Transfer during the year	(433,656.77)		5,271,743.32
		-----	-----
General Reserve			
Profit Loss A/C			
Opening balance	(19,480,865.26)		
Adjustment in respect of previous year	(365,018.55)		
Profit/Loss during the year	74,616.44		
Deferred revenue expenditure transfer	(370,511.48)		

		20,741,378.35	

Services Expenditure			
Opening balance	57,582,112.03)		
During the year	(14,467,000.43)	(72,049,112.46)	(92,790,991.31)
		-----	-----
			37,951,333.52
			=====
Represented by			
Land opening balance	11,473,528.87		
Land capitalized during the year	306,215.96	11,779,744.83	

Fixed assets at cost	60,914,011.20		
Profit for depreciation	(15,115,376.54)	45,798,634.74	
Working capital			
Current assets	32,270,615.00		
Current liabilities	(2,394,247.15)	29,876,367.85	

Deferred revenue		579,334.00	
Losses due to terrorist attack		711,351.27	17,951,303.00
		-----	=====

Appendix 2.2

Brought Animal and Dairy Development Programme - Working Account for the year ending 31 December 1990

	Kantalai	Hiraviya	G/Lulle	Siddhapura	Kaduru Oya	Miki Dairy	Uda Walawe	Total
Working profit/(loss)								
Cattle	791,789.64	315,553.19	611,483.14	654,728.76	(11,104.71)		83,959.22	2,440,403.44
Buffaloes	58,611.23	10,239.99	6,603.64	19,354.70	540.00			349,350.46
Piggery - fattening		15,019.24	49,687.28	59,346.96			254,000.80	124,053.48
Piggery - breeding		(81,811.34)						(84,064.12)
Poultry - layer			34,870.11		17,054.32		(13,507.60)	(105,412.05)
Poultry - broiler		(13,850.51)	22,117.55	159,860.99	78,488.38		(218,770.54)	329,891.22
Duck		389.75			68,201.90		93,561.29	150.00
Sheep sales								4,235.00
Goat		8,172.26	(74,083.65)					(2,400.00)
Dairy development		798,646.68	110,654.28	151,803.51	69,847.44	323,632.08	(2,400.00)	(68,311.39)
Profit on poultry farmers							79,969.73	1,534,553.72
Profit on crop cultivation							2,827.75	2,827.75
Total working profit/loss before charging expenditure & depreciation							(6,906.84)	(6,906.84)
Less (-) General charges	650,401.13	1,052,359.26	761,332.35	1,045,094.92	223,027.83	323,632.08	271,318.87	4,527,166.44
D/Dev. expenses	(195,449.51)	(412,913.26)	(445,446.90)	(221,248.24)	(249,329.93)		(76,603.31)	(1,601,491.15)
Sundry losses			(41,739.14)					(41,739.14)
General charges -Mutuwela				(136,718.70)				(136,718.70)
Manampitiya sales centre				(26,800.38)				(107,201.52)
Add: Sundry income	3,150.50	48,706.67	46,414.00	13,993.35	10,075.90	(53,606.76)		122,772.14
Net Working profit/loss before charging depreciation	658,102.12	688,152.67	320,560.31	674,320.95	(43,526.58)	270,031.32	195,147.20	2,762,787.39
Less: Depreciation	16,655.16	235,164.97	116,081.75	105,403.14	141,835.29	309,411.51		924,551.82
Depreciation - Dairy development		89,195.80	42,931.51		102,500.83	3,500.00		238,128.14
Mutuwela				110,473.84				110,473.84
Trust Fund		12,624.26	41,389.94					376,285.69
Net Profit/Loss	641,441.96	351,167.64	129,157.11	458,443.97	(287,862.70)	322,271.49	195,147.20	1,113,348.50
H/O Administrative Exp. Appt.	148,390.69	148,390.29	148,390.29	148,390.29	148,390.30	148,390.30	148,390.30	1,038,732.06
Net Profit/Loss	493,056.61	202,777.35	(28,233.18)	310,053.68	(436,253.00)	(513,541.38)	46,756.90	74,616.44

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Draught Animal & Dairy Development Programme - Balance Sheet as at 31st December 1991

Previous Year - Rs.		Rs. Pks.	Rs. Pks.
	Capital Grants		
159,479,299.74	Opening balance	174,141,299.74	
14,669,000.00	Addition during the year	29,806,000.00	
			203,947,299.74
	Foreign Aid		
1,329,781.77	Opening balance	1,329,781.77	1,329,781.77
	Capital Reserve		
5,705,400.09	Opening balance	5,271,749.32	
433,656.77	Transfer during the year	---	
			5,271,749.32
	General Reserve Profit/Loss Accounts		
	Profit/Loss Accounts		
19,430,365.05	Opening balance	20,741,379.35	
385,018.55	Adjustment respect of previous year	101,505.77	
74,616.44	Profit/Loss during the year	1,916,477.02	
379,511.48	Deferred revenue expenditure transfer	300,905.55	
			22,459,312.35
	Service Expenditure		
57,532,112.00	Opening balance	73,049,112.46	
14,467,000.43	During the year	26,540,169.77	
			111,355,895.38
			39,493,799.75
	Represented by		
11,473,528.37	Land opening balance	11,779,744.33	
306,315.96	Land capitalized during the year	59,414.17	
			11,309,159.30
50,914,011.08	Fixed Assets - Cost	55,376,362.72	
15,125,376.54	Provision for depreciation	17,425,534.66	
			47,950,778.06
	Working Capital		
12,279,318.30	Current assets	12,199,379.40	
1,94,347.15	Current liabilities	2,551,510.54	
			10,344,660.30
170,004.13	Deferred revenue		170,004.13
711,351.57	Losses due to terrorist attacks		711,351.57
			18,196,729.75

g Accounts for the Year Ending 31st December 1991

	Kantalai	Miraviya	G/Lotte	Siddhapura	Nedura Oya	Mini Dairy	Uda Walawe	Total	Previous Year
Assets	2,702,086.87	758,238.30	3,267,247.23	108,238.33	346,191.70		81,576.51	7,263,578.94	2,446,409.44
- fattening	1,553.14	928,904.08	141,744.39	1,258,441.02			1,091,657.74	3,422,300.37	349,350.48
- breeding		81,069.12	98,351.28	(10,102.77)	(8,499.75)			163,817.88	124,053.48
- layer		(378,418.76)					20,880.74	(357,538.02)	(84,064.12)
- broiler		(12,194.12)	136,850.34	333,945.77	214,881.65		133,622.85	807,106.49	(105,412.05)
		226,769.62	242,748.40		18,606.73		502,414.69	990,539.44	(329,891.22)
		60.00					60.00	120.00	539.75
Development		31,092.46	123,079.82		900.00			155,072.28	(68,311.35)
- land		1,183,611.82	259,173.56	38,160.33	(85,589.46)	(236,304.41)	185,279.74	1,344,311.58	1,534,553.72
- cultivation							615.14	615.14	4,235.00
- by farmer							(136,751.61)	(136,751.61)	(6,966.84)
Working profit/loss before							97,031.58	97,031.58	2,827.75
- expenditure & depreciation	2,703,640.01	2,822,132.52	4,269,195.02	1,728,682.68	486,490.87	(236,304.41)	1,976,387.65	13,750,224.34	4,527,166.44
- General charges	241,500.03	552,297.29	517,596.83	357,266.41	253,888.28		330,367.95	2,252,916.79	(1,601,491.15)
- D/Dev. expenses									(41,939.14)
- Sundry losses				273,017.00				273,017.00	(136,718.70)
- General charges - Mutuwala				40,774.01	40,774.01	81,548.02		163,096.04	(107,201.52)
- Manampitiya sales centre			67,182.00		12,492.44		28,160.32	111,464.19	(122,772.14)
- Sundry income	3,569.43			1,057,625.26	204,321.02	(317,852.43)	1,674,180.02	11,172,598.70	2,762,787.99
Net working profit/loss before									
- changing depreciation	2,465,709.41	2,269,835.23	3,818,780.19	1,057,625.26	204,321.02	(317,852.43)	1,674,180.02	11,172,598.70	2,762,787.99
- Sundry income									
Net working profit/loss before									
- changing depreciation									
- Depreciation	5,084.77	220,367.96	89,966.29	69,438.89	123,062.33	329,462.72	6,784.29	844,167.05	924,551.82
- Dairy development		89,934.65	35,139.86		102,509.83			227,635.34	238,128.14
- Mutuwala				109,289.38				109,289.38	119,473.84
- Trust Fund									376,285.69
Profit/Loss									
Administrative Exp. Apptol.	153,575.65	153,575.65	153,575.66	153,575.66	153,575.66	153,575.66	153,575.66	1,075,029.60	1,113,348.50
Profit/Loss	2,307,048.99	1,805,896.96	3,540,098.38	725,321.33	(174,817.60)	(860,896.81)	1,513,820.07	8,916,477.32	1,038,732.06
									74,616.44

Balance Sheet as At 31st March 1999

	Rs. Cts.
Current Assets	
Stocks	2,052,420.44
Debtors	12,023,341.12
Cash at bank and in hand	1,179,370.31

	17,561,145.87

Current Liabilities	
Creditors	3,957,359.36
Current maturity of the long term loan	333,340.00

	3,790,699.36

Net current assets	1,770,446.51
Deferred revenue expenses	50,487.01
Fixed assets	22,031,128.45
Long term loans to staff	43,281.73

Assets employed	20,898,343.70
	=====
Financed by	
Share capital	
Ordinary shares	21,052,540.00
Share applications	1,423,653.00
Preference shares	5,398,000.00

	27,866,193.00
Long term loan	2,125,025.00
Profit and loss account	(92,874.30)

FUNDS EMPLOYED	20,898,343.70
	=====

Appendix 3.2

Profit and Loss Account for the Period Ended 31st March 1992

	Rs. Cts.	Rs. Cts.
Operating Profit		
Hatchery division	3,321,314.05	
Marketing Division	3,766,627.37	
Feed distribution division	3,244,055.10	14,332,637.32

Deduct - Expenditure		
Office expenditure	143,710.02	
Administrative expenses farm	3,793,311.19	
Farm extension expenses	305,571.09	
Selling expenses	5,798,772.37	
Finance charges	564,019.63	
Deferred revenue expenses	476,493.40	10,792,585.20
	-----	-----
Net Operating Profit		4,140,112.12
Add - Other Income		
Junury income (farm)	32,377.25	
Interest on Staff Loans	3,392.33	
Other income (farm)	322,369.38	349,738.92
	-----	-----
Profit/(Loss) before taxation		4,339,651.34
Balance at the beginning of the year 1.4.91	(4,057,300.00)	
Prior year adjustments	(124,025.34)	(4,402,725.34)
	-----	-----
Retained profit/(loss) carried forward		(32,374.00)
		=====

Please note that we have made no provision for income tax in the accounts for the year ended 31st March 1992

Balance Sheet as at 31st March, 1991

	1991 - Rs.	1990 - Rs.
Current Assets		
Stocks	5,580,350	2,019,265
Debtors	3,881,242	1,519,354
Advances and pre-payments	727,020	300,036
Cash at bank and in hand	1,124,783	1,062,933
	-----	-----
	11,314,395	5,433,148
	=====	=====
Current Liabilities		
Creditors	3,260,266	7,473,413
Current maturity of long term loan	133,240	
	-----	-----
	3,393,506	7,473,413
	=====	=====
Net Current Assets	7,920,889	(1,940,265)
Deferred revenue expenses	192,102	
Fixed assets	24,132,115	19,415,277
Long term loans to staff	12,232	
Investments		3,754,000
	-----	-----
	26,359,338	27,129,012
	=====	=====
Share Capital		
Ordinary shares	31,052,540	30,000,000
Share applications	316,363	1,237,173
Preference shares	5,000,000	5,000,000
	-----	-----
	37,369,903	36,237,173
	=====	=====
Long term loans	3,958,365	3,900,000
Profit and loss account	(4,357,900)	(2,358,161)
	-----	-----
FUNDS EMPLOYED	36,959,368	37,129,012
	=====	=====

Profit and Loss Account for the Period 31st March 1991

	1991 - Rs.	1990 - Rs.
Turnover	11,876,250	9,256,627
Operating profit/(loss)	(1,985,759)	(3,988,563)
Other income	176,301	330,402
Profit/(Loss) before taxation	(1,809,458)	(3,658,161)
Taxation	(300,300)	
Profit/(Loss) after taxation	(1,509,758)	(3,658,161)

Statement of Accumulated Losses

Balance at the beginning of the year as previously reported	(3,658,161)	
Prior year adjustments	(189,981)	
	(3,848,142)	
Loss for the year	(1,509,758)	(3,658,161)
Retained loss carried forward	(4,357,900)	(3,658,161)

Balance Sheet as at 31st March, 1990

1990 - Rs.

Current Assets

Stocks	3,019,365
Debtors	1,519,854
Advances and pre-payments	330,936
Cash at bank and in hand	1,362,993

	6,433,148
	=====

Current Liabilities

Creditors	7,473,413

	7,473,413
	=====

Net current assets (1,040,265)

Fixed assets 19,415,277

Investments	3,754,000

ASSETS EMPLOYED	37,123,012
	=====

Share Capital

Ordinary shares	30,000,000
Share applications	1,287,173
Preference shares	5,000,000

	36,287,173

Long term loans	3,500,000
Profit and loss account	(3,658,161)

FUNDS EMPLOYED	37,123,012
	=====

Profit and Loss Account for the Period 31st March 1990

1990 - Rs.

Turnover	2,256,627
	=====
Operating profit/(loss)	(2,288,563)
Other Income	730,402

Profit/(Loss) before taxation	(2,658,161)
Taxation	---

Profit/(Loss) after taxation	(2,658,161)
	=====

VALUATION OF LAND

Farm	System	Average	Value per Acre in 1981 Rupees	Value per Acre in 1993 Rupees
Kantalai	System 'A'	3,845	1,500.00	5,000.00
Daniya	System 'B'	135	250.00	7,500.00
Siddapura	System 'B'	1,820	250.00	5,000.00
Katuwela	System 'B'	1,200	250.00	5,000.00
Sirandurukotte	System 'C'	1,075	500.00	10,000.00
Sorabora	System 'C'	800	500.00	6,000.00
Niraviya	System 'd'	459	1,000.00	20,000.00
M.L.E.	System 'd'	50	1,000.00	20,000.00
Kalankuttiya	System 'd'	35	1,000.00	35,000.00
Thunkana	Uda Walawe	70	2,000.00	40,000.00
Vahagana	Uda Walawe	70	2,000.00	40,000.00
Velioya	System 'C'	10	250.00	5,000.00
Kotmale		5	10,000.00	30,000.00
Nirindiya		400	250.00	10,000.00

CAPABILITIES IN TERMS OF CROP AND LIVESTOCK DEVELOPMENT - IRRIGABLE AND POTENTIALLY IRRIGABLE LAND

1. System A: Kantalai Farm

Area: Total 2845 acres. Livestock and crop development constrained by security problem.

2. System B: Damminna Farm

Area: Total 135 acres, pasture 100, unimproved 18. Security problem. Board & Lodging Centre in corner of farm requisitioned by army; attacked pm 22 February 1993. Water resources: 1 depression (perennial), 2 wells (perennial), boundary of property abuts bund of large tank (reservoir). Topography rolling, adjacent paddy land. Soil quality on top of hill around cattle buildings less promising than that at lower elevation next to the tank (reservoir). Capability for crop and livestock development: potentially irrigable land, say 50 acres, water could be extracted from tank on boundary.

3. System B: Siddhapura Farm

Area: Total 1820 acres, pasture 1550, eucalyptus 50, marshy land 220. Security problem.

4. System B: Mutuwela Farm

Area: Total 1200 acres, pasture planted 650, weedy 300 because labour unavailable. Security problem. Topography flat. Excess grass made into hay and sent to System H Niraviya and Kalankuttiya farms. Water resources: 2 depressions (perennial). Dry period August - September. Buffaloes, broilers, broiler slaughter shed under construction. Capability for crop and livestock development: potentially irrigable land, say 100 acres, water could be supplied from paddy water canal near boundary.

5. System C: Girandurukotte Farm

Area: Total 1075 acres, pasture 700, rocky 200, indigenous grass 175. Topography rolling. Water resources: 3 watering points (1 point perennial, fed from large reservoir just outside perimeter fence, 2 points not perennial, and get dry annually). Short of green fodder during April - May so farm makes hay and brings in paddy straw from outside.

6. **System C: Sorabora Farm**

Area: Total 800 acres, pasture 400, rocky 200, to be developed 200. Topography flat and rolling. Water resources: 2 watering points (1 perennial, 1 not perennial). Short of green fodder April - May. Crop diversification: grain maize (c.20 acres).

7. **System H: Niraviya Farm**

Area: Total 459 acres, pasture 150, remainder weedy because neglected after planting for two years because of security threat. Topography flat, rolling. Water resources: 1 tank of post-paddy water below circuit bungalow (5 Muscovy ducks and fish pond), 2 depressions (1 perennial, 1 not perennial), 1 well (perennial). Triangular farm bordered on two sides by perennial rivers. Dry periods: January, May - September-inclusive. — Receives hay from Mutuwela farm. Crop diversification: grain maize (c.20 acres), pineapple (c.0.25 acres). Capability for crop and livestock development: 5 acres pasture irrigated now from paddy water canal. Say 50-100 acres potentially irrigable (water by lift irrigation from the two perennial rivers bordering two of the three sides of the property, if justified financially).

8. **System H: Kalankuttiya Farm**

Area: Total 85 acres, pasture planted 80. Topography flat with gentle slope down to tank (reservoir). Water resources: well, pump and 2 overhead tanks; large reservoir just beyond downhill boundary, with crocodiles. Receives hay from Mutuwela farm. Purebred imported (March 1991) Nili Ravi buffalo herd being established, with stall feeding and sprinklers. Capability for crop and livestock development: potential for extraction of water from tank beyond downhill boundary.

9. **Uda Walawe: Thunkama Farm**

Area: Total 70 acres, pasture 54, other crops 10, buildings 5, other 1. Topography rolling, gentle slopes. Dry periods: August - September worst, also February - March. Water resources: 1 small perennial rainfed tank, 1 well and overhead tank which could distribute water over whole farm. Farm located on shoreline of very large perennial tank. About 61 acres pasture and vegetable crops for seed irrigated now from well next to the very large perennial tank.

10. **Uda Walawe: Mahagama Farm**

Area: Total 70 acres, pasture planted 60, to be developed 10. Topography flat, rolling. Water resources: well and pump, overhead tank. Farm located on shoreline of very large perennial tank. Capability for crop and livestock development: part of pasture area irrigated now from well next to the very large perennial tank; potential to irrigate remaining area.

11. **Kirindi Oya: Tissamaharama Farm**

Area: Total 400 acres, about 300 rocky, pasture 125. Topography flat, rolling. Soil fertile but too much rock and tillage difficult or impossible. Dry periods: November - January, also April. Water resources: large perennial tank (wewa) within farm but too little water in it for irrigation, tubewell, overhead tank.

12. **Upper Mahaweli: Kotmale**

Area: Total 5 acres. Topography: sloping. Neglected tea estate land with eroded topsoil. Water resources: small perennial stream, presently dammed to supply temple nearby. Pasture grasses: Brachiaria species, Guinea, Napier NB21

13. **System G: Bakamuna**

Area: Not applicable (Office space only). Access limited by security problem.

14. **System L: Weli Oya**

Area: Total 10 acres. Access limited by security problem.

GENERAL INFORMATION

1. System A: Kantalai Farm

Location: On the Kantalai - Seruwila Road, 12 miles from Kantalai Town.

Started: May 1981

Area: 2845 acres

Cattle Stock:

Breeds available: Khillari
Crossbred Khillari
Breeding policy: Khillari x Crossbred Khillari
Khillari x Local

Inventory (end December 1992):

Neat Cattle:	
Stud bulls	3
Cows	518
Heifers 2-4 yr	184
Bulls 2-4 yr	13
Heifer calves	374
Bull calves	292
Trained draught bulls	0
Total	1384

2. System B: Damminna Farm

Location: On the Manampitiya - Maduruoya Road, 16 miles from Welikanda Town

Started: August 1985

Area: 135 acres

Cattle Stock:

Breeds available: Thari (Tharpakar)
Local

Breeding policy: Thari x Local

Inventory (end December 1992):

Neat Cattle:	
Stud bulls	9
Cows	44
Heifers 2-4 yr	18

Bulls 2-4 yr	0
Heifer calves	20
Bull calves	28
Trained draught bulls	1
Total	120

Milk Producers' Societies:

Total No. of milk producers' societies:	6
Societies registered as cooperatives:	4
Total number of suppliers:	498
Total registered members:	193

Breed Improvement (Upgrading) Programme:

Number of Board & Lodging Centres: 4

Milk processing (for 1992):

Curd 750 ml pots: 7,552

Marketing:

Sales centre income for 1992 (12 months): Rs.1,126,623.10

Livestock Population in System B in 1990:

	Cows	Bulls	Heifers	Heifer calves	Bull calves	Total
Neat cattle	1404	1888	549	167	110	4118
Buffalo	2732	2699	948	290	208	6877
						Total 10995

Settlement progress in System B:

Number of families: 16,216

Pasture: Brachiaria brizantha 75 acres, Napier NB21 25 acres.

Fencing: Perimeter fenced, 2 night paddocks.

Civil works: Farm office, store with garage, 2 staff dormitories, manager's bungalow, circuit bungalow, 2 labour quarters, wooden hut, laboratory, milking parlour, open cattle shed, pig shed, chute and crush, 2 overhead water tanks, 2 wells, 10 poultry layer sheds @ 400 sq.ft., house in Board & Lodging Centre (in corner of farm).

Machinery: Tractor, 2 trailers, 2 disc ploughs, tine tiller, bullock cart, generator.

Vehicles: Lorry 5 tonnes, 1 jeep (2 4WD vehicles not in working order), 3 privately owned motor cycles, 2 bicycles

3. System B: Siddhapura Farm

Location: On the Polonnaruwa - Batticaloa Road, 7 miles from Welikanda Town.
Started: April 1983
Area: 1820 acres

Cattle Stock:

Breeds Available: Thari (Tharpakar)
Crossbred Thari
Local
Breeding Policy: Thari x Crossbred Thari
Thari x Local
Inventory (end December 1992):

Neat Cattle:	
Stud bulls	4
Cows	145
Heifers 2-4 yr	58
Bulls 2-4 yr	0
Heifer calves	150
Bull calves	90
Trained draught bulls	0
Total	447

4. System B: Mutuwela Farm

Location: On the Welikanda - Trincomalee Road, 3.5 miles from Welikanda Town.
Started: August 1985
Area: 1200 acres
Buffalo Stock:

Breeds Available: Nili Ravi
Crossbred Surthi
Local
Breeding Policy: Nili Ravi x Crossbred Surthi
Nili Ravi x Local

Inventory (February 1993):

Buffaloes:	
Stud bulls	2
Cows	127
Heifers 2-4 yr	55
Bulls 2-4 yr	70
Heifer calves	54
Bull calves	80
Trained draught cattle bulls	0
Total	388

Milk Processing (for 1992):

Curd 750 ml pots: 3,830

Pasture: Whole area planted with *Brachiaria brizantha* and *Brachiaria mutica* including c.0.5 acres Napier NB21. 300 acres weedy because labour unavailable.

Fencing: Perimeter fence 8.5 km completed out of 14.5 km total, no internal fencing except night paddocks. Four strand electric fence.

Civil works: Farm office, stores, 5 single labour cottages, office, well, cajan hut, overhead tank, 2 pump houses, staff dormitory, livestock officer's bungalow, loose barn including milking place, stud bull shed, garage, 2 milking sheds, labour dormitory, 10 poultry broiler sheds @ 500 birds/shed, broiler slaughter shed under construction.

Machinery: 2 tractors, 2 drum mowers, baler, 2 grass collectors, 3 trailers, disc plough, 3 tine tillers (under repair).

Vehicles: 1 jeep (not working), 1 motor cycle, 3 bicycles.

5. **System C: Girandurukotte Farm**

Location: On the Girandurukotte - Ulhitiya Road, 0.25 miles from Girandurukotte.

Started: December 1982

Area: 1075 acres

Stock:

Available: Sahiwal cattle
Crossbred Sahiwal cattle
Jersey 50% x (Sahiwal 25% x Sinhala 25%)
Nili Ravi buffaloes

Policy: Sahiwal x Crossbred Sahiwal
Sahiwal x Local cattle
Jersey A.I. x 50% Sahiwal
Nili Ravi x Local

end December 1992):

Cattle:		Buffaloes:	
Stud bulls	16	Stud bulls	3
Cows	168	Cows	16
Heifers 2-4 yr	82	Heifers 2-4 yr	8
Bulls 2-4 yr	0	Bulls 2-4 yr	0
Heifer calves	108	Heifer calves	7
Bull calves	54	Bull calves	11

Owned draught cattle bulls 0

Total 428 Total 45

Societies:

Number of milk producers' societies:	22
Registered as cooperatives:	19
Number of suppliers:	3,375
Registered members:	1,142

Upgrading Programme:

Board & Lodging Centres:	2
Stud Bull Centres:	5
Track Breeding Centres:	2
Mahaweli breed cattle [Jersey 50% x (Sahiwal 25% x Sinhala 25%)] on pilot farm:	15

Milk processing (for 1992):

Yoghurt	110 ml cups:	727,538
Curd	750 ml pots:	10,253
Ghee	litres :	1,551
Sterilized flavoured milk 180 ml bottle:		118,613
Ice cream	80 ml cups :	144,038
Ice cream litres	:	1,294

Marketing:

Sales centre income for 1992 (12 months): Rs.1,536,569.80

Livestock Population in System C in 1990:

	Cows	Bulls	Heifers calves	Heifer calves	Bull	Total
Neat cattle	3709	10980	1064	532	1724	18009
Buffalo	619	965	174	108	227	2093
					Total	20102

The number of cattle and buffalo bull calves is greater than the number of heifer calves because bull calves are reared for draught use in System C.

Settlement progress in System C:

Number of families in Units 1,2,3,4 & 5: 23,885

Note: DA&DDP operates in Units 1,2 & 3 only.

Pasture: Most of farm planted with Guinea A and *Brachiaria brizantha*. *Gliricidia maculata* and *ipil-ipil* (*Leucaena* sp) around perimeter. Legume *Centrosema pubescens* planted here and there (c.1 acre total). No night grazing.

Fencing: Perimeter fenced, 4 x 50 acre paddocks with electric fencing.

Civil works: Sahiwal cattle herd milking shed, water supplied by bowser, bull shed, buffalo milking shed, hay shed 8500 bales capacity, circuit bungalow, farm office, extension office, feed store, garage, manager's bungalow, 4 officers' quarters, labour quarters 7 lines, 2 twin cottages, ladies dormitory, 10 poultry sheds @ capacity 500 birds/shed, store, slaughter shed, pig shed capacity 100 fatteners.

Machinery: 3 tractors (MF265, MF240, Ford 3600), 4 trailers, drum mower, finger rake swath turner, 2 brush cutters, baler, weigh scale, 2 water bowsers, 4 pumps, no workshop.

Vehicles: Lorry 6 tonne, 2 jeeps, 4 bicycles, 4 motor cycles (for extension officers)

6. System C: Sorabora Division

Location: On the Girandurukotte - Ulhitiya Road, 3.5 miles from Girandurukotte New Town.

Started: December 1982

Area: 800 acres

Cattle Stock:

Breeds Available: Thari (Tharpakar)
Crossbred Thari

Breeding Policy: Thari x Crossbred Thari

Inventory (end December 1992):

Neat Cattle:	
Stud Bulls	12
Cows	209
Heifers 2-4 yr	171
Bulls 2-4 yr	0
Heifer calves	156
Bull calves	94
Trained draught bulls	0
Total	642

Pasture: 400 acres *Brachiaria brizantha*, 100 acres Guinea, 300 acres unimproved. *Gliricidia maculata* 1 km on fenceline. No legumes. No night grazing.

Fencing: Perimeter fence 2 km out of 5 km completed; no paddocks.

Civil works: Thari milking shed (lactating cows transferred to Girandurukotte for milking), Boer cross goat shed, farm office & store, 1 officers' quarters, 3 labour quarters.

Machinery and vehicles shared with Girandurukotte farm. 1 motor cycle for Livestock Officer in Charge.

7. System H: Niraviya Farm

Location: On the Thambuttegama - Galnewa Road (Jaya Mawatha), 3 miles from Thambuttegama.

Started: May 1981

Area: 459 acres

Cattle Stock:

Breeds Available: Sahiwal
Crossbred Sahiwal
Jersey Stud Bulls

Breeding Policy: Sahiwal x Crossbred Sahiwal
Jersey Stud Bulls x 50% Sahiwal

Inventory (end December 1992):

Neat Cattle:	
Stud Bulls	36
Cows	165
Heifers 2-4 yr	89
Bulls 2-4 yr	10
Heifer calves	103
Bull calves	73
Trained draught bull	0
Total	476

Milk Producers' Societies:

Total No. of milk producers' societies:	21
Societies registered as cooperatives:	13
Total number of suppliers:	1309
Total registered members:	570

Breed Improvement (Upgrading) Programme:

Number of Board & Lodging Centres:	3
Number of Stud Bull Centres:	11
Number of Track Breeding Centres:	8
Number of Mahaweli breed cattle [Jersey 50% x (Sahiwal 25% x Sinhala 25%)] on Niraviya farm:	63

Milk processing (for 1992):

Yoghurt	110 ml cups:	522,490
Curd	750 ml pots:	19,588
Ghee	litres :	725

Marketing:

Sales centre income for 1992 (12 months): Rs.1,574,927.50

Livestock Population in System H in 1990:

	Cows	Bulls	Heifers	Heifer calves	Bull calves	Total
Neat cattle	4481	1959	2331	1922	1829	12522
Luffalo	2472	1317	1285	1084	1103	7261

Total 19783

Settlement progress in System H:

Number of families: 31,316

Pasture: *Brachiaria brizantha*, *B. decumbens*, *B. mutica*. About two thirds of farm very weedy. About 5 acres irrigated Napier NB21 in front of bungalow.

Fencing: Triangular shaped farm with perennial rivers on two of the three sides, perimeter fence, internal paddock fencing needs repair.

Civil works: Cattle shed, pig/cattle shed, repaired piggery/store, 4 poultry broiler sheds @ 500 birds/shed, 3 poultry layer sheds, goat shed, 4 pig sheds (two circular sheds converted from cattle sheds, one shed under construction), store, drivers' dormitory, 2 livestock officers' quarters, office building, manager's bungalow, staff dormitory, store building, garage & milk chilling building, milk processing (old), milk processing (new), 3 twin cottages, 3 labour cottages, circuit bungalow, overhead water tank.

Machinery: 2 tractors (MF240, MF135), 4 trailers, 2 tine tillers, disc plough, 2 disc harrows, drum mower, baler, tine turner, bullock cart, 3 pumps, generator.

Vehicles: 2 lorries (8 mt old, 6 mt new), 1 small lorry 2.5 mt, 2 double cab pick-ups, 1 milk sales lorry, 4 private motor cycles, 3 push bicycles.

8. System H: Kalankuttiya Division

Location: On the Thambuttegama - Galnewa Road (Jaya Mawatha), 15 miles from Thambuttegama.

Started: May 1981

Area: 85 acres

Buffalo Stock:

Breeds Available: Nili Ravi

Breeding Policy: Nili Ravi x Crossbred Surthi

Inventory (end December 1992):

Buffaloes:	
Stud Bulls	7
Cows	4
Heifers 2-4 yr	63
Bulls 2-4 yr	4
Heifer calves	2
Bull calves	2
Trained draught bull	0
Total	82

Pastures: Whole area planted, mainly with *Brachiaria brizantha*, also paddock of Napier NB21.

Fencing: Perimeter fenced, paddock 14 acres.

Civil works: 3 buffalo sheds, office, sales centre, 2 officers' quarters, twin labour cottage, board & lodging centre keeper's house, 1 poultry broiler house @ 500 birds, 2 overhead water tanks, 1 pump house. Mains electricity.

Machinery & Vehicles: Shared with Niraviya farm.

9. Uda Walawe: Thunkama Farm

Location: On the Embilipitiya - Paper Corporation Road, 0.5 miles from Embilipitiya Town.

Started: August 1990

Area: 70 acres

Buffalo and Cattle Stock:

Breeds Available: Nili Ravi buffaloes
Crossbred Murrah
Sahiwal stud bull cattle
Crossbred Sahiwal

Breeding Policy: Nili Ravi x Crossbred Murrah buffaloes
Sahiwal x Crossbred Sahiwal cattle

Inventory (end December 1992):

Buffaloes:		Neat Cattle:	
Stud Bulls	1	Stud Bulls	1
Cows	27	Cows	6
Heifers 2-4 yr	10	Heifers 2-4 yr	0
Bulls 2-4 yr	1	Bulls 2-4 yr	9
Heifer calves	13	Heifer calves	2
Bull calves	13	Bull calves	7
		Trained draught cattle bulls	0
Total	65	Total	25

Breed Improvement (Upgrading) Programme:

Number of Board & Lodging Centres: 0
Number of Stud Bull Centres: 7
Number of Track Breeding Centres: 2

Milk processing (for 1992):

Yoghurt 110 ml cups: 2,665
Curd 750 ml pots: 16,491

Marketing:

Sales centre income for 1992 (12 months): Rs.2,751,881.50

Lives ock Population in Uda Walawe Irrigation Project in 1990:

	Cows	Bulls	Heifers	Heifer calves	Bull calves	Total
Neat cattle	1433	592	705	436	308	3474
Buffalo	1638	1013	893	646	488	4678
						Total 8152

Settlement progress in Uda Walawe:

Number of families: 26,831

Pasture: About 54 acres *Brachiaria brizantha*, also Napier NB21.

Fencing: Perimeter fenced and paddocks.

Civil works: Office, including milk processing, training centre, store, house across road, 4 quarters, poultry sheds (5 layer, 1 brooder, 4 broiler, 1 slaughter), calf shed, milking shed, piggery, goat shed, goat milking place under construction, sales centre.

Machinery: Tractor 4 wheeled (needs repair), tractor 2 wheeled rotovator, 2 disc plough, disc harrow, 2 tine tillers, ridger (for grass), 2 trailers, trailer water bowser, bullock cart.

Vehicles: Pick-up, jeep, lorry 3 mt.

10. Uda Walawe: Mahagama Farm

Location: On the Embilipitiya - Suriyawewa Road, 7 miles from Embilipitiya Town.

Started: August 1990

Area: 70 acres

Buffalo Stock:

Breeds Available: Nili Ravi
Crossbred Murrah

Breeding Policy: Nili ravi x Crossbred Murrah

Inventory (February 1993):

Buffaloes:	
Stud Bulls	4
Cows	67
Heifers 2-4 yr	0
Bulls 2-4 yr	0
Heifer calves	44
Bull calves	38

Trained draught cattle bull 1

Total 154

Milk Processing (for 1992):

Curd 750 ml pots: 12,777

Pasture: About 60 acres, *Brachiaria* spp (*B.mutica*, *B.decumbens*), Guinea A, Napier NB21.

Fencing: Perimeter fenced, paddocks.

Civil works: cowshed & office & curd room, bull shed, milking shed, 2 calf pens, overhead water tank, bungalow under construction, office under construction, no quarters, biogas plant under construction.

Machinery: Generator, 2 water pumps, bullock cart, biogas plant, windmill (not working).

Vehicles: 1 private motor cycle.

11. Kirindi Oya: Tissamaharama

Location: On the Colombo - Kataragama Road, 5 miles from Tissamaharama.

Started: April 1987

Area: 400 acres

Buffalo and Cattle Stock:

Breeds Available: Sahiwal cattle
Crossbred Sahiwal
Local
Nili Ravi buffaloes

Breeding Policy: Sahiwal x Crossbred Sahiwal
 Sahiwal x Local
 Nili Ravi x Local

Inventory (February 1993):

Buffaloes:		Neat Cattle:	
Stud Bulls	1	Stud Bulls	9
Cows	18	Cows	1
Heifers 2-4 yr	5	Heifers 2-4 yr	7
Bulls 2-4 yr	0	Bulls 2-4 yr	3
Heifer calves	18	Heifer calves	24
Bull calves	10	Bull calves	9
		Draught Khillari cattle bulls 30 (to be trained)	
Total	52	Total	83

Milk Producers' Societies:

Total No. of milk producers' societies:	4
Societies registered as cooperatives:	0
Total number of suppliers:	58
Total registered members:	0

Breed Improvement (Upgrading) Programme:

Number of Board & Lodging Centres:	0
Number of Stud Bull Centres:	2
Number of Track Breeding Centres:	9

Milk processing (for 1992):

Yoghurt	110 ml cups:	109,321
Curd	750 ml pots:	2,011
Ghee	litres :	345

Marketing:

Sales centre income for 1992 (12 months): Rs.1,257,691.50

Pasture: About 125 acres *Brachiaria brizantha*, some *B. mutica*.

Fencing: Perimeter fenced, no internal fencing for paddocks.

Civil works: Office, stores, manager's bungalow, livestock officer's bungalow, 2 dormitories, sales centre, twin cottage, farmers' community centre, 5 labour quarters, generator room, mini dairy, 12 poultry sheds, slaughter shed, poultry feed store, 2 buffalo sheds, 1 neat cattle shed, fuel store.

Machinery: 2 tractors (MF275, MF240), trailed tractor water bowser with pump, 2 trailers, 2 small trailers, bullock cart, 2 disc ploughs, 2 tine tillers, disc harrow, air compressor, knapsack sprayer, submersible pump, 4 pumps, generator

Vehicles: 2 lorries, 2 twin cab pick-ups, lorry water bowser, 3 private motor cycles, 4 bicycles.

12. Upper Mahaweli: Kotmale Livestock Development Centre

Location: On Nawalapitiya - Tyspane Road, 12 miles from Tyspane Town, in Nawa Tyspane settlement area.

Started: October 1992

Area: 5 acres

Cattle Stock:

Draught cart bull 1

Breed Improvement (Upgrading) Programme:

Number of Stud Bull Centres: 2 Jersey bulls

Cattle Artificial Insemination service

Livestock Population in Upper Mahaweli Kotmale in 1992:

	Cows	Bulls	Heifers	Heifer calves	Bull calves	Total
Neat cattle	90	6	59	36	46	237
Buffalo	0	0	0	0	0	0

Total 237

Settlement progress in Upper Mahaweli Kotmale (1992):

Total Number of families: 2,982 in 33 settlement areas.

Out of which DA&DDP Target Population: 1,044 families in 5 settlement areas, viz. Harangala 1, 2 & 3, Nawa Tyspane and Oonoogaloya.

Fencing: Perimeter fenced.

Civil works: Quarters/Office (Minor Treatment Centre), goat shed, stud bull shed (under construction), broiler shed (to follow)

13. System G: Bakamune

DA&DDP extension activities located at Mahaweli Authority of Sri Lanka Regional Project Manager's office, Bakamune.

Started: January 1990

Breed Improvement (Upgrading) Programme:

Number of Stud Bull Centres: 4

14. System L: Weli Oya Livestock Development Centre

Location: Padaviya - Parakkramapura Road, 7 miles from Padaviya Town.

Started: April 1990

Area: 10 acres

Breed Improvement (Upgrading) Programme:

Number of Stud Bull Centres: 2

Settlement progress in System L (end August 1992):

Number of families: 3,364

**STAFFING OF DRAUGHT ANIMAL & DAIRY DEVELOPMENT PROGRAMME
HEAD OFFICE AND FARMS**

Head Office, Colombo

Consultant	1		
Director	1		
Personal Assistant	1		
Manager - Finance & Administration	1	Co-ordinator Projects	1
Assistant Accountant	1	Confidential Secretary	1
Internal Audit Assistant	1	Asst. Manager (Dairy Development)	1
Asst. Manager - Statistics	1	Field Officer	1
Supplies Assistant	1	Personnel & Admin. Clerk	1
Book Keepers	2	General Clerks	5
Cashier Clerk	1	Steno Typist	1
Steno Typist	1	Typist Clerks	2
Audit Clerk	1	Receptionist	1
Typist Clerks	3	K.K.S.	6
Accounts Clerks	9	Labour	2
General Clerks	6		

Total Staff Posts 53, of which Total Posts Filled 47 (as at February 1993)

System A: Kantalai Livestock Farm

Assistant Manager	1
Chief Clerk	1
Livestock Officer	1
Accounts Clerk	1
Asst. Store Keeper	1
Field Supervisor	1
K.K.S.	1
Driver	1
Mechanic	1
Watchers	4
Labourers	3
Herdsman	7

Total Staff 23

System B: Damminna Livestock Farm

Assistant Manager	1		
Farm Staff:		Extension Staff:	
Livestock Supervisor	2	Livestock Officer	2
Accounts Clerk	1	Salesman	1
General Clerk	2		
Storekeeper	1		
K.K.S.	1		
Driver/ Tractor Operator	2		
Cattle/ Buffalo Keeper	1		
Watchers	4		
Labourers	2		
Herdsman	1		
Poultry Labour	1		
Piggery labour	1		
Total Staff	23		

System B: Siddhapura Livestock Farm including Mutuwela Division

Officer in Charge	1		
Farm Staff:		Mutuwela Division:	
Chief Clerk	1	Livestock Officer	1
General Clerk	2	Livestock Supervisor	1
Asst. Store Keeper	1	Tractor Operator	1
Driver/ Tractor Operator	2	K.K.S.	1
Watchers	2	Watchers	6
Labourers	2	Herdsman	1
Lorry Cleaner	1	Milker	1
Poultry Labour	1	Bungalow Up Keeper	1
		Gardener	1

Total Staff 27

System C: Girandurukotte Livestock Farm including Sorabora Division

Manager	1		
Veterinary Surgeon	1		
Farm Staff:		Extension Staff:	
Chief Clerk	1	Asst. Manager (Ext.)	1

Accounts Clerk	1	Livestock Officers	4
General Clerks	3	Livestock Supervisor	1
Store Keeper	1	General Clerk	1
Livestock Supervisor	1	Driver	1
Driver/ Tractor Operator	3	Watcher-Board & Lodging	3
Cattle/ Buffalo Keeper	1		
Lorry Cleaner	2		
K.K.S.	1	Scraborra Division:	
Watchers	6	Herdsmen	9
Poultry Keeper	1	Milker	1
Goat Keeper	1		

Mini Dairy:

Officer in Charge	1
Production Officer	1
Production Assistant	1
Salesmen	2
General Clerk	1
Drivers	2
Gardener/ Labourer	1
Factory Labourers	12
Boiler Operator	1

Total Staff 67

System H: Niraviya Livestock Farm including Kalankuttiya Division

Assistant Manager	1		
Farm Staff:		Extension Staff:	
Livestock Officer	1	Livestock Officers	4
Chief Clerk	1	Livestock Supervisor	1
Accounts Clerk	1	A.I. Technician	1
General Clerks	4	General Clerk	1
Steno Typist	1	Watchers-Board & Lodging	4
Asst. Store Keeper	1		
Driver & Tractor Operators	7	Milk Processing:	
Cattle/ Buffalo Keeper	1	Livestock Officer	1
Lorry Cleaners	3	General Clerk	1
Watchers	5	Salesmen	3
Electrician	1	Labourers	4
Bungalow Up Keeper	1		
K.K.S.	1		
Milker	1		
Herdsmen	7		

Labourers	8
Poultry Keeper	1
Goat Keeper	1
Piggery Keeper	1
Total Staff	68

Uda Walawe Special Area

Thunkama Farm:		Mahagama Farm:	
Asst. Manager Livestock	1	Livestock Officer	1
Asst. Manager Crops	1	Watchers	2
Chief Clerk	1	Labourers	3
General Clerk	1		
Asst. Store Keeper	1	Extension:	
Driver	1	Animal Husbandry Officer	1
Watcher	1	Vet. Surgeon/An Husb Off	1
Labourers	14	Unit Manager	1
Total Staff	30		

Kirindi Oya: Tissamaharama Livestock Farm

Assistant Manager	1		
Farm Staff:		Extension Staff:	
Livestock Officer	1	Livestock Officers (Ext)	2
Chief Clerk	1	Veterinary Surgeon	1
Storekeeper	1		
Production Officer Dairy	1		
Laboratory Assistant	1		
Livestock Supervisor	1		
General Clerks	2		
Salesgirl	1		
Lorry Drivers	2		
Cattle/ Buffalo Keepers	3		
Tractor Operator	2		
Lorry Cleaner	2		
Driver	1		
Office Peon	1		
Goat Keeper	1		
Watchers	6		
Poultry Keepers	2		
Broiler Slaughterman	1		

Production Helpers Dairy	2
Sales Helper	1
Dormitory Keeper	1
Farm Manager's Bungalow Keeper	1
Farmers' Community Centre Helper	1
Carter	1
Total Staff	41

Upper Mahaweli: Kotmale

Livestock Officer	1
A.I. Technician	1

System G: Bakamuna

Not Available

System L: Weli Oya

Not Available

**RAW MILK PURCHASE PRICE PAYABLE TO FARMERS,
AND MINIMUM RETAIL SALES PRICES OF DA&DDP PRODUCTS**

Raw Milk Purchase Price Payable to Farmers

DA&DDP, Nestles and MILCO all use the MILCO schedule of prices per litre for milk according to fat and solids-not-fat content. MILCO increased the basic price of 4.3% fat and 8.4% SNF milk from Rs.8.50 to Rs.9.00 effective from 16 February 1993.

Products On Sale at the Seven DA&DDP Sales Outlets

Sales Outlets:

Colombo: Head Office (187 Ward Place, Colombo 7) & Mahaweli Nipayum
System B: Manampitiya
System C: Girandurukotte
System H: Thambuttegama & Galgamuwa
Uda Walawe: Thunkama

Products:

Froilers	Rs. 78.00 per kg
Mutton (goat)	Rs. 60.00 per kg
Pork	Rs. 55.00 per kg
Eggs	Rs. 2.75 each (February 1993)
Curd 750 ml pot	Rs. 30.00
Yoghurt 110 ml cup	Rs. 4.50
Ice cream 80 ml cup	Rs. 5.00
Ice cream 1 litre	Rs. 41.00
Sterilized flavoured milk 180 ml bottle	Rs. 4.50
Ghee 375 ml	Rs.45.00
Ghee 750 ml	Rs.90.00

Live Cattle Minimum Sale Prices

Up to 3 years	3 - 7 years	7 - 9 years	10 and upwards
Rs.	Rs.	Rs.	Rs.
per kg	per kg	per kg	per kg

Cattle issued to settlers are 0 - 9 years old.

Imported Bull Calves/ Stud Bulls	-(1)-	-(1)-	-(1)-	21.50
Purebred Bull Calves/ Stud Bulls Locally Bred	-(1)-	-(1)-	-(1)-	21.50
75% Crossbred stud bulls/ Bull Calves	23.00	25.00	22.50	21.50
50% Crossbred stud bulls/ Bull Calves	21.50	22.50	22.50	21.50
Imported Heifers/ Cows	-(1)-	-(1)-	-(1)-	21.50
Purebred Heifers/ Cows (Locally bred)	-(1)-	-(1)-	-(1)-	21.50
75% Crossbred Heifers/ Cows	23.00	25.00	22.50	21.50
50% Crossbred Heifers/ Cows	21.50	22.50	21.50	21.50
Indigenous Heifers/Cows	21.50	22.00	21.50	21.50
Indigenous Heifers/Bull Calves	21.50	22.00	21.50	21.50

(1) Price set by Head Office at time of Sale.

Live Buffalo Minimum Sale Prices

Up to 3 years Rs. per kg	3 - 7 years Rs. per kg	7 - 9 years Rs. per kg	10 and upwards Rs. per kg
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Buffaloes issued to settlers are 0 - 9 years old.

Imported Buffaloes	-(1)-	-(1)-	-(1)-	21.50
Purebred Buffaloes (Cows, Bulls, Heifers, Heifer Calves, Bull Calves	-(1)-	-(1)-	-(1)-	21.50
75% Crossbred Stud Bulls/ Bull Calves	-(1)-	-(1)-	-(1)-	21.50
50% Crossbred Stud Bulls/ Bull Calves	22.50	23.50	22.50	21.50
Imported Heifers/ Cows	-(1)-	-(1)-	-(1)-	21.50

Purebred Heifers/ Cows (Locally bred)	-(1)-	-(1)-	-(1)-	21.50
75% Crossbred Heifers/ Cows	-(1)-	-(1)-	-(1)-	21.50
50% Crossbred Heifers/ Cows	-(1)-	-(1)-	-(1)-	21.50
Indigenous Heifers/ Cows	-(1)-	-(1)-	-(1)-	21.50
Indigenous bulls/ Bull	21.50	21.50	21.50	21.50
Calves	21.50	22.50	21.50	21.50

(1) Price set by Head Office at time of Sale.

Live Goats Minimum Sale Prices

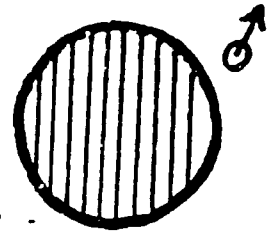
Weaned males and females 4-6 months old, Rs.1,200 each.

Live Pigs Minimum Sale Prices

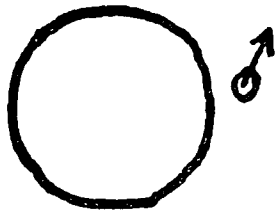
Weaned males and females 2 months old, Rs.1,250 each.



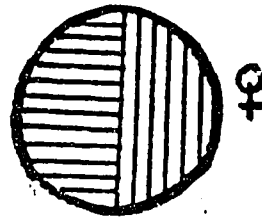
LOCAL (L)



SAHIWAL/THARPAKAR (S/T)

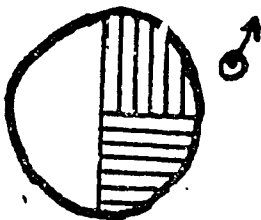


JERSEY (J)

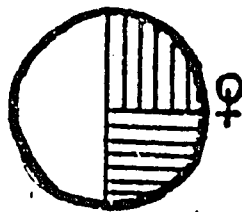


F₁ (L x S/T)

(50% L x 50% S/T)

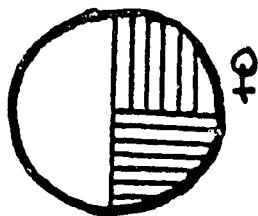


(L x S/T x J)₁



(L x S/T x J)₁

(50% J x 25% L x 25% S/T)



(50% J x 25% L x 25% S/T)

MAHAWELI BREED

TERMS OF REFERENCE

STUDY OF COMMERCIALIZATION OPTIONS FOR THE DA&DDP FARMS AND ACTION PLAN PREPARATION

BACKGROUND

The Draught Animal and Dairy Development Program (DA&DDP) has been developed by the Mahaweli Authority over the past 12 years. The program provides a range of extension and other services to settler farmers geared to the upgrading of draught animals (the DA&DDP now has more than 550 pure bred meat cattle) and dairy development. These services include control of diseases, farmer education and the formation of 53 cooperatives for milk collection and processing. The program originated with the objective of encouraging draught power for cultivation purposes but was gradually converted into a much broader effort of crop and stock integration aiming to raise incomes and nutritional levels of settler families. Physically the DA&DDP is centered on the activities of 11 farms assigned to it in Mahaweli areas. A list of the farms is attached.

In recent years there has been increased emphasis on the financial self-sufficiency of the program and, as a means to that, the diversification of activities, including the production of eggs, broilers, pigs. Much of this is under the aegis of a separate company registered as the Mahaweli Livestock Enterprises, Ltd. MLE, which was incorporated in 1982 and which began operations in 1984, now covers 210 settler families in three cooperatives.

OBJECTIVE

Identify options for the future of the DA&DDP and the MLE taking into account the objectives of ensuring the continued availability of the present services to settlers and the optimal use of Mahaweli resources which are presently assigned to them.

TASKS

1. Review the activities of the DA&DDP and the MLE including their services to Mahaweli settlers. Include within this review the identification of any of these activities or services which are also being carried out by private firms or individuals. In such cases, compare the relative performance of the DA&DDP and the MLE and, on the other hand, the private suppliers.
2. Review the capabilities in terms of crop and livestock development of the Mahaweli resources presently assigned to the DA&DDP and the MLE.
3. Review the financial performance of the DA&DDP and the MLE. Explore the role of past and present public sector subsidies, including in the provision of capital resources such as land, and the projected needs for public sector support in the future. Assess the competitiveness and quality of DA&DDP and MLE services as compared with private sector suppliers, if any.

4. Identify the potential for private enterprises to supply the services to settlers presently being provided by the DA&DDP and the MLE.
5. Identify options for MASL to pursue with regard to the future of the DA&DDP and the MLE in order to ensure the continued availability of services to the settlers and the optimum use of Mahaweli resources. These options should improve services to settlers while providing increased efficiency in use of assets through increased competition and increased participation of the private sector. They should result in a reduction of public sector subsidies and or an increase in revenue to the public sector.
6. Assess the effect the suggested options might have with regard to the quality and the prices charged to settlers for the various services.
7. Develop a preliminary action plan in consultation with MASL officials, representatives of the DA&DDP and the MLE and others for the commercialization of the DA&DDP and the MLE.
8. Identify the financial implications of the proposed action plan including the savings to the MASL over the medium term and the revenue which might be generated through lease payments or other charges.
9. Give a seminar on the proposed action plan.

REPORTS

A draft report must be submitted one week before the end of the consultancy. The report should follow the items listed in the schedule of tasks listed above.

TIMING

It is estimated that the assignment will require up to four weeks. The assignment is to be completed by December 15, 1992.

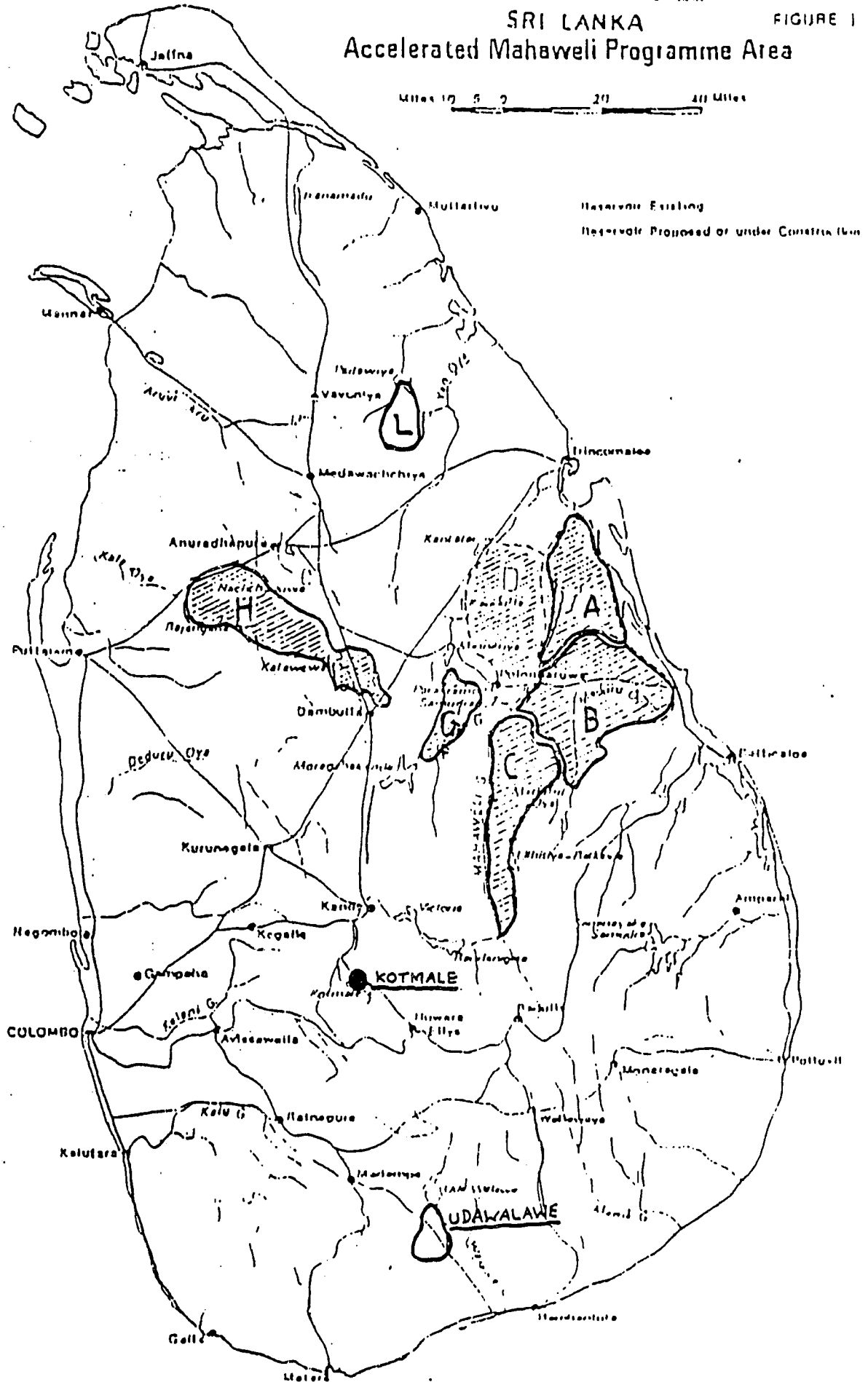
QUALIFICATIONS

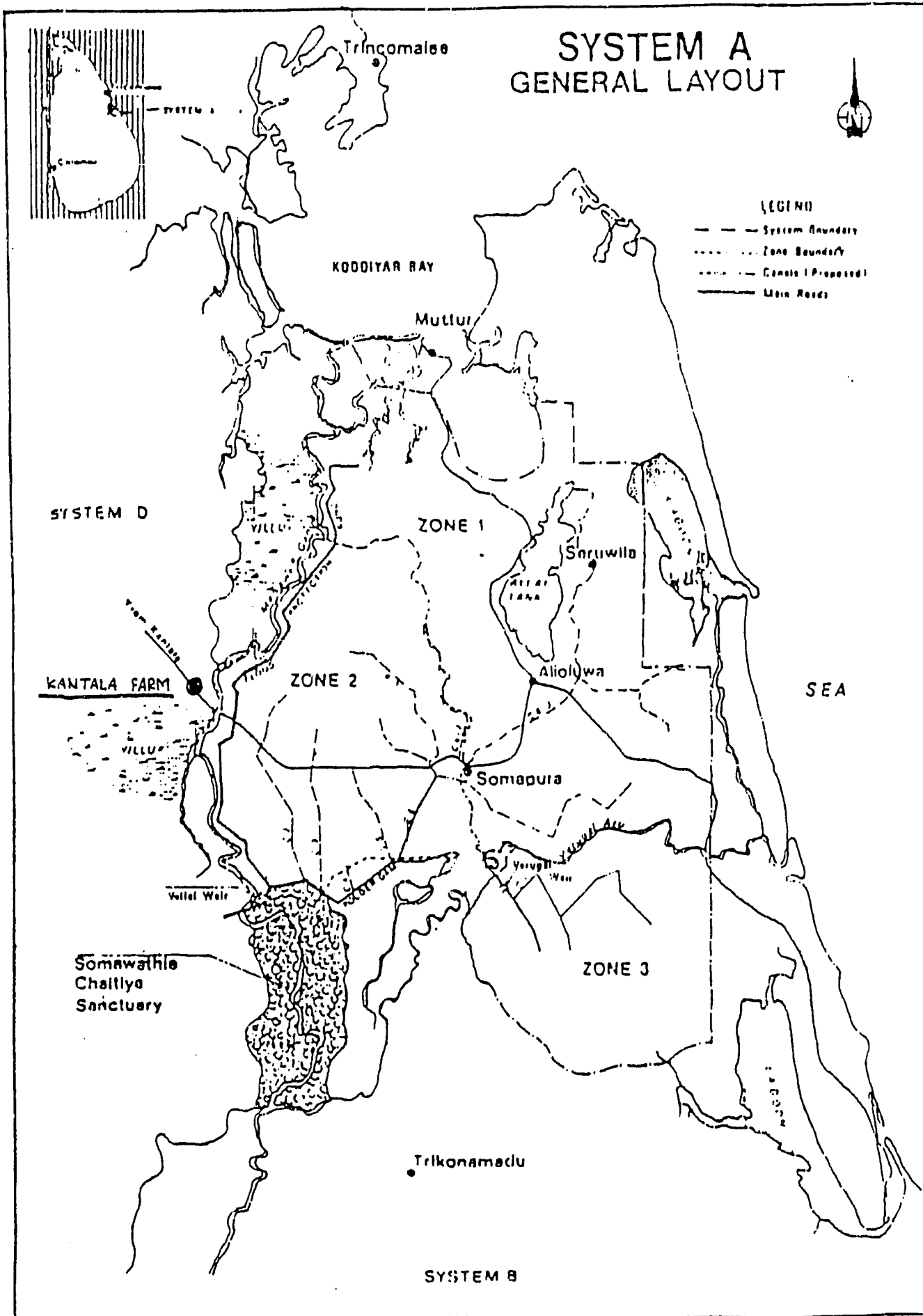
(i) A person with extensive experience and competence in the livestock and dairy development fields. (ii) A person with extensive financial and business experience and competence.

Farm	Location	Acreage
Kalankuttiya	System H	Total 85 acres, planted 80
Girandurukotte	System C	Total 1075, pasture 700, rocky 200, indogenous grass 175
Sorabora	System C	Total 800 acres, pasture 400, rocky 200, to be developed 200
Mahagama	Uda Walawe	Total 70 acres, planted 60, to be planted 10
Tunkama	Uda Walawe	Total 70 acres, pasture 50, other crops 10 and 5 for buildings, 5 acres to be planted
Daminna	System B	Total 135 acres, pasture 115,
Siddhapura	System B	Total 1820 acres, pasture 1550, eucalyptus 50, marshy land 220
Muthuwella	System B	Total 1200 acres, planted 650
Kantalai	System A	Total 459 acres, pasture 350, indigenous pasture 100 acres
Weli Oya	System L	Not in operation
Niraviya	System H	Total 459 acres

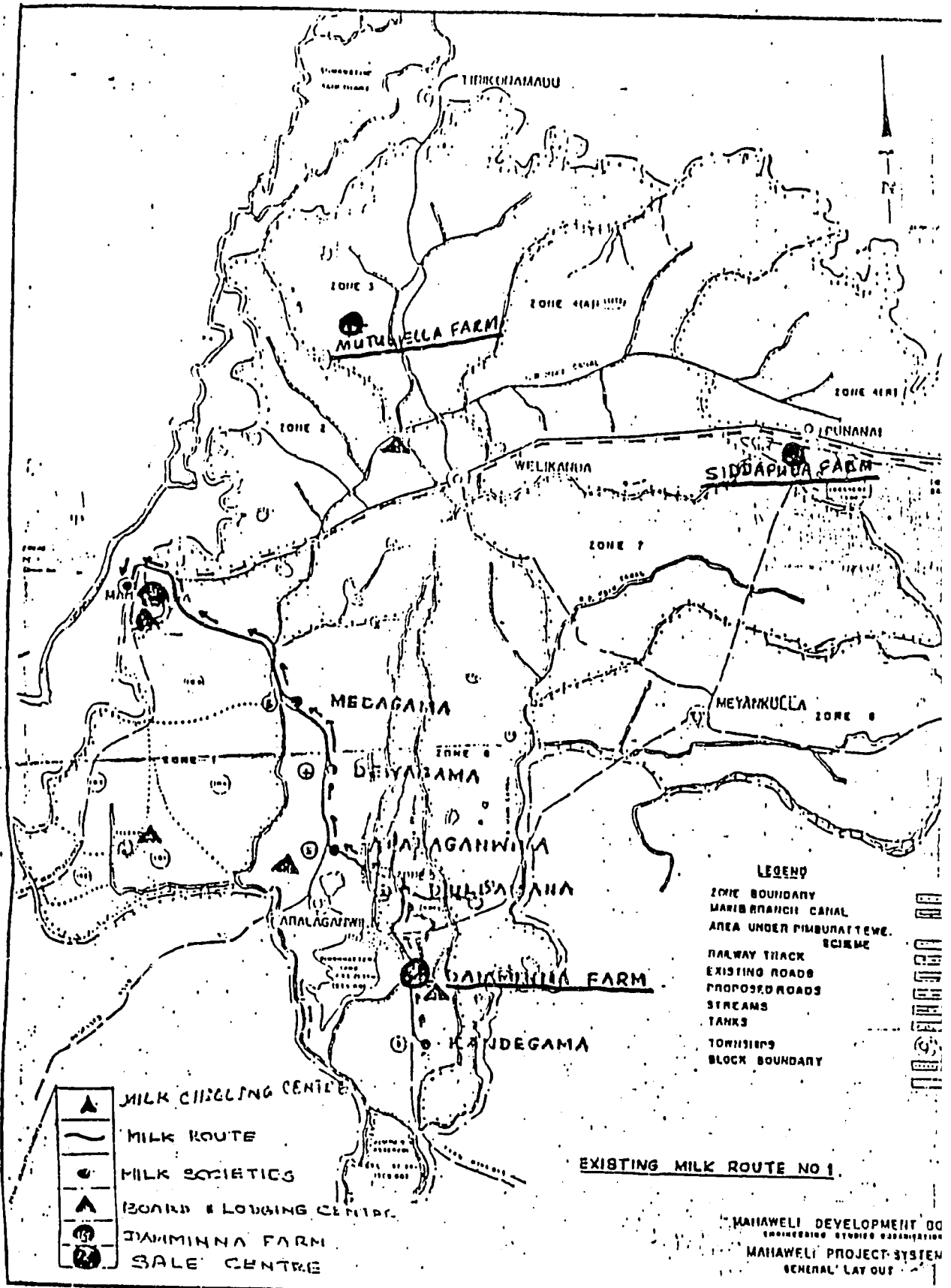
SRI LANKA Accelerated Mahaweli Programme Area

FIGURE 1

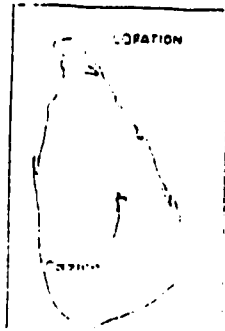
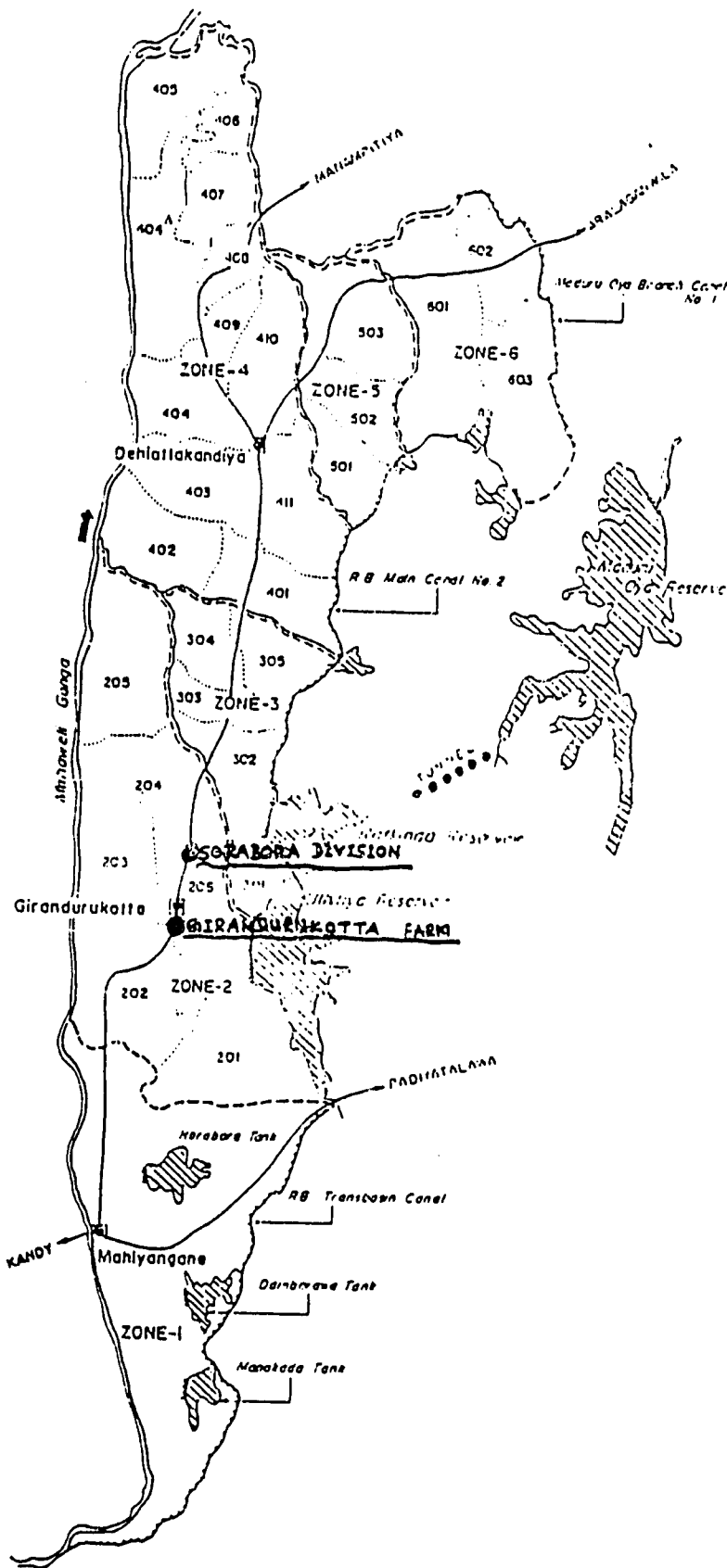
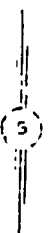




SYSTEM - B



SYSTEM - 'C'



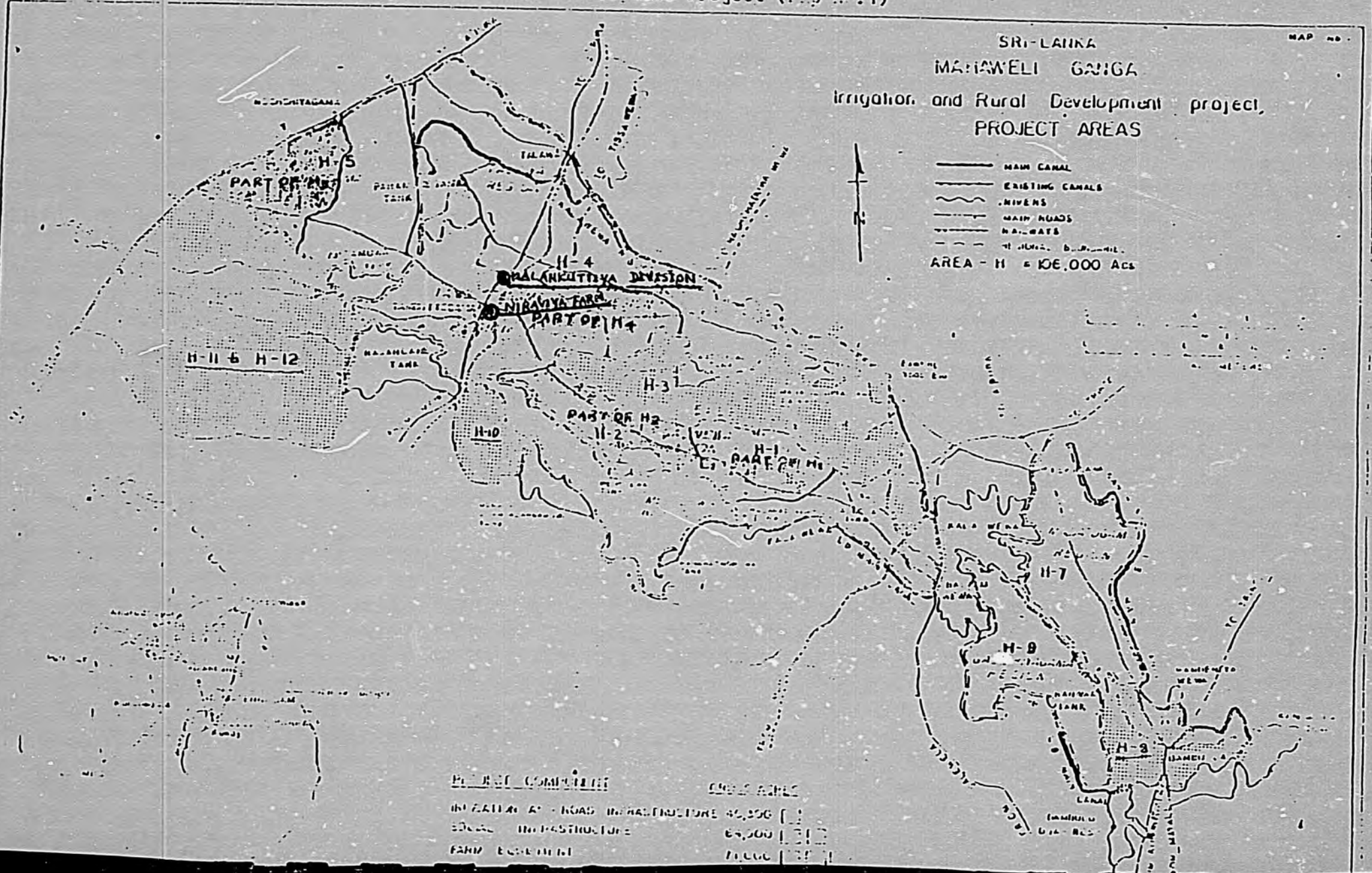
LEGEND

—	Road
⊙	Tank
—	Stream
- - -	Zone Boundary
- - -	Block Boundary
—	Channel
⊙	Town Centre
A	Area Centre
B	Block Centre
o	Manuel Centre

Approx. Scale 1: 273,000

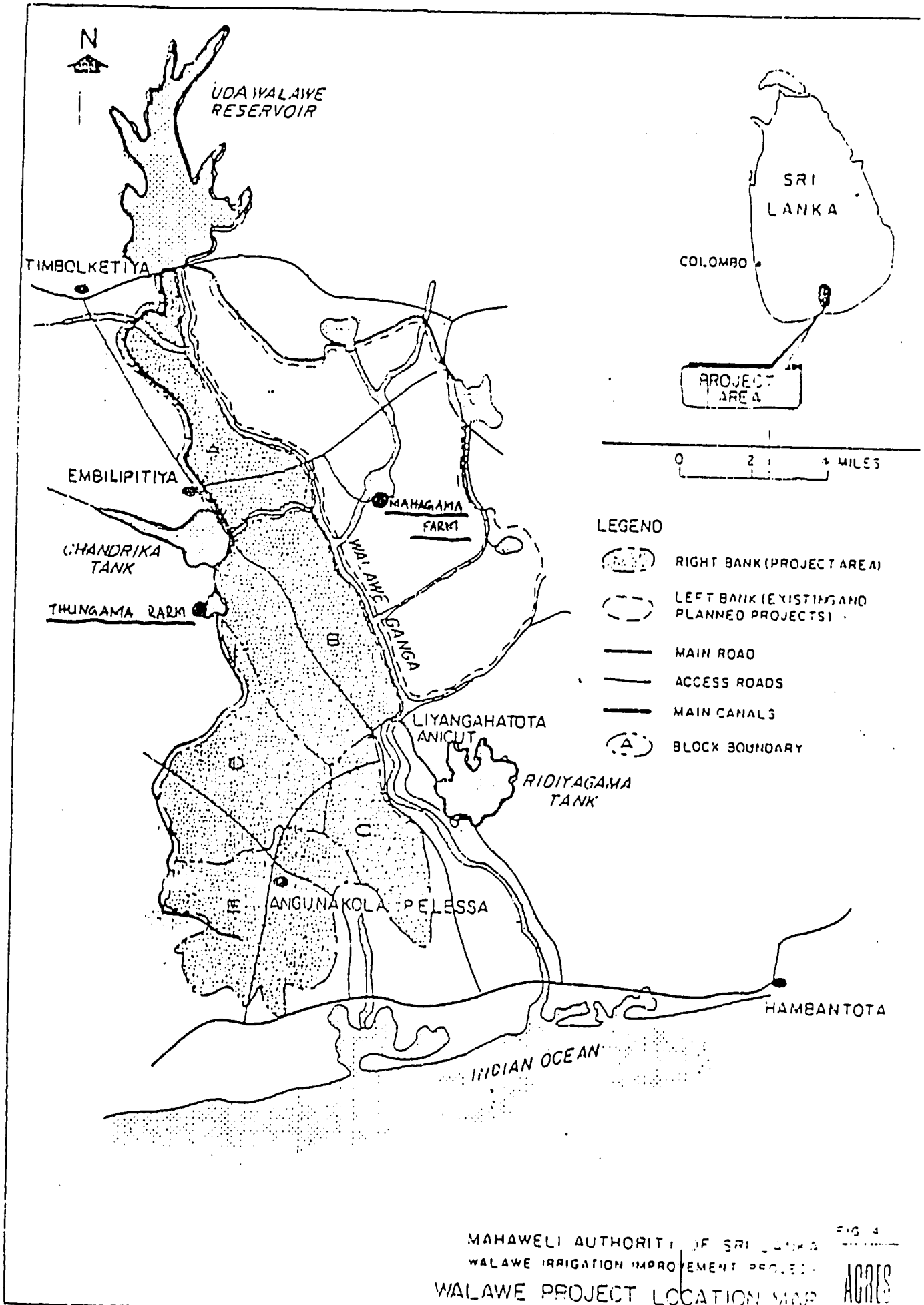
SYSTEM - 'H'

6. Mahaweli-Ganga (11) - Irrigation & Rural Development Project (Map No. 1)

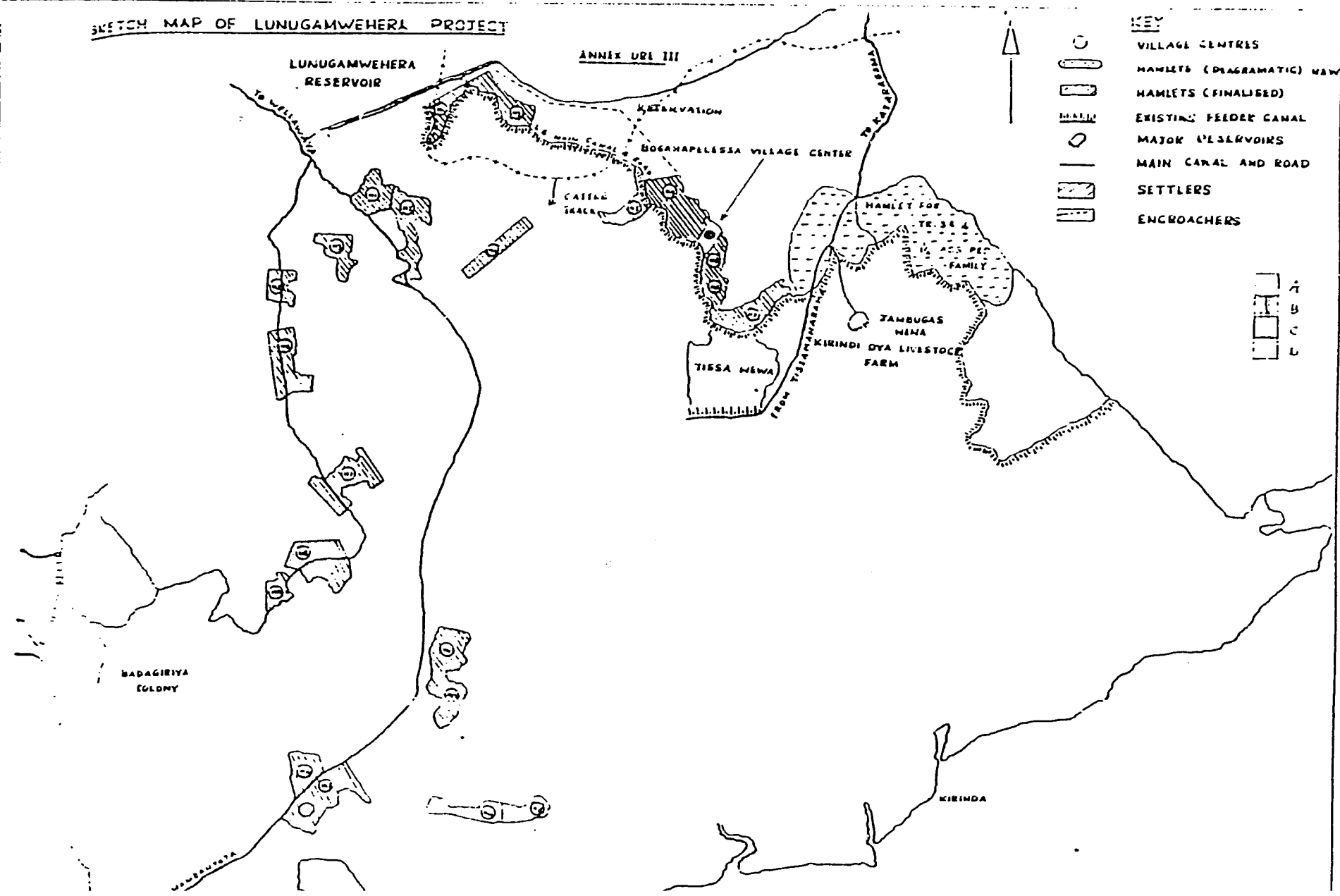










UDA WALAWE

WATER MAP



SKETCH MAP OF LUNUGAMWEHERA PROJECT

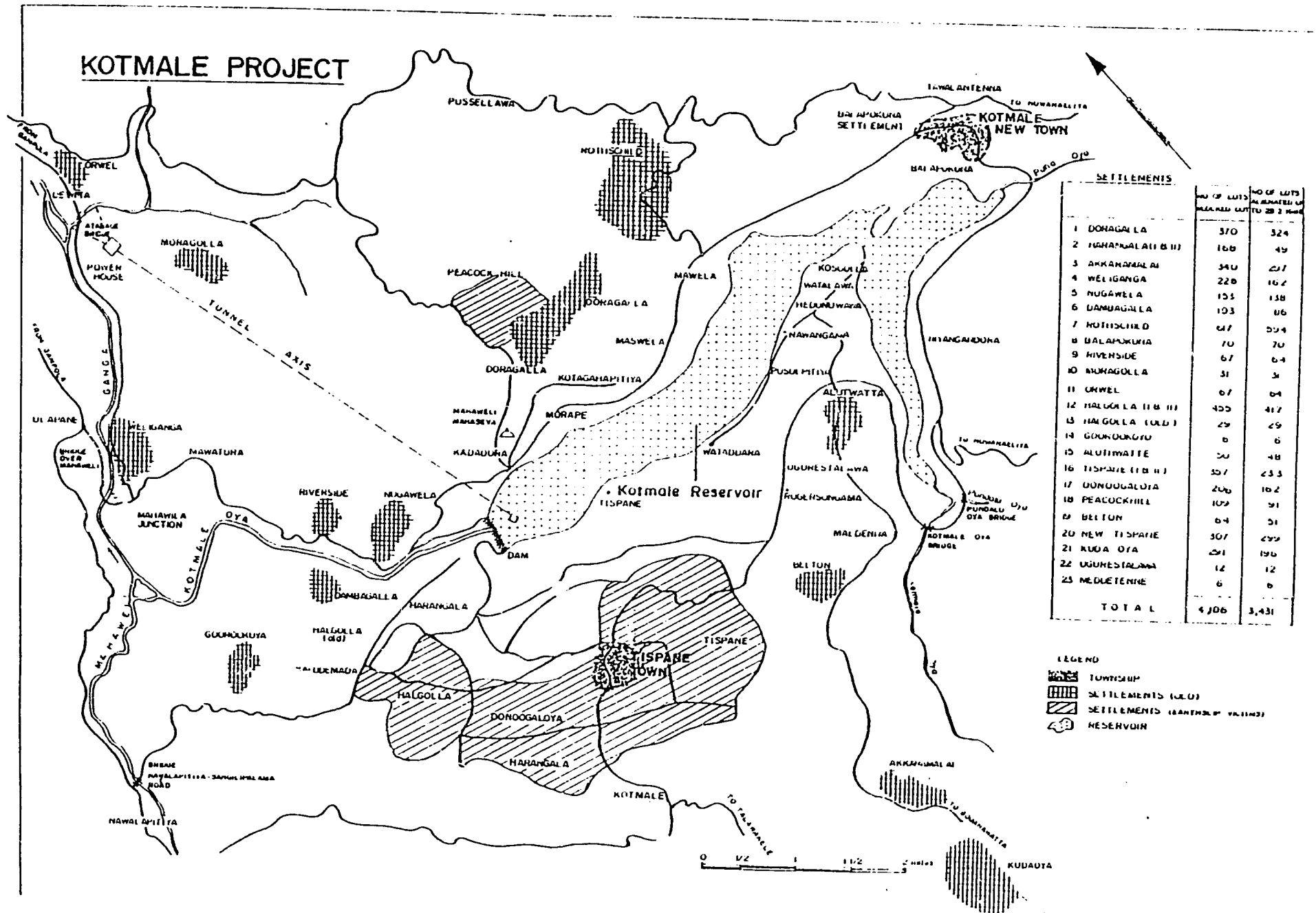


- KEY**
-  VILLAGE CENTRES
 -  HAMLETS (DIAGRAMATIC) NEW
 -  HAMLETS (FINALISED)
 -  EXISTING FEEDER CANAL
 -  MAJOR RESERVOIRS
 -  MAIN CANAL AND ROAD
 -  SETTLERS
 -  ENCROACHERS

7
B
C
L

KOTMALE PROJECT

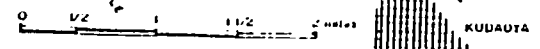
66



SETTLEMENTS	NO OF LOTS PLANNED LOTS	NO OF LOTS AS SHOWN ON TU 28 2 MAPS
1 DOHAGALLA	370	324
2 HAHAKALAI (B II)	160	49
3 AKKAKALAI	340	217
4 WELIGANGA	220	162
5 NUGAWELA	155	138
6 DAMBAGALLA	103	86
7 MUTTISOMILA	67	59
8 DALAPUKURIA	70	70
9 RIVERSIDE	67	64
10 MURAGALLA	31	3
11 URWEL	67	64
12 HALGOLLA (B II)	400	417
13 HALGOLLA (OLD)	29	29
14 GUNUNGUYA	0	6
15 ALUTWATTA	50	48
16 TISPANE (B II)	307	233
17 GUNUGALUYA	200	102
18 PEACOCKHILL	109	91
19 BELTUN	64	51
20 NEW TISPANE	307	299
21 KUDA OYA	291	196
22 GUNESTALAWA	12	12
23 MEDUETENNE	6	6
TOTAL	4,706	3,431

LEGEND

- TOWNSHIP
- SETTLEMENTS (OLD)
- SETTLEMENTS (AS SHOWN ON TU 28 2 MAPS)
- RESERVOIR



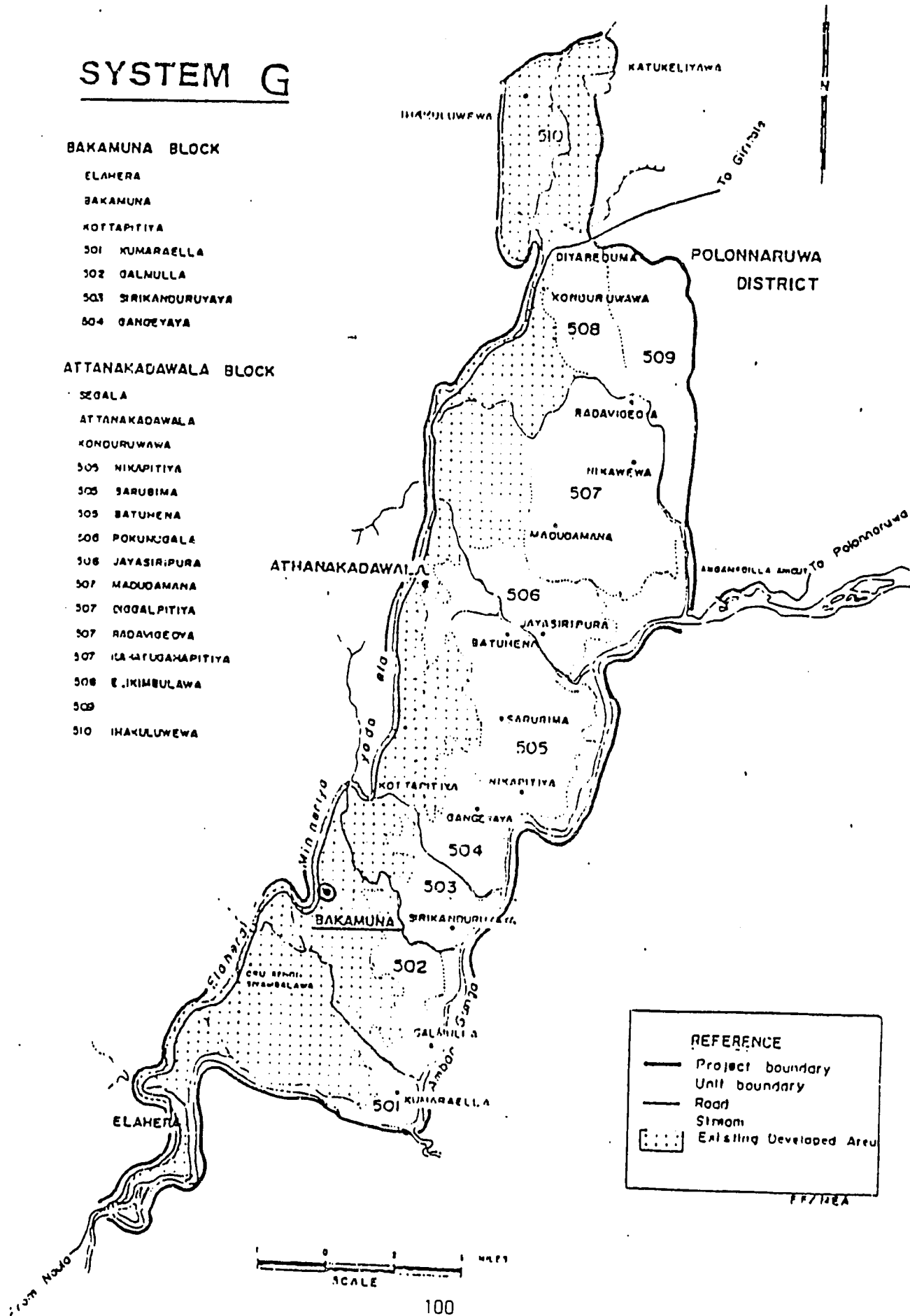
SYSTEM G

BAKAMUNA BLOCK

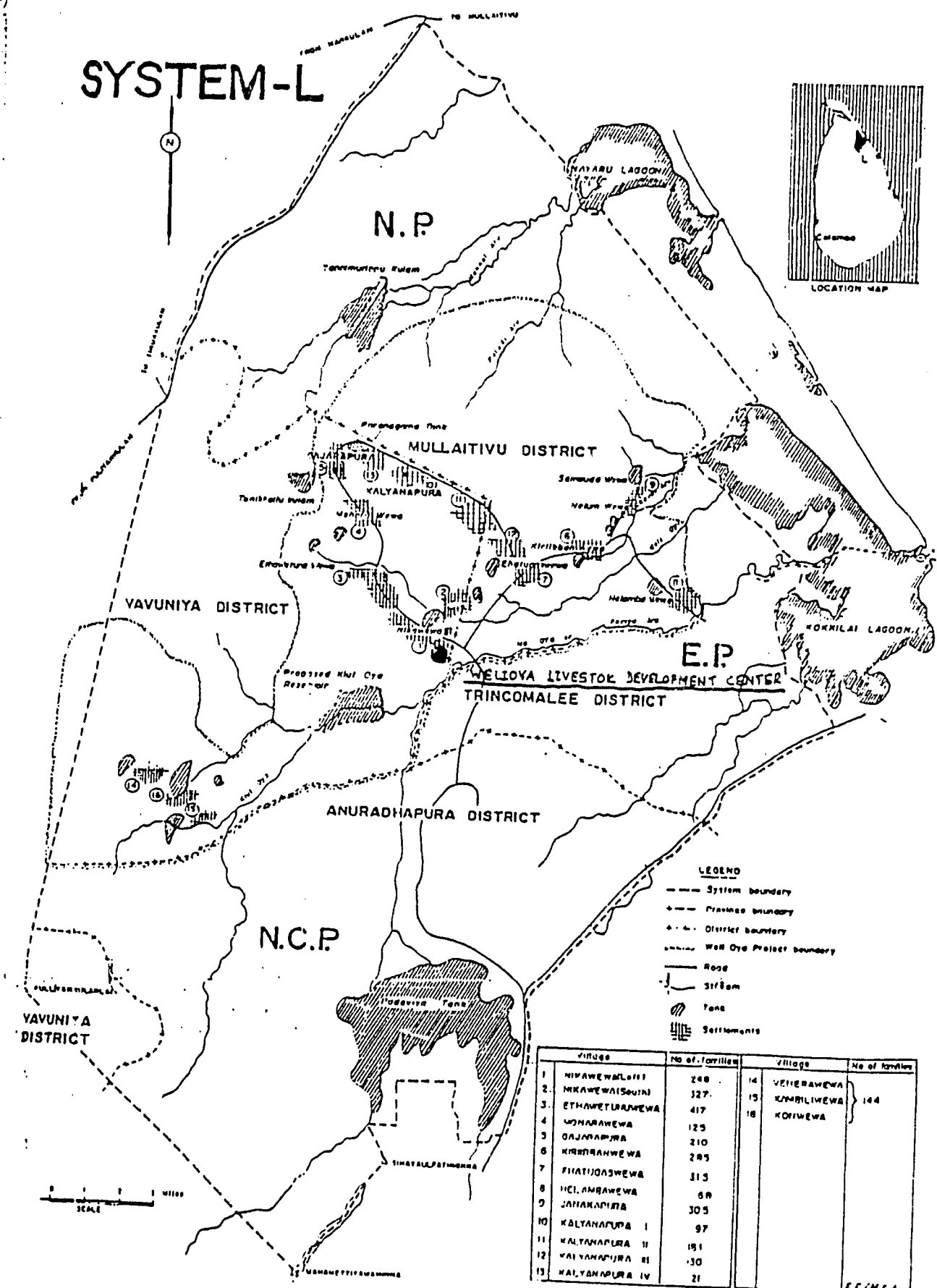
- ELAHERA
- BAKAMUNA
- KOTTAPITIYA
- 501 KUMARAELLA
- 502 GANMULLA
- 503 SRIKANDURUYAYA
- 504 GANGAYAYA

ATTANAKADAWALA BLOCK

- SECALA
- ATTANAKADAWALA
- KONOURUWAWA
- 505 NIKAPITIYA
- 505 SARUBIMA
- 505 BATUMENA
- 506 POKUNJGALA
- 506 JAYASIRIPURA
- 507 MADUAMANA
- 507 OGGALPITIYA
- 507 RADAVIGEYA
- 507 KALAGUHAMAPITIYA
- 508 E. JIKIMBULAWA
- 509
- 510 IHAKULUWEWA



SYSTEM-L



LEGEND

- System boundary
- - - Province boundary
- ... District boundary
- War Cyn Project boundary
- Road
- Stream
- Tank
- Settlements

Village	No of families	Village	No of families
1. NIYAWEWALOTTI	248	14. VETTERAWEWA	144
2. NIYAWEWAL(SOUTH)	327	15. KUMBILIWAWA	
3. ETHAWETIYARAWEWA	417	16. KOTIWEWA	
4. WOHARAWEWA	125		
5. OAJANAPURA	210		
6. KIRIBBOVALI	285		
7. FIATIYODAWEWA	313		
8. HELIAMBARAWEWA	68		
9. JAHAKAPITA	305		
10. KALYANAPURA I	97		
11. KALYANAPURA II	151		
12. KALYANAPURA III	30		
13. KALYANAPURA IV	21		

MED/EIED PUBLICATIONS AVAILABLE

Local Market for Pickled Products (December 1990)

Non Farm Small Scale Enterprise Credit on Selected Mahaweli Systems, Geoffrey Peters and M.W. Panditha (December 1990)

Crop Profiles - Spices, Herbs and Aromatics, L. Denzil Phillips (July 1991)

Study of the Tourism Development in the Uda Walawe (July 1991)

Potential for Silver Skin Onions in the Mahaweli, Walter Nueberg (August 1991)

Nursery Development of Papaya and Mango, Papaya Growers' Guide and Technical Notes for Business Plan for Mixed Fruit Cultivation Investment, Ben Hatfield (November 1991)

Dehydrated Fruit Processing Opportunities and Trends in Sri Lanka, Wanchai Somchit, (November 1991)

An Evaluation of the Entrepreneur Development Programmes, Dr. Susan Exo and Hina Shah, (December 1991)

Aromatics PIP Interim Report on Trials Establishment, Dr Thomas Davies (December 1991)

Agro-Business Financing Review, Dennis De Santis (December 1991)

Integrated Fruit Drying, juicing, Pulping project - Prep Feasibility Study, Michael Smedley, Ben Hatfield and Wanchai Somchit (December 1991)

Cold Chain Requirements for Uda Walawe, Fredrick E. Henry (March 1992)

Field Manual for Processing Tomatoes, Peter Florance (March 1992)

Processing Tomato Trials in Mahaweli System H, Peter Florance (March 1992)

Processing Tomato Trials in Mahaweli System C, Peter Florance (March 1992)

Dried Fruit Processing in the Mahaweli, Dr. Kamal Hyder (September 1992)

Feasibility Study on Commercial Potential of Snake Venoms in Mahaweli Systems, Anslem de Silva, (January 1993)

Census of Mahaweli Enterprises and Employment (January 1993)

Most publications are priced at Rs.100/-. The publications are available at the MED Office at 8th Floor, Unity Plaza, Colombo 4. (inquiries, Ph. 508682-4)

An EIED publication entitled - "Information Available for the Mahaweli Investor", is also available at the MED Office.

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