



ARDRI



University of Fort Hare
Together in Excellence

ANNUAL REPORT

1982

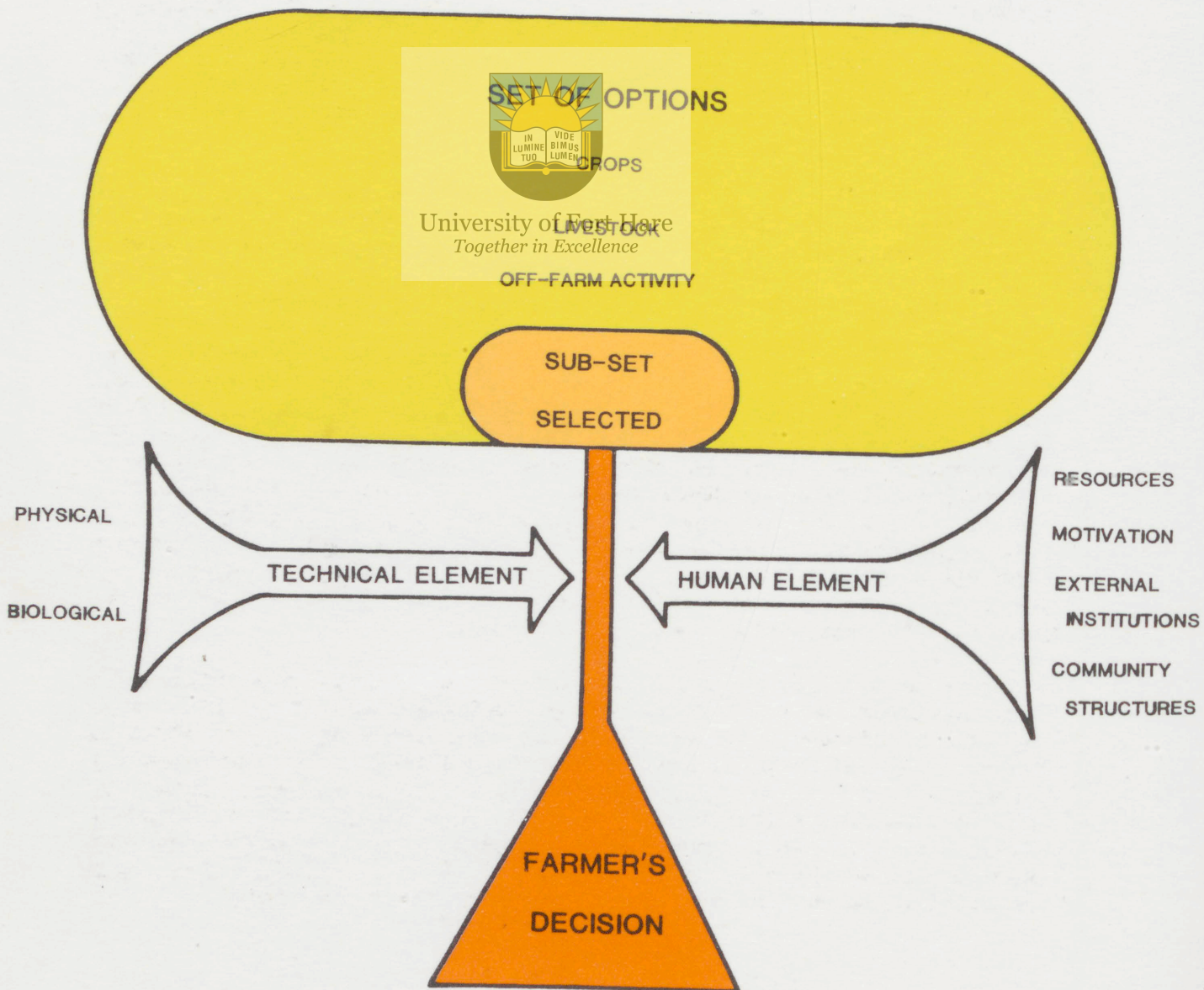
AGRICULTURAL AND RURAL DEVELOPMENT

RESEARCH INSTITUTE

FORT HARE

No 1/83

THE MAIN THRUST OF ARDRI'S ATTENTION SHOULD BE DIRECTED
AT THE STRUCTURE AND FUNCTION OF THE ECONOMIC, SOCIAL
AND TECHNOLOGICAL SYSTEMS REQUIRED TO SUSTAIN THE
COMMUNITY AND THE FAMILY.



1. HISTORY 1977-1982

ARDRI is an essentially self-funded organisation established at the University of Fort Hare during 1977. The Institute was born out of an awareness of the gap which exists, between agricultural theory and the achievements of modern agriculture on the one hand, and the almost total lack of application of this know-how in the exploitation of the inherent potential of developing Southern African States on the other. It seemed as though there was an inability to translate this knowledge into practically applicable and useful information acceptable to and understood by tribesmen and peasant farmers.

It was felt that the University of Fort Hare could make a real contribution in this area by bringing into being an organisation which could help solve many of these problems. With this in mind ARDRI was given the task of undertaking the promotion, planning and execution of agricultural and rural development research in developing areas in Southern Africa. It is advised by an Advisory Council which presently includes the Ministers of Agriculture of many of the developing Southern African States as members, as well as representatives from Development Corporations, the Department of Co-Operation and Development and donors. It is administered by a Director and staff working in close collaboration with its Board of Control, and subject to the authority of the University Council.

Though the Institute is closely associated with the Faculty of Agriculture, it is independent of it and, in fact, has members of several other Faculties on its Board of Control. ARDRI mobilises expertise in any faculty, particularly, the humanities and even from outside the University, in its efforts to assist development.

In the first five years of its existence the Institute has secured its position internally within the structure of the University, and externally in the development research field. As well as the individual research projects listed later, a development conference was organised at Fort Hare in 1981 drawing speakers and participants from the full spectrum of the development world. The methods and procedures for the identification, documentation and approval of research projects were established, and links between clients, researchers and research sponsors developed. A wide and valuable network of contacts in development corporations and research institutes, in both South Africa and Black National States has been built-up.

The year under review was dominated by two events. The Institute's first Director, Dr P J Burger, retired during the course of the year, and tribute is due to him for the sound base upon which ARDRI is founded. His enthusiasm, and the guide-lines laid down for research procedures will serve the Institute well for years to come. Secondly, an intensive investigation into the research needs of the Institute's client countries was completed, and as a result, a central research theme developed which will ensure that ARDRI's limited human and financial resources are invested to best effect in the future.

2. RESEARCH REPORT

2.1 General

The illustration on the inside front cover of this report represents pictorially the conditions governing the decision making process of the poor rural dweller, and the research theme adopted by ARDRI in response to these conditions.

Following an extended tour of the independent and self governing States, and meeting with a broad range of bodies including government departments, university research institutes and farmers, a list of problems affecting the rural areas was drawn up. Based on an analysis of these, and in consultation with the Advisory and Control Committees, a research approach was devised, and a series of specific projects intended as guide-lines for research was selected. (See Section 2.4).

To summarise, it is the Institute's intention, through the medium of systems research, to apply itself to the improvement of the quality of life of rural families and of the communities of which they are part. The on-going projects, even though some are technically based, fit into this pattern well, and future projects will be addressed more directly to family and community problems.

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2.2 Projects Completed in 1982

Shiela-Mooifontein

This report was commissioned jointly by the Department of Agriculture of Bophuthatswana, and the Research Division of the Department of Co-operation and Development. The Research Division met the financial costs of the two year project, while the Department of Agriculture bore the costs of the field survey and supervision of the data gathering.

The report was researched and written up over two years and presented to the Research Division in October. The depth and quality of the report has earned commendation for the research team. As always with field research, conditions were often arduous and trying, and ARDRI is very appreciative of the sacrifices made to produce the report.

Amatola Basin III: Present Land-Use: Animal Production

The objectives of the survey were to determine present livestock production trends and identification of constraints. Aspects covered were population characteristics and economic infrastructure, livestock production use, and veld condition. Recommendations were made on population distribution, veld management, extension programmes and future research.

Forest Farming I: Tree Farming Activities in Three Ciskei Rural Areas

This study examined the extent to which villagers participate in forest farming activities, and attempted to predict community response to new techniques. A high proportion of rural households have food-bearing trees, principally for home consumption with some sales. Recommendations were made on the upgrading of existing trees, and the methodology to be adopted with the introduction of new proposals.



Proposals for a Cattle Market Strategy for Transkei

This investigation was carried out as part of a commission by the Transkei Agricultural Corporation. The conclusions were that if stock numbers in Transkei were to be related to recommended carrying capacity, there was only a small potential for increasing offtake. Given the existing economic and institutional constraints, prescriptive remedies including improved marketing would have little beneficial effect, particularly as the existing market system was largely satisfactory, except in the case of low grade stock. Recommendations were based on improvements to the existing systems rather than overhaul.

Amatola Basin IV: Present Land-Use: Field Crops

The aim of this project was to provide a bench-mark of the field husbandry situation in the Basin for purposes of land-use planning. The agro-ecology of the area, characteristics of crop farmers, crop production practices and problems were covered. Recommendations were made as to target groups, on the removal of production constraints and on the type of production appropriate to the conditions.

ARDRI Research Needs

This project is covered in other sections of the report.

2.3 Progress on On-Going Projects

KwaZulu Beef Survey

During the year under review a pilot survey was conducted in the Mabedlana region of KwaZulu to test the efficacy of the questionnaire, the efficiency of the enumerators, and to uncover any unforeseen problems which might arise. The pilot survey did not reveal any major difficulties, except that the questionnaire was too long, which was overcome by revising the format.

Existing maps showing diptanks in Mabedlana and Ogwini regions were out of date and inaccurate, and the problem was complicated by the fact that mapping was done at different scales in the different districts. A joint effort by ARDRI and the Institute of Natural Resources of the University of Natal has resulted in the compilation of a map, as accurate as possible under the circumstances, on a scale of 1:250,000, which will be published with the final project report.

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After delays due to technical problems beyond ARDRI's control, the main survey was started in the Ogwini region of KwaZulu (Eshowe area) in October 1982. Fieldwork in this region was completed by the end of December, and the returned questionnaires have been coded and the data computerised, ready for further analysis. The fieldwork in the Ogwini survey was competently and speedily done considering the distances enumerators had to travel each day, and the Director and staff are to be congratulated on their effort, and are thanked for their co-operation.

Although considerable difficulties have been experienced in the Mabedlana region due mainly to staff changes resulting from retirements and promotions, it is hoped that the main survey in this region will start in March 1983 and be completed by the beginning of June 1983.

The unforeseen difficulties and delays experienced in getting the main survey completed on schedule has resulted in the final report on the project being delayed by at least nine months.

Forest Farming

The Forest Farming project is concerned with investigating the potential of sustainable cropping of non-arable land by means of shrub and tree crops, to yield food, fibre and wood for fuel.

Progress has been made in the establishment of a nursery on Fort Hare Farm and the planting of three field trials on outlying areas to test adaptability and agronomic requirements of a selected range of species. Investigations have been broadened to include evaluation of strategic products from crops such as Jojoba, Guajule and other rubber producing plants, in consultation with the CSIR and Stellenbosch University. An important new proposal is that the maintenance of a gene bank should be part of the project's activities.

Centoil

The Centoil project has as its objective the discovery and development of labour-intensive, high-income crops that are adapted to conditions in Ciskei and Transkei. In the course of the investigation a number of promising crops have emerged and limited commercial scale production has been commenced in order to test the depth and reliability of the market.

New crops showing promise in the early stage include the following:

- (i) Tagette (Khakibush) - the prime weed in Ciskei maize fields. The project has become established as a major world producer of this oil.
- (ii) Lanyana (Mhlonyane) - a market is being developed in France for the oil of this shrub, which is native to Ciskei.
- (iii) Pteronia - a weed which has invaded an estimated 60 000 ha of the semi-arid Ciskei. Extraction methods have been developed and a market is being sought.
- (iv) Eriocephalae - a very promising plant from the Drakensberg is being developed and tested in Ciskei.
- (v) Peppermint - promising advances have been made with this crop and field scale production is under way. The Centoil project is the only known Peppermint producer in Africa.
- (vi) Various herbs, spices and medicinal crops are being investigated.

Ecotope Evaluation

The two main objectives are, firstly, to assess empirically the cropping potential and management needs of the major dryland cropping ecotopes of Ciskei for both summer and winter crops. Secondly, to test or develop agro-technology transfer models which would then allow a successful transfer of knowledge, which has been gained elsewhere or within Ciskei, to the cropping areas of Ciskei.

Although only half way through the programme, initial results indicate that the ecotope provides a suitable vehicle for agro-technology transfer and the results with both summer and winter crops suggest that the cropping potential of certain soils require re-appraisal. The water sufficiency experienced by the crop is of overriding importance and the rainfall in Ciskei, which is neither a true summer nor winter rainfall region, must be taken into account in agro-technology transfer models.

The results also indicate that Ciskei has a reasonably high potential for wheat production.

Ciskei Fishery Project



The Ciskei Government and University of Fort Hare ARDRI investigate the potential for freshwater fish production in Ciskei and a three year programme has been drawn up to research the harvesting of fish in existing water bodies, the production of fish as an integral part of an intensive family-farm, education and training, and ventures ancillary to a fish industry. To date progress has been made on a resource survey, market survey, netting operations and a fish farm. It can confidently be expected that by the end of the first quarter of 1983, Ciskei will have its first independent fisherman on a commercial scale, and probably the first peasant farm incorporating fish production in Southern Africa.

The Amatola Basin Project

It has long been realised that a wide range of socio-economic and technical problems are currently putting a brake on the development of people in traditional rural areas. It is a large part of the Institute's task to research these problems on an inter-disciplinary project basis and then to plan and monitor the projects.

The first of these has been started in the Amatola Basin in Ciskei, and is unique to the rural South African development scene in that development inputs are to be spread over the entire

community and will cover all possible aspects of community life, instead of the more usual approach in which a single factor such as agriculture or health is concentrated upon.

The General Mining and Finance Corporation Limited (Gencor) commissioned ARDRI to undertake this 'study in human development,' at the end of 1978. The sanction of the Ciskei Cabinet was sought and obtained, and also that of the people themselves, through the Tribal Authority. A start was made on the 14th February 1980, in the Amatola Basin which had been selected by the Department of Agriculture and Forestry as being a suitable and representative dryland farming area, as by far the larger part of Ciskei is, and will remain, under dryland culture. Dryland farming has remained the Cinderella of agriculture despite the fact that the majority of the people are dependent on it, so the intention is to study and develop this aspect.

One of the first actions was to have constituted a Project Management Committee through which all actions would be steered. Grassroots involvement at the one end of the scale and Government commitment at the other are regarded as prerequisites of any scheme by which all aspects of the lives of the occupants could be affected.

A number of bench-mark studies of the area, against which progress can be measured, have been completed. As the project is aimed at research as well as practical development, this aspect has received more attention than in the case if development were the only aim.



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A social worker, Mrs P Goduka, was appointed to ARDRI's staff and is working full-time in the area. This is an unusual element in an agriculturally-biased rural development project, but the human element in agriculture is an aspect which, in ARDRI's opinion, is often ignored. Where cultural differences further complicate what is usually an already complex situation, it is felt that the human factor should receive great attention.

A further innovation has been the introduction, from the start, of short-term mini-projects aimed at improving different aspects of the people's lives. These will be introduced throughout the project to maintain interest and enthusiasm, while the long-term aspects, such as improvement of pastures and the running of field trials to improve crop yields, slowly mature. Adult education programmes will form part of the plan, and will strive to impart new ways of thinking and acting to improve the standard of living and quality of life of the people in the Amatola Basin.

Progress in the first three years has been in the following areas:

1. Change has taken place in the people themselves. Besides a growing awareness of physical things happening within their immediate environment and, in many cases, an actual increase

- 2.4 Future in knowledge and understanding, the Basin's inhabitants have to some extent become change conscious, especially in regard to social needs. They are realising that problems can be overcome if they organise themselves properly and use the correct approach.
- The Institute's research in the immediate future, in addition, proposals are being prepared for the establishment of
2. In the category of social needs much has been achieved in obtaining better services, eg. bus transport, better postal and telephone services, better roads. The institution of a community-centred school feeding scheme, entirely self-organised and financed, is seen as a remarkable achievement by the women - both staff and Basin dwellers.
 3. The women did not stop here, but exhibited the need and enthusiasm to become productively engaged in industry. 'Wonder Boxes' were followed up by the production of hand-made 'Teddy Bears' under contract, and at present the sewing group is executing orders for girls' school tunics from seven of the nine local schools, plus four schools outside the Basin. This is an industry which is operating along strictly business lines, and which will be expanded as soon as proper facilities are available. Several schools are on the waiting list.
 4. In the agricultural field an important development has been achieved with the establishment of a commercial vegetable garden and an orchard of mixed fruit trees, all under irrigation. In addition, a group of farmers has, through the aegis of the Tribal Authority, secured a loan from the Ciskei Agricultural Loan Promotion Fund. This has been made possible, by the consolidation of separate fields into a single block, the application of mechanisation and modern inputs to their maize production.

KwaZulu Extension Service Investigation

During the year under review, the questionnaires were processed by the computer and analysed. A visit was made to KwaZulu to meet the Regional Directors and other senior officials to clarify certain problems which arose from the initial findings.

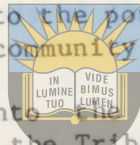
A draft report has been typed and at present is being checked and scrutinised and the final report will shortly be completed.

It is hoped that the report will be available within the next two months.

2.4 Future Proposals

The following projects have been selected by the Control Committee as the basis for the Institute's research in the immediate future. In addition, proposals are being prepared for the establishment of a small-farms research unit on the Fort Hare Farm, which will research problems of the subsistence farmer, both on a research farm and on the field. This will both lead to a better understanding of constraints, and provide a test-bed for proposed technologies.

1. A detailed investigation into the micro economics of three rural communities.
2. An investigation into indigenous crop-growing, storage and preparation technologies.
3. A cost/benefit analysis of maize production on the subsistence economy.
4. An investigation into the potential contribution of women in the development of community structures.
5. An investigation into the stated and perceived role and responsibilities of the Tribal Authorities.
6. An investigation into the land allocation practices in Ciskei, and their effect on future agricultural development.
7. An investigation into appropriate land-use patterns in recently consolidated land.



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2.5 Research Statement

1. Proposed Projects

1. 'Best Farmer' norms.
2. Buffalo Basin II: Soil Survey.
3. Buffalo Basin IV: Land-use.
4. Buffalo Basin V: Socio-economic Survey.
5. An investigation into indigenous crop-growing, storage and preparation technologies.
6. A cost/benefit analysis of maize production in the

4. subistence economy.

7. An investigation into the present contribution of women, and an assessment of their potential in the development of community structures.
8. An investigation into the stated and perceived role and responsibilities of the Tribal Authorities.
9. An investigation into de facto allocation practices in Ciskei, and their effect on future agricultural development.
10. An investigation into appropriate land-use patterns in recently consolidated land.
11. Development of a simulated Ciskeian farm unit.

2. Approved: Being Established

1. Micro systems study of three rural communities.

3. On-Going Projects



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1. Databank 79003.
2. General Mining (Amatola Basin) Master 79014.
3. Amatola Basin V: Present Land-Use: Horticultural Crops.
4. Amatola Basin VIII: Forestry and non-agricultural land-use.
5. Ecotope.
6. Centoil.
7. Beef Production: KwaZulu.
8. Extension Service: KwaZulu.
9. Fish Farming (Ciskei).
10. Publication of book: Tukulu.

4. Completed by 31/12/1981

1. Makatini I 79005.
2. Makatini II 79006.
3. Mount Pleasant 79007.
4. Ncore Evaluation 79008.

Following negotiations were initiated by the Transkei Department of Agriculture and Forestry for the provision of a long-term continuous livestock development in Transkei. These negotiations are close to completion and work should get under way in 1983.

5. White Kei 79009.
6. Compress 79001.
7. Newsletter 79002.
8. Buffalo Basin I: Vegetation Survey 79004.
9. Amatola Basin I: Soil Survey 80001.

10. Amatola Basin II: Pasture Survey.

11. Buffalo Basin III: Pasture Evaluation.

12. Xonxa Evaluation.

13. 'Africa 2000' University of Fort Hare
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14. Amatola Basin IX: Geology and climate.

5. Completed in 1982

1. Amatola Basin III: Present Land-use: Animal production.
2. Forest Farming I: Tree farming activities in three Ciskei rural areas.
3. Proposals for a cattle marketing strategy for Transkei.
4. Shiela-Mooifontein Evaluation.
5. Amatola Basin IV: Present Land-Use: Field crops.
6. ARDRI research needs.

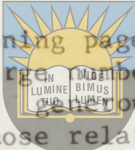
3. CONSULTANCY SERVICE

In terms of its institutions, ARDRI is empowered to provide advice and to perform a consultancy function for homeland governments, at their request. In 1982, an investigation into the potential for cattle production in Transkei was completed, and a set of recommendations on cattle marketing submitted to the Transkei Agricultural Corporation. This organisation not only commissioned the investigation, but contributed materially to its satisfactory conclusion.

Following on this, negotiations were initiated by the Transkei Department of Agriculture and Forestry for the provision of a long-term continuing consultancy on livestock development in Transkei. These negotiations are close to completion and work should get under way in 1983.

4. ACKNOWLEDGEMENTS

It is obvious from the opening page of this report that the Institute is heavily dependent on a large number of people. The major research sponsors and donors, whose generous financial support is rendered without conditions except those relating to financial management, make it possible for ARDRI to function and to do so according to its own research ethic.



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Support from the Rector, Registrars and Administration of the University is constantly offered, and is indispensable. Project leadership is provided almost entirely by full time academic staff in the Faculty of Agriculture, who must undertake this sometimes arduous and not always rewarding task in addition to their normal teaching load. The Chairman and members of the Control Committee provide valued guidance and support to the Director at all times.

Finally, the Institute is sparsely manned for the tasks it is undertaking but all staff willingly accept the considerable load imposed upon them. Their support and enthusiasm is gratefully acknowledged.