

## Section 2

# Better Lives for Livestock Keepers:

Improved Livestock Production & Health

Combating sleeping sickness in cattle and people

**A safe, accurate and easy-to-use test is now available to screen for trypanosomes.** Spread by tsetse fly, these tiny parasitic organisms cause serious diseases like nagana in cattle and sleeping sickness in people. Previously, screening to prevent the spread of these diseases was slow and inaccurate. Now, just one drop of blood is enough to provide the DNA needed for analysis, and this can easily be attached to a sample-collection card and posted to a laboratory for testing.

The system could have a major impact on livestock and on poor producers' health and livelihoods, and is already being used in parts of Uganda, Zambia, Tanzania, Nigeria, Malawi, and Zimbabwe. But, because most people aren't aware of its benefits, this ready-to-use technique urgently needs to be promoted.

■ Find out more by typing **AHP01** into the search box on the search page of the CD attached to this book.

**Project title:** Diagnostics for identification and differentiation of African trypanosomes

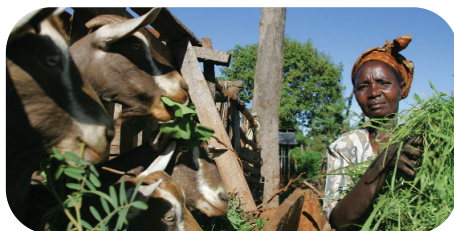
Waking up to better ways of tackling sleeping sickness

**New, cost-effective ways of controlling sleeping sickness in people and nagana in cattle are being applied in Uganda.** These techniques involve treating infected cattle with drugs that kill blood-borne trypanosomes (which cause these diseases), and applying insecticides to the specific parts of the cattle that tsetse fly bite to feed (like the legs and belly).

Conventional methods of tackling sleeping sickness concentrate on detecting and treating human cases and killing the tsetse flies that spread the disease. But, this doesn't address the fact that cattle are the major reservoir of the disease. In fact, almost 50% of the cattle living in some areas carry the disease. The new methods that have been developed offer a way of combating the problem at source.

■ Find out more by typing **AHP02** and **AHP10** into the search box on the search page of the CD attached to this book.

**Project title:** Control of zoonotic sleeping sickness by treatment of domestic livestock



An easy-to-use  
computer program to  
help plan farmer-friendly  
tsetse control

**A range of new information is now available to make people aware that effective farmer-friendly control methods do exist for tsetse fly, and to help them plan better ways of putting them into practice effectively.**

Examples include an easy-to-use program called 'Tsetse Plan', which helps users design and implement tsetse control using bait techniques like insecticide-treated cattle and odour-baited traps. A range of other information is also available, including slide shows (demonstrating how technologies like traps can be built) and the [www.tsetse.org](http://www.tsetse.org) website, which contains a wealth of information.

These resources are now being used across many countries, including Ethiopia, Kenya, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. However, tremendous scope still exists to extend this coverage.

■ Find out more by typing **AHP05** into the search box on the search page of the CD attached to this book.

**Project title:** Tsetse plan, an interactive computer program ...

Better planning for  
tsetse control

**A user-friendly decision-support tool called 'Tsetse Muse' is now available to help users better plan and budget when using the many different methods of tsetse fly control available.**

Tsetse flies affect 10 million square kilometres in tropical Africa, where they transmit the trypanosomes that cause sleeping sickness in humans and nagana in livestock. Plus, the flies can easily travel large distances. This means that tsetse controls are very difficult to plan, as they have to be applied over very large areas at once—often in combination.

The 'Tsetse Muse' computer programme can help these efforts in a number of ways, and is already being applied in Botswana, Uganda, Mozambique and Zimbabwe. Uses include assessing the impact and cost effectiveness of techniques like aerial spraying.

■ To find out more, please type **AHP15** into the search box on the search page of the CD attached to this book.

**Project title:** Tsetse Muse, an interactive computer programme ...

## A cheaper tsetse control method

**An improved technique for tsetse fly control is available that even poor producers can afford.** The new method, known as restricted insecticide application, relies on the fact that tsetse tend to only bite the legs and stomachs of cattle. Spraying just these areas with an insecticide every two to four weeks kills tsetse fly for a cost of only around 1 British pound per animal per year.

There are other benefits too. For example, the technique means that animals still get bitten by ticks when they are young. This allows them to build up an immunity to the diseases carried by ticks. In Uganda, Zambia and Burkina Faso, the technique has already been shown to have reduced the incidence of trypanosomiasis—the devastating disease which tsetse carry.

