

## OVERVIEW OF PRACTICES FOR OPTIMISING SMALLHOLDER MORE SPECIALISED LIVESTOCK KEEPING

1. ANIMAL NUTRITION	<i>Objectives</i>	Dry season nutrition	Mineral supply
<b><i>Low-input &amp; diversified smallholder systems</i></b>	Reduced mortality in dry season Reduced weight-loss Increased resistance to drought		
Recommendations for improvement		Agricultural left-overs storage & feeding Support local feeding innovations Plant leguminous trees Improved use of kitchen left-overs Green forage Hay making Cheap side-products Feeder troughs	Provide ordinary salt Home-made mineral blocks Vitamins
<b><i>More specialized smallholder systems</i></b>	Better nutritional status year-round Improved reproduction rate Special feeding young stock		
Recommendations for improvement		Local production of balanced feed Improved straw feeding Hay/silage making	Complete mineral supplements Vitamins
2. PASTURE&RANGELANDS	<i>Objectives</i>	Pasture	Rangeland
<b><i>Low-input &amp; diversified smallholder systems</i></b>	Reduced overgrazing and soil-erosion Reduced bush encroachment Increased carrying capacity Increased resistance against drought Community organisation		
Recommendations for improvement		Controlled grazing 0-grazing system	Reviving communal grazing control Fencing off grazing areas Rotational grazing Special grazing areas for dry period

			Controlled & prescribed fire
<b>More specialized smallholder systems</b>	Sufficient fodder available year round Good quality fodder Good N and P efficiency Increase soil-fertility and soil-life		
Recommendations for improvement		Plant fodder crops Pasture rotation Special pastures for young stock 0-grazing system Efficient fertilization of pastures	Effective weed-control
<b>3. WATER</b>	<b>Objectives</b>	<b>Access to water</b>	<b>Water quality</b>
<b>Low-input &amp; diversified smallholder systems</b>	Regular water uