

TMOP 42/0032/1

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Royal Norwegian Ministry
of
Foreign Affairs
for
African National Congress (SA)

ANC DEVELOPMENT CENTRE, DAKAWA

WORK PROGRAMME
for a
**FEASIBILITY STUDY AND DETAILED
PLAN FOR AGRICULTURAL DEVELOPMENT**

Oslo-N, March 1986

NORPLAN A/S
in cooperation with
NORAGRIC
Norway

1.00 Introduction

1.10 Presentation of ANC' policy strategies. Definition of general purpose of the study within this context, and as means to attract financing to sectorial development.

1.20 General information about physical properties, including edaphic and climatic factors, and consequent limitations and opportunities for food production.

1.30 General information about social and economic environment in which the Centres are placed, degree of integration into local economy, limitations and opportunities.

1.40 General resource profile on centre inhabitants, (from man power study) including attitudes towards farming, agricultural education and experience, and consequent limitations and opportunities for the agricultural program.

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1.50 General internal demand profile for agricultural products. Per Capita and total food base requirements, basic diet identification, special limitations and opportunities.

2.00 Objectives

2.10 Overall objective; Assist ANC in determining the priorities for a sectorial agricultural development for Dakawa by means of a comprehensive agricultural study, which shall also take into account the developments at Mazimbu.

2.20 Specific objective A: Given the restrictions imposed by ANC policy and limitations in physical, socio-economic and manpower resources as established in part 1 above,

carry out economic feasibility analyses of the following agricultural production options, each treated as individual schemes.

- 2.21 Plant production - garden crops
 - 2.22 Plant production - field crops
 - 2.23 Animal production - ranching
 - 2.24 Animal production - dairy farming
 - 2.25 Animal production - piggery
 - 2.25 Animal production - poultry
- 2.30 Specific objective B: Given the rate of return (cost/benefit ratio or other agreed upon measure for comparison) for each sector at various levels of intensity, and the restrictions from part 1.20, 1.30, 1.40, design the optimum combination of the various agricultural schemes analyzed in part 2.21 - 2.25 above. This overall integrated solution for the Centre as a whole will thereby be based on the highest return from the total resource utilization, thus deciding the optimum size for each sector.
- 2.40 Specific objective C: Given the optimum overall design for operation as a whole from part 2.30, each sector included in the design should then be planned for implementation as separate projects for financing, stepwise in size and over time up to the optimum size as established in part 2.30.

Each of the sector projects should specify:

- 2.41 - approach and time frame for staged development up to optimum size and to self sustainance
- 2.42 - financial resource requirements, including investment costs and recurrent costs
- 2.43 - foreign exchange component of part 2.42
- 2.44 - human resource requirement at various levels of training and capacity
- 2.45 - physical input requirements (land use)

- 2.46 - production forecasts
- 2.47 - rate of return
- 2.48 - plan of management
- 2.49 - integration/interdependence on other proposed projects

- 2.50 Specific objective D: Design a summary overall development plan, aggregating the sector projects and giving the overall requirements, production forecasts, rate of return and degree of integration between projects for the Center as a whole, giving priority recommendations and time frame for stepwise implementation of the total plan. Propose a management structure for the total operation, including marketing of surplus products.

- 2.60 Specific objective E: Propose an agricultural organization for Dakawa and advise on an organizational superstructure for the combined agricultural activities at Dakawa and Mazimbu. Define the need for manpower, recruitment and training, propose recruitment and training policies. Preparation of brief job descriptions of key personnel and define management training requirements.

- 3.00 Methods of analysis

- 3.10 The proposed study is well suited for a linear programming analysis. This will make it possible to impose restrictions and obtain optimum solutions both in aggregate and by sector once the economic and physical input-output relations are determined. It will also make it relatively simple to update the study if there should be significant changes in basic assumptions or in the physical or economic relationships on which the study is based.

3.11 The quality of the study will depend on the realism of the assumptions and the dependability of physical and economical input - output estimates.

In a traditional study of this nature, assumptions need to be made on the availability and cost in the market of labour, capital and physical inputs. Physical input - output relationships are generally known at different levels of technology, and the market is used to establish prices for both intermediate and final products.

This project will of necessity violate some of the usual assumptions on both the input supply side and on the product demand side, as well as those related to resource mobility and substitution.

Project specific assumptions therefore have to be made regarding manpower availability, capacity and cost. Assumptions also have to be made concerning capital availability and cost, and importantly, the level of technology which is to be employed. These assumptions are policy related, and must be clarified by the ANC.

With regard to input/output relationships, technical transformation ratios, or yield estimates, all these are concepts related to productivity, i.e. efficiency oriented. Again, project specific assumptions must be made, partly based on available data in situ, partly from similar units with comparable technology elsewhere, partly from the surrounding area. While these estimates must be based on as firm a data background as possible, there will unavoidably be a degree of judgement involved. The question of prices, both for inputs, intermediate outputs and final products, has to be addressed. These are crucial to the allocation of resources, profitability accounting and thus the optimizing analysis which is the theoretical underpinning of the whole study.

The proposal suggests that each sector is treated as

individual profit centers, with the resources flowing to where they contribute the most. This will create an internal competition for resources, assuring efficiency in their use and a maximum rentability for the total venture. While the analytical treatment of the data is pretty straight forward, the end result will be no better than the quality of the data on which it is based. Great care and insight are therefore called for.

The safest is to look at farmgate prices for inputs and outputs, and on the basis of these calculate values for intermediate products. These farmgate prices represent after all the real alternatives for both factors of production and the products themselves. For some of these there will be large seasonal fluctuations, for others the market will be influenced by the impact of the Centre both as buyer and seller, for some the market will be difficult to define, and for some there will be difficult to find reference prices at all.

market
A thorough/analysis must therefore be carried out. It must define the input and output market for the main operations, calculate price elasticities where required, and produce credible price estimates taking into account both the formal and the informal markets in Tanzania, as well as seasonal fluctuations. This exercise is not only necessary for the internal allocation of resources, it will determine whether and where the Centre can produce a marketable surplus with a profit.

As stated above, the obvious benefit of a linear programming approach to a study of this nature, is its general dynamic nature. When there is a shift in any of the parameters, it can be rerun with new assumptions and parameters, giving continual assistance to the management. It is somewhat costly to establish, but relatively cheap to maintain and run.

4.00 Plan of Work and Reporting.

- 4.10 The work plan is essentially given by the type of analysis outlined in part 3.00. It will consist of defining the assumptions and restrictions for the model, and estimate the parameters. This must be done together with ANC staff at policy and technical levels, by resource inventory at the Centre and by means of a marketing study.

One is cognizant of the fact that ANC wants to proceed at speed with a ranching study. This is one of the six sectors proposed included in the study as indicated in part 2.23 above. It is therefore proposed that this sector project is given priority in terms of depth of analysis, but it must be understood that the optimum size of operation of this project will depend on the outcome of the other sector projects. It is the simultaneous solution to the question of overall resource utilization which determines the design of each sector project.

But knowing the ANC priority with regard to implementation, the ranching project design can be developed in detail as the first sector project once the overall study is done.

- 4.20 The land use proposals will be described on site maps in scale 1:5000 together with general irrigation and drainage proposals and general bush clearing limitations. Other physical plans will be contained in diagrams showing the recommended development options and sequence of development.
- 4.30 The proposals and recommendations to be compiled in a comprehensive report which will be conferred with the ANC agricultural experts prior to final issue.

5.00 Staffing.

The work will be carried out with expert assistance from NORAGRIC (Norwegian Centre for International Agricultural Development) at the Agricultural University of Norway.

NORPLAN staff will assist in connection with sociological data collection and assessment, organizational planning and provide field support staff.

Expert assistance in areas relating to soil erosion, irrigation and marketing will be secured from Sokoine University.

5.10 Agricultural Economist. Study leader.

Halvor J. Kolshus

Ph.D. in Agricultural Economics

Act. Managing Director of NORAGRIC.

5.20 Agronomist.

Henning C. Svads

M.Sc. in Agronomy

Assistant Director of Research, NORAGRIC.

5.30 Animal Husbandry Specialist.

Odd H. Evjen Olsen

M.Sc. in Animal Husbandry

Techn. Assistant in NORAGRIC.

5.40 Sociologist and Organization Planner.

Arild Brock

B.Sc. in Social Science and

M.sc. in Sociology

Consultant in sociology and organization planning, NORPLAN.

5.50 Physical Planner.

Svein Korperud

M.Sc. Architecture and Rural and Urban Planning

Senior Architect, NORPLAN.

5.60 Supporting Staff.

Sokoine University of Agriculture. Experts on irrigation, soils erosion and marketing.

NORPLAN. Technical staff assistance.

6.00 Work Sequence and Time Schedule.

6.10 Work Sequence.

Phase 1. Study design and field mobilization.

Staff: Study leader
Sociologist
Time: Week 1
Location: Norway and Tanzania

Phase 2. Field Work.

Staff: Study leader
Agronomist
Animal Husbandry Specialist
Sociologist
Various experts of Sokoine University
Time: Weeks 2 - 5
Location: Tanzania

Phase 3. Data preparation, analysis, assessment, testing and synthesis.

Staff: Specialists of phase 2
Programmer/data specialist
Physical planner, as required
Time: Weeks 6 - 8
Location: Norway and Tanzania

Phase 4. Data review and conferring synthesis with ANC,
strengthening data base.

Staff: Study leader
Sociologist

Time: Week 9

Location: Tanzania

Phase 5. Final analysis and assessment, documentation,
final report and recommendation.

Staff: Study leader
Agronomist
Animal Husbandry Specialist
Sociologist (part time)
Programmer

Time: Week 10 - 12

Location: Norway.

Activity \ Week no.	11	12	13	14	15	16	17	18	19	20	21	22	
1. Mobilization	██████████												
2. Agricultural Economy													
- Field work		████████████████████				████████████████████							
- Analysis													
3. Agronomy													
- Field work	██████████		████████████████████			████████████████████				████████████████████			
- Analysis													
4. Anim.Husbandry													
- Field work			████████████████████			████████████████████				████████████████████			
- Analysis													
5. Sociology													
- Field work	████████████████████				██████████								
- Analysis						████████████████████							
6. Organization													
- Analysis							██████████	████████████████████					
7. Various Experts			██						██				
8. Reporting										██████████	████████████████████		