

# ARDRINEWS

*Agricultural and Rural Development Research Institute • Newsletter • April 1993*

UNIVERSITY OF FORT HARE



## **AGRICULTURAL AND RURAL DEVELOPMENT: THE INTERNATIONAL CONNECTION**

**and**

### **Special Report on Drought Relief**





## DIRECTOR'S CORNER

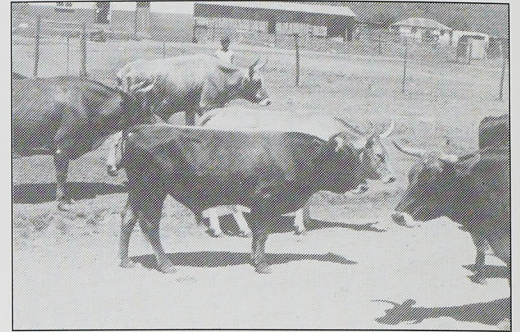
### The tragedy of the commons: a different perspective

The casual observer of communal grazing areas sees too many animals on the land and immediately thinks of reducing the numbers by marketing the "surplus" animals. The total herd on the commonage may be too large, but in reality by far the majority of individual owners have no surplus to sell. Marketing decisions are made by individuals, therefore marketing schemes to siphon off the perceived surplus have very little chance of success if the individual has no real surplus.

Overstocking can lead to poor animal condition at critical times in the reproduction cycle. Poor condition at mating time results in very low conception rates, and during lactation or at weaning it results in high mortality rates amongst the offspring. The end result is that fewer animals are born and more die than would normally be the case on a commercial farm, and you cannot sell an animal that wasn't born or did not survive.

Access control is the critical issue. Veld management and marketing schemes are second phase activities. But access control can only function if the individuals sharing common ownership rights are clearly identified, their rights defined, and institutional structures are in place to enforce the rules of the game.

**Almero de Lange, Director**



*Access control is critical to animal condition, which affects conception and survival rates*

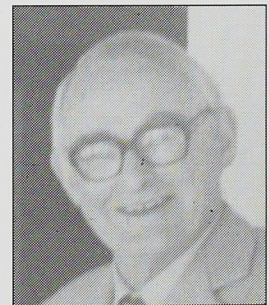
## STAFF NEWS - DEPUTY DIRECTOR

Mr Harry Ward retired as Deputy Director of ARDRI in November 1992, a post which he had held since January 1988. In addition to the administrative demands of the position, he was particularly involved in the Kubusi project, and in liaison with researchers in the Faculty of Agriculture at Fort Hare. He also played a major part in establishing the Institute's FSR-E capacity.

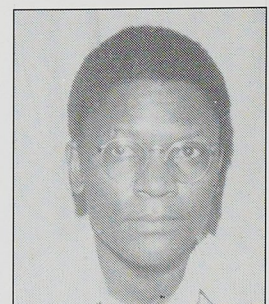
Harry brought to the Deputy Directorship a wealth of experience in the field of animal science, much of it gained during his 17 years as Head of the Matopos Research Station in Zimbabwe. Harry's expertise, dedication and humour will be missed at ARDRI, and the Director and staff wish him a happy retirement.

In filling the vacancy left by Mr Ward, ARDRI is fortunate to have recruited Mr Fuzile Mkatini as Deputy Director. A graduate of the Universities of Fort Hare and Edinburgh with specialisation in animal production and health, Mr Mkatini has worked in the areas of rural development and pastoral research. He has also been a farm manager in South Africa and abroad.

Looking forward to his work with ARDRI, Mr Mkatini believes that redressing the extreme poverty and hunger in rural communities is the priority for rural development. He sees his new appointment as an opportunity to work, **together with the communities** and other relevant agencies, towards this goal.



*Mr Harry Ward,  
former Deputy Director, ARDRI*



*Mr Fuzile Mkatini,  
new Deputy Director*



# AFRICA-WIDE CONFERENCE ON ANIMAL AGRICULTURE

The first All Africa Conference on Animal Agriculture, held in Nairobi during November 1992, was well supported by ARDRI and the Faculty of Agriculture at Fort Hare University.