■ To find out more, please type **LPP14** into the search box on the search page of the CD attached to this book.

**Project title:** Tsetse control through restricted application of insecticide to cattle

## New strategies to control worms in goat keepers' herds

**Researchers working in South Africa have produced a range of information that will help producers and extension workers to identify and treat the effects of worm infestation in goats.** Currently, heavy worm loads greatly reduce the number of kids that goats produce, as well as the number that live to be weaned. This badly affects the livelihoods of resource-poor farmers.

Using simple techniques to identify and treat animals with worm-caused anaemia is one option that has already been shown to work. The project has also produced, tested, and revised a goat keepers' health care manual and booklets to help producers deal with worms in their goats, sheep and cattle.

■ To find out more, simply type **AHP06** into the search box on the search page of the CD attached to this book.

**Project title:** Control of worms in goats in southern Africa ...

There for the picking:  
cheap feed options and  
worm treatments

**Research in Zimbabwe, Tanzania, Uganda, India and Kenya has identified tree fruits as a promising option for improving the diets of goats.**

Poor goat keepers can't afford to buy commercial feeds to supplement diets in the dry season. This causes slow growth and high death rates among kids—which are mainly born either at the end or at the beginning of the dry season. Tree fruits are a good cheap option to feed pregnant or suckling goats, because they can easily be collected and stored for use when needed.

Related research in Tanzania has also shown that tannin-rich tree forages could help to reduce the amount of worms in the stomachs of sheep, improving productivity and the animals' health.

■ To find out more, please type **LPP16** into the search box on the search page of the CD attached to this book.

**Project title:** The role of tanniferous tree products for improved livestock productivity ...

Easy diagnosis of  
livestock diseases

**New methods have been developed to check the health of animals in areas of sub-Saharan Africa where vets are in short supply.**

One is a cheap, reliable low-tech instrument which can be used to test whether or not livestock are anaemic. Known as a haemoglobinometer, this easy-to-carry device could make a real difference to smallholder farmers since the presence or absence of anaemia is a key indicator of animal health in the tropics.

A decision-support tool has also been developed to complement the haemoglobinometer. The colour-banded card helps users to match symptoms to eight major diseases and guides them towards the most likely diagnosis. The decision tool is already being used in Uganda and Eastern Zambia. However, great scope exists to expand its use.

■ To find out more, please type **AHP07** into the search box on the search page of the CD attached to this book.

**Project title:** Effective decision support tools for diagnosis of endemic diseases of livestock ...

## A new animal health and livestock training network for sub-Saharan Africa

**A new network of African universities is being developed to produce teaching materials for disseminating the results of DFID-funded research into animal health and livestock production in sub-Saharan Africa.**

It aims to overcome the fact that the massive amount of DFID-funded research done to improve animal health and livestock keeping has had very little impact—mainly because new knowledge simply isn't reaching the people who need it.

The African Universities' Veterinary E-Learning Consortium (AUVEC) therefore aims to provide bite-sized, easy-to-revise, distance-learning materials that animal health professionals can use to regularly update their knowledge and skills. This developing network consists of veterinary departments and veterinary bodies in Ethiopia, Kenya, South Africa, Sudan, Tanzania, Uganda, Zambia, Zimbabwe and Malawi.

■ To find out more, please type **AHP08**, **AHP11**, or **AHP12** into the search box on the search page of the CD attached to this book.

**Project title:** Transforming existing animal health and production research outputs ... (AHP08); African Universities Veterinary E-learning Consortium: a network for ... (AHP11); African Universities Veterinary E-learning Consortium: creation of ... (AHP12)

## Pro-poor vaccine-based control of East Coast fever

**In Central and East Africa, work is ongoing to give producers access to effective vaccines that will protect their cattle against the devastating disease East Coast Fever.** This could greatly improve the lives of poor livestock keepers, as East Coast fever is responsible for about half of all calf deaths in pastoral and agro-pastoral production systems in these areas.

One thrust of these efforts is the promotion of the infection and treatment method (ITM), which has already been shown to be effective but which has not been widely taken up for a variety of reasons. Other efforts are concentrating on the development of next-generation vaccines that are safer, cost less, and are easier to transport.

■ To find out more, please type **AHP14** into the search box on the search page of the CD attached to this book.

**Project title:** Pro-poor vaccine-based control of East Coast fever



## Beating brucellosis and bovine tuberculosis

**To boost livestock production and improve people's health, researchers in Tanzania have been working to increase people's knowledge of brucellosis and bovine tuberculosis—diseases which cause long-term illness in people and production losses in livestock.** In Tanzania both diseases are a growing problem, and lack of knowledge is the major barrier to efforts to stop their spread.

This work has involved identifying the groups most likely to be affected by the diseases and developing better ways of showing them how contamination can be avoided—such as boiling milk, and taking extra care when handling raw milk and placentas. Work to educate health practitioners and vets has also given good results, because diseases like brucellosis are often misdiagnosed and mistreated. These findings are already being applied in 12 Sub-Saharan African countries.

■ Find out more by typing **AHP04** into the search page of the CD attached to this book.

**Project title:** Identification of risk factors for tuberculosis (TB)/brucellosis and dissemination of messages to at-risk populations.

## Controlling the threat of rabies

**In Tanzania, vaccinating domestic dogs has proved to be a very effective way of fighting rabies—because they are the major reservoir for the disease.** In fact, in areas where trials have been run, they slashed both the number of cases of rabies in dogs and the number of dog bites by more than 90%.

Currently rabies badly affects the poor in rural and semi-urban areas, causing illness, death and livestock losses. The poor, for example, can least afford treatment and so are most likely to develop the disease once they have been bitten. Children are also particularly vulnerable to rabies, and are most likely to die from the disease if they develop it. This effective new option could save countless lives in many other countries.

■ To find out more, please type **AHP03** into the search box on the search page of the CD attached to this book.

**Project title:** Design of rabies control programmes for domestic dogs

## Fussy eaters: improving the benefits of dry-season feed

### **A newly developed self-selection technique can boost the amount that stall-fed animals will eat.**

Sorghum stover is a traditional and important dry-season forage in countries like Ethiopia, Tanzania and Kenya. However, it isn't particularly nutritious or palatable—so animals often don't eat as much as they should.

Research has found, however, that giving animals much more stover than they need allows them to select the tastiest bits of feed. This means that they eat much more. Plus, the feed that they reject isn't wasted, because it can be treated with urea to make it more palatable and then fed to them again. Promoting this simple technique could make a real difference to the lives of smallholders who struggle to keep their animals healthy.

■ To find out more, please type **LPP06** into the search box on the search page of the CD attached to this book.

**Project title:** 'Self selection' and other methods to improve the quality of fibrous crop residues

## More informed decisions for livestock keepers in dry areas

### **Decision-support tools have now been developed to help decision makers and livestock keepers address the difficult question of how to cope in semi-arid areas where forage levels can fall to critically low levels.**

Deciding how to manage livestock in these areas, and how many animals to keep, are difficult choices when rainfall cannot be predicted from one year to the next. This means that you can't be sure that there will be enough grazing for your livestock.

Using tools like the SimSAGS Decision Support System will make it easier to balance the many factors that have to be taken into account when keeping livestock in areas where rainfall is very variable.

■ To find out more, please type **LPP23** into the search box on the search page of the CD attached to this book.

**Project title:** Environmental variability and productivity of semi-arid grazing systems ...



## Maize for food and forage in East Africa

### **Now, there's a basket of proven ways for farmers to meet both food and forage needs.**

Farmers in densely populated regions of Kenya need dual-purpose maize. They want maize that is good to eat but that also has lots of stem and leaf for animal feed. Previously, the focus was on raising grain yields in maize. Pests and diseases that affected maize foliage, and thus animal feed, were ignored.

Small farmers in Kenya, Tanzania, Rwanda, Uganda and Ethiopia now use new techniques that work best for them. Some opt for maize varieties that are resistant to maize streak virus or stem borers. Others grow a fodder legume that repels stem borers. These and other techniques mean more and better animal feed in the dry season.

■ Find out more by typing **CPP51** into the search box on the search page of the CD attached to this book.

**Project title:** Improving seasonal availability of forage by better integrated pest management ...

## Trees for fodder for the poor

### **Poor urban and rural people with no land can still benefit from the income-earning opportunities brought by growing fodder—by using trees rather than more traditional sources.**

Research conducted in China proved that this was possible if they partnered with land owners in order to grow useful fodder trees on otherwise unused pieces of land (like that at the edge of roads, paths and fields).

The project also identified the best fodder-tree options, and simple techniques to allay partners' fears that the trees might shade their crops. The project's findings have now been successfully applied in a range of countries, including Afghanistan, Bangladesh, India, Nepal, Indonesia and Pakistan.

■ To find out more, please type **FRP21** into the search box on the search page of the CD attached to this book.

**Project title:** Pro poor strategies for agroforestry development ...

More shrubs mean more milk in East Africa

Snack bags for cows boost smallholder dairy farms' milk production

**Two million small farmers in East Africa could increase milk production simply by planting fodder shrubs—as an extra high-protein feed for cows and goats.**

The shrubs don't take up valuable land. They can be planted alongside paths, on field boundaries and banks. Plus, not a lot of labour is involved.

About 48,000 farmers in Kenya, 33,000 in Uganda, 11,000 in Rwanda and 8,000 in northern Tanzania now grow fodder shrubs because they quickly reap substantial benefits. Farmers consistently report an increase of around 1-2 litres of milk per animal per day. So, the market for seeds of fodder shrubs is thriving. Over 40 dealers now market seed and seedlings across Kenya.

■ Find out more by typing **FRP43** into the search box on the search page of the CD attached to this book.

**Project title:** Scaling up the promotion of fodder shrubs in East Africa

**In Zimbabwe, work has identified ways in which smallholder dairy farmers can grow enough feed on farm to ensure that their cows produce as much milk as possible.**

Intercropping forage sorghum or pennisetums with lablab or cow pea produced up to 8 tons of dry matter per hectare over a three year period—despite at least one severe drought.

Intercropping with legumes means that the fodder produced contains good levels of protein. Plus, the feed produced can easily be chopped and stored in plastic bags, providing silage that will help poor producers to get through the dry season.

■ To find out more, please type **LPP03** into the search box on the search page of the CD attached to this book.

**Project title:** Conserved forage in the form of bagged silage maintains livestock productivity ...

Handy bales save  
livestock keepers money

**Working with farmers in Tanzania, researchers have developed a simple way of making bales by hand.** Since transporting feed is a major cost for poor producers, the technique could have a major impact on their livelihoods—reducing transport costs by up to 60% in some cases.

Using a bottomless box as a frame, and trampling the contents to compact it, farmers can quickly create bales from a wide range of crop residues, including maize and hay stover and bean stems. Not only can a lot more be packed onto a single pickup truck—reducing costs—it's also much easier for livestock owners to store feed when it's packaged in bales.

■ To find out more, please type **LPP05** into the search box on the search page of the CD attached to this book.

**Project title:** Manual box baling of maize stover and other dry forages ...

Double the benefits: using  
legumes to boost both  
milk and rice production

**Growing forage legumes with rice, either together or in succession, has been shown to be one answer to the feed shortages that face dairy cattle keepers in Bangladesh—where intensive rice production leaves little land available for forage production.** Plus, as an added bonus, growing legumes also increases soil fertility—which in turn boosts rice production.

Since feed is the major outlay for dairy producers, making cheaper, higher quality fodder available in this way would have a real and long-lasting impact on the lives of the poor. Cheap, easy-to-make urea molasses blocks are another way of boosting milk production, as animals gain essential nutrients as they lick them.

■ To find out more, please type **LPP08** into the search box on the search page of the CD attached to this book.

**Project title:** Leguminous forages and feed blocks for smallholder mixed farmers and landless dairy ...

More work for oxen,  
less work for women  
and children

**New locally-produced equipment means that oxen are now more productive.**

In Uganda, hiring oxen is cheaper than hiring labour. But, although oxen always plough the fields, they are rarely put to other work such as sowing, ridging or lifting root crops because farmers don't have the right tackle.

Over 2000 households now put oxen to work using inexpensive new tools. This reduces their costs and improves returns. Putting oxen to work also frees women from the drudgery of tasks such as weeding, and releases children so they can go to school. Small companies already manufacture the equipment locally and it has major potential in other areas of sub-Saharan Africa where draught animals are traditionally used to prepare land.

■ Find out more by typing **CPP65** into the search box on the search page of the CD attached to this book.

**Project title:** Reducing drudgery and improving returns to annual crop production ...

Shouldering the burdens  
of the poor

**A new toolkit is available that makes clear the benefits of using draught animals to provide power on-farm.**

It's now being recognized that the use of animals is not a backward technology, but rather one that provides real benefits. They can, for example, be used to apply minimum tillage and prevent erosion in fields—because they do not tear up the ground in the same way that a tractor would.

Available on CD-ROM, the new toolkit contains a large amount of information and training materials on animal power, including examples and case studies from Africa, Asia and Latin America. Subjects covered include animal welfare and keeping animals healthy, as well as techniques for conservation agriculture.

■ To find out more, please type **LPP09** into the search box on the search page of the CD attached to this book.

**Project title:** A computer-based Tool-box for promoting and supporting draught animal power



Too many mouths to feed: a new tool to allocate feed efficiently

**The OXFEED decision-support tool is now available to help farmers get the most from the feed they have available.**

The tool takes into account the fact that draft animals have to be given a minimum amount of food to allow them to do the work required of them as efficiently as possible. But, overfeeding them wastes resources that could be used to feed other livestock or for mulching and green manuring.

OXFEED can base its 'conclusions' for feed allocation on local data—which means that recommendations will be relevant to specific farmers in a specific area. And, it's simple to use. However, the tool is not widely known, and its current usage is mainly limited to Bolivia.

■ To find out more, please type **LPP10** into the search box on the search page of the CD attached to this book.

**Project title:** OXFEED: A practical decision support tool to improve the feed management of work animals

The donkey radio shows: helping producers care for draught animals

**In Kenya, weekly radio programmes have helped listeners to keep their precious donkeys healthy.**

Donkeys are a useful source of draught power, and poor families need to learn how to ensure that they stay healthy and have long working lives. Broadcasting to isolated rural communities also gave listeners the opportunity to ask specific questions about their own animals. And, recording the shows on CD-ROM provided a useful set of information that is being used around the world.

The project outputs are already benefiting users in Rwanda, Tanzania, and Kenya. And to ensure that this very useful exercise can be reproduced in other countries, the project has produced a booklet explaining how to set up a radio show that will improve animal welfare.

■ To find out more, please type **LPP11** into the search box on the search page of the CD attached to this book.

**Project title:** Design of radio messages and programmes to improve donkey use, welfare ...

## Improved livestock practices for highland communities

**In Bolivia, work has been underway to find better ways of managing draught animals in the Andes.** As part of this, the project has addressed the need to treat animals well and keep them healthy so that they can work for longer. But, importantly, it has also tackled the fact that inappropriate tillage practices are causing the delicate soils of the area to degrade, reducing productivity and forcing people to leave land on which they can no longer make a living.

The project's outputs include the development of better ways of allocating feed, housing animals and caring for their health. It has also developed new equipment specifically for working the delicate soils found in hillside environments, and identified better ways to manage soil and conserve water.

■ To find out more, please type **LPP12** into the search box on the search page of the CD attached to this book.

**Project title:** Improved management and use of draught animals in the Andean hill farming ...

## Out with the old and in with the new: better extension

**A new style of extension work has been developed in Kenya to overcome shortages of extension workers and avoid the age-old problem of workers pushing technologies that producers don't really want and may not use.** The FARM-Africa farmer-to-farmer extension (FFE) model involves extension workers training interested farmers in the use and application of a technology for which there is a demand.

The system has a range of benefits, greatly increasing the number of people acting as extension workers and ensuring that technologies are better tailored to local needs. It also creates networks of people willing and able to exchange information. FFE is being used to make people aware of a wide range of things that can improve their everyday lives—from better goat production to improved HIV awareness.

■ To find out more, please type **LPP18** into the search box on the search page of the CD attached to this book.

**Project title:** Improving information and communication for smallholder farmers in Kenya ...

## Making it easier to keep small animals

**In partnership with producers, studies have identified the problems that farmers living at the edges of forests in tropical Bolivia face when keeping small animals.** The research addressed the needs of chickens, ducks, pigs, hair sheep and guinea pigs—all of which had been ignored by past studies.

Once problems had been identified, it was possible to solve many of them using very simple measures. The number of chicks, piglets and lambs that died was reduced simply by applying up-to-date veterinary guidelines for vaccination and parasite control, for example. Improving housing and building nest-boxes and farrowing pens also increased the survival rate of piglets and chicks. Applying this approach elsewhere could greatly improve the livelihoods of poor families keeping different types of small animals.

■ To find out more, please type **LPP20** into the search box on the search page of the CD attached to this book.

**Project title:** Alternative strategies for small livestock keepers in forest margins

## Community breeding to improve poor farmers' flocks

**Creating local associations and community-based buck stations allows local farmers to undertake breeding programmes designed to improve their goat flocks.** Small-scale resource-poor livestock keepers usually can't access government services for breed improvement, and this limits their ability to improve the productivity of their animals.

In Kenya, however, new schemes have overcome this by providing poor livestock keepers with training, and by setting up community-based buck stations and supporting the establishment of local community breeding associations. The model has proved popular and is now being used in a range of countries. Examples include Ethiopia, Uganda, Tanzania, Rwanda, Burundi and Kenya.

■ To find out more, please type **LPP19** into the search box on the search page of the CD attached to this book.

**Project title:** Community based goat productivity improvement ...