The conference was organised by the Animal Production Society of Kenya and attended by delegates from eleven African countries. Also present were Dr R Blair, President of the World Association for Animal Production, and Dr E P Cunningham, Director, Animal Production and Health Division, Food and Agriculture Organisation, United Nations.

## Historic

This was a historic conference in at least two ways. Firstly, it was the first Africa-wide conference on animal agriculture organised by one national society specifically with the purpose of bringing people together. Secondly, contact between South African animal scientists and their African colleagues has never happened on this scale before. Indeed the South African delegation of 28 was second in size only to that of the host country.

## Common ground

Enthusiasm at the conference was high, and the deliberations stimulating and wide-ranging. Some of the lasting impressions left by the conference were: the diversity of environments and production systems found on the continent; the belated rediscovery of the usefulness of indigenous breeds, their potential to fit specific needs in terms of the natural and socio-economic environment, and the need to characterise and test them in diverse production systems; the over-riding importance of maintaining natural grazing and tree forage as the primary resource base of livestock production; and the need for an all-African approach to animal disease control, with each country following a definitive protocol.

## Structures for collaboration

On the fourth day of the conference, a special meeting was convened to ask the delegates two things: was there a need for a similar conference in future; and was there a need for a continental association for animal production, similar to the European Society for Animal Production?

The answer to the first question was a unanimous "yes". The offer of South Africa to host it was accepted with alacrity, and 1995 was supported as a probable date.

On the second question, an interim committee was appointed to liaise with all the countries on the continent, to look into this matter. Professor de Lange, Director of ARDRI, was appointed to this committee which is chaired by Dr Rege of Ethiopia, and also includes members drawn from Kenya, Tanzania, Senegal and Nigeria.



*Director of ARDRI, Professor A O de Lange in conversation with Dr Collins Lusweti of the University of Bophuthatswana*

## Papers presented by Fort Hare staff

**Prof A O de Lange:** "Critical determinants for successful small-scale livestock production"

**Mr F S Lategan:** "The influence of perceived problem magnitude on stocking rate decision-making in the southern Kalahari region of Namibia"

**Prof J G Raats:** "Browsing behaviour of goats"

**Prof W S W Trollope:** "Assessment of range condition as a means of formulating range management practices in the grassland and savannah areas of South Africa"



*Entertainers providing some lighter moments for the delegates*



# SMALLHOLDER AGRICULTURE: AN INTERNATIONAL PERSPECTIVE

Smallholder farmers are a common feature of all developing countries, although the definition of "small" varies from region to region, and can often be associated with complex land tenure systems. The majority of black farmers in Southern Africa can be classified as smallholders, operating at different levels of subsistence.

In November 1992, Professor C.T. Kadzere of the Department of Livestock and Pasture Science at the University of Fort Hare, participated in the International Seminar on Livestock Services for Smallholders. The conference was held in Yogyakarta, an important centre of culture and higher learning in Indonesia, and was attended by over 300 delegates from 41 countries.

## A shared agenda

The purpose of the seminar was to set up an international forum to discuss and critically evaluate the delivery of animal health and production services to smallholder farmers in the developing world. The programme was structured to lead through a sequence of activities from identification of problems, to seeking solutions and delivering the benefits. This reductionist approach of considering the overall question topic by topic was interspersed by opportunities to develop a more holistic view during discussion sessions, and on the final day of the conference.

## Indonesia and the Indonesian smallholder

Lying across the equator at the extreme south of the Asian land mass, Indonesia is made up of a chain of almost 14 000 islands. The Moluccas, near the centre of the chain, were the "spice islands" which attracted international traders of the 16th and 17th centuries.

Indonesia has the fifth highest population in the world, with most of the country's 190 million people living on the larger islands of Java, Bali, Borneo - the third biggest in the world - and Sumatra.

The oil-boom of the 1980s allowed rapid economic development, and oil and gas continue to provide around 50% of export earnings. There is an important tourism sector, and industry and services now account for almost 80% of GDP. There remain wide inequalities in wealth, however. Around 70% of the population, and more than half of the national labour force, live in the rural areas, but agriculture accounts for only about 20% of GDP.

Most rural households depend for their income and subsistence on rice, although a wide variety of other crops are also cultivated. The construction and maintenance of hillside rice terraces are labour intensive, and there is virtually no mechanisation. Draught power is derived almost exclusively from buffalo and cattle, and buffalo have special cultural and religious value.

*The "top down" approach, which has marginalised the farmer in the past, must give way to one which tackles problems from the "bottom up".*



*Rice planting - a labour intensive process*



## Livestock innovations

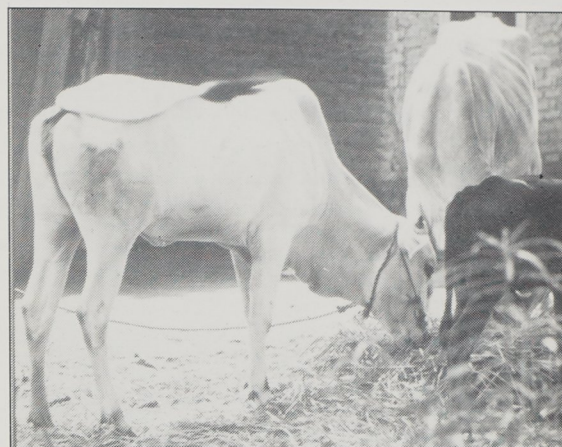
Both during and after the conference, there were opportunities to visit smallholder producers. Particularly in Java, where the average holding for a smallholder household is 0.5 ha, land is a scarce resource and must be utilised very economically. Cattle, sheep and goats are often reared tethered to trees alongside the house, and fed grass collected from roadside verges.

Farmers show great ingenuity in the use of indigenous materials and appropriate methods. In places, poultry are housed over fish ponds and the manure is used to feed the fish. At one village, conference participants were shown a battery layer system constructed from bamboo.

This approach is endorsed by the Indonesia International Animal Science Research and Development Foundation, the host institution for the seminar, and by a number of universities. Animals used in research into milk production from indigenous goats at Gaja Mada University, for example, are housed using locally available cheap building materials. The aim is to keep research simple and functional, and to simulate farmers' production conditions as far as possible.

## Priorities

The proceedings of this conference are soon to be published. Major points emerging were: the importance of liaison between veterinarians and livestock production scientists; the need to consider the environmental impact of any livestock project; sustainability of livestock production systems; and the fact that all planning of livestock developmental issues should emphasise farmers' participation. The "top down" approach, which has marginalised the farmer in the past, must give way to one which tackles problems from the "bottom up".



*Because of lack of grazing space, cattle and buffalo are tethered to trees on the homestead. All feed, including agro by-products such as straw, is brought to them.*

# DOWN UNDER ...

In February, two members of the Department of Livestock and Pasture Science at Fort Hare presented papers at conferences in New Zealand and Australia. Andrew Beckerling was invited to present a paper at the Rangeland Monitoring Workshop in Perth, Western Australia (WA). The workshop was a tremendous success and the concept of Key Species which is promoted in the ARDRI Iqunde Project was well received. There are lessons to be learned from the range monitoring programme in WA, and these will be reported on in the next issue of ARDRINEWS.

Professor Winston Trollope attended the International Grassland Congress in New Zealand and Australia, and presented poster/papers on *Key Species - a solution for the assessment of range condition* (in collaboration with A C Beckerling) and *Effects of the fire regime on grassland and savanna rangelands in southern Africa*. Fire is becoming recognised as an important tool in the management of rangelands and the paper stimulated lively discussion and requests for additional information. More on this, also, in our next edition.



# RURAL WATER SUPPLIES - CHALLENGE AND RESPONSE

A combination of periodic drought, population expansion, and insufficient planning has left many rural communities dependent on barely-adequate water supplies. Where the handpumps and windmills on which many of them rely have not been maintained, people are forced to collect water from stock dams, to hire carriers to transport water, to buy from farmers and to walk long distances to rivers and springs. Water from defective storage-tanks can be rusty and unpleasant-tasting, while in some cases community alienation has led to sabotage of existing supplies.

Organisational structures to tackle this problem have evolved rapidly over recent months, and since mid-1992, ARDRI has been part of the team working to improve access to water in the Border region.

## A national approach

Based in Pretoria, the National Consultative Forum on Drought was initially set up as an emergency measure. Operating through a series of task teams in the areas of water supply, employment and nutrition, the NCFD works to channel resources from major funding agencies including the Independent Development Trust (IDT) and Kagiso Trust. In response to changing circumstances, the NCFD also develops strategies to refine its own performance, and as a contribution to the general debate on economic and community development.

The Forum is made up of representatives of a large number of bodies including the South African government, IDT, political parties, the trade unions, civics, Development Bank of Southern Africa (DBSA) and representatives of regional drought relief organisations, with which and through which the NCFD works. Implementation of decisions is facilitated through a steering committee, in collaboration with an operations section and secretariat.

## The immediate problem

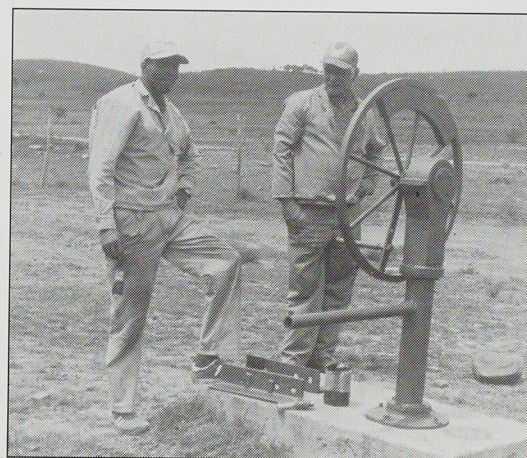
Major short-term challenges as identified by the NCFD include: prioritisation of relief efforts; coordination of drought relief activities; and ensuring a voice for communities and community structures in relief and associated efforts. Crucial to this overall strategy is the role played by regional drought relief organisations, and here Border has played a leading role.

## BRDF

Border was one of the first regions to respond locally to the drought crisis. Because of this, a structure was already in place with which the NCFD could work here, and since August 1992, a two-way relationship has developed between the Border Rural Development Forum (BRDF) and the NCFD through which BRDF implements centrally-defined policies, but also provides feed-back on the real and anticipated needs of local communities.



*Broken head gear from a windmill lies beside a storage tank. The tank, fed by another windmill downhill, is overflowing because it relies on this windmill to pump the water to a second tank further uphill. People living near the empty upper tank have to walk to collect the water they need.*



*Members of a repair team*



Like the NCFD, the BRDF is made up of representatives of a wide spectrum of political organisations, government departments, funding agencies, NGOs, farmers' associations and community groups. As with the national body, it is structured through a series of task teams, with the main focus currently on drought-relief. In encouraging the participation of as many similarly-oriented bodies as possible, the aim has been to avoid duplication of activity and to achieve cooperation and transparency. ARDRI is represented on the Forum, as well as on its executive committee, and the Institute also provides secretariat services and working space.

### Priority action

One of the first tasks of the BRDF was to take part in the assessment of immediate needs, to ensure that every community had at least minimal water supplies. Repairs to windmills and other equipment were made as a result of technical evaluations by water engineers, officials from the Department of Water Affairs and BRDF community-liaison officers. Where possible, local labour has been used.

Major repairs are carried out first, simply to get water pumping, with return trips, where necessary, to deal with smaller items such as brakes and tailsprings. A major constraint has been the availability of spare parts. In some cases it has been possible to strip irreparably damaged facilities, but this has often required the permission and cooperation of the responsible authority, a time-consuming and sometimes delicate process.

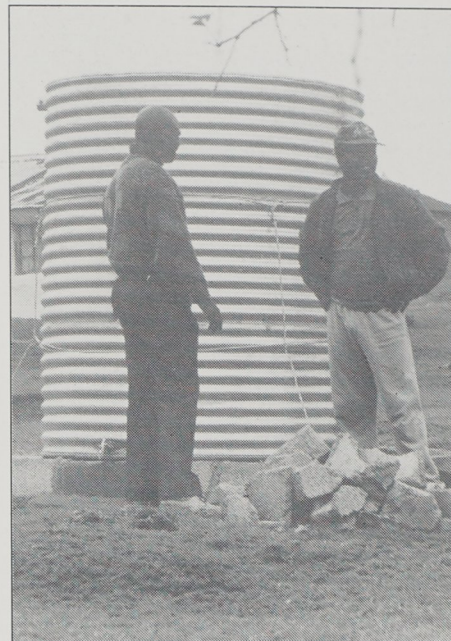
Despite these and other problems, however, around thirty windmills and pumps in various parts of Ciskei, previously out of action, are now working again, and repairs have been carried out to pipelines and reservoirs. In villages with no available water at all, corrugated iron tanks have been installed, and these are supplied by tanker from the Ciskei Department of Public Works.

### Longer-term needs

Both at national and regional level, it is recognised that emergency drought relief can and should only be a temporary measure, and that the objective must be a planned infrastructure which will ensure a permanent and dependable water supply for all.

Economic development and redistribution is of crucial importance, as is the encouragement of a spirit of self-reliance in communities which previously have had to depend on government and other agencies. This sense of self-reliance will be particularly important given the explosion of expectations which will face a future South African government.

The experience of the BRDF and its associated drought relief agencies has shown the need for accepted community structures with which outside bodies can work, and through which people can make their needs felt. Tasks facing such structures will include the simple - such as reminding children not to leave taps running after they stop for a drink on their way home from school - to the highly complex. Success will require determination and dedication on a massive scale.



*Community-liaison officer Howard Stofile (left) discusses water problems beside a recently-installed emergency tank*



*Back at work - a windmill in operation again*



# FSR-E TEAM UPDATE

Since its establishment in 1992, the ARDRI Farm Systems Research-Extension (FSR-E) team has developed and consolidated its work with rural communities. A major objective of the four-person team (two agronomists, one livestock specialist and a community liaison specialist) is to research the needs of rural communities, and to provide advice and support to help them to reach their goals.

## Livestock

Last August, the FSR-E team organised a poultry training course at the request of People's Agricultural Development (PAD), in association with the Wilgespruit Fellowship Centre. Subsequently, fifteen poultry projects were started. Each one consists of three to four people, mainly women. The poultry are generally housed in whatever buildings are already available to project members on their own properties, including spare rooms, rondavels and garages. Some members have also constructed separate poultry houses.

## A learning process

The projects began by raising dual purpose chickens, which are more hardy than broilers, and also eat less feed. However, growth rate proved to be low in comparison to broilers, and at six weeks many weighed less than 1 kg. For the next intake, many project participants opted for broilers which reach marketable size at six to seven weeks. Buying in of the third batches of chickens was timed so that they would be ready for the Easter season.

Any new initiative is likely to confront unforeseen difficulties, and the poultry projects have not been immune from these. Problems of feed wastage due to the use of wrong feeders, temperature control both in summer and winter, the lack of cheap litter materials, and poor initial marketing have all had to be tackled. However, with guidance and support many are on the way to rectification.

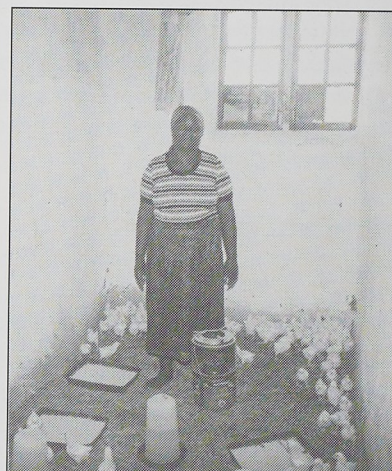
## Vegetable producers

At the request of field officers of the Border Rural Development Forum (BRDF), FSR-E team members visited Zalaze irrigation project several times to study their present crop practices. Subsequently, two one-day training sessions - on irrigated vegetable production and dry land maize production - were conducted. The training took place mainly in the field, and concentrated on improving crop production with no, or minimal, additional cash inputs. Follow-up visits suggested that there had been very good adoption of ideas. At present, the irrigation system is being extended to a larger capacity.

A similar, five-day training programme was conducted at Tanga in Butterworth district. Most of the trainees were Butterworth extension workers and Tanga farmers. These farmers have completed an initial phase of irrigated vegetable production, and are now beginning a second phase.



*This project member has constructed purpose-built housing for some of her chickens*



*An alternative solution - here spare space in a dwelling house has been used*

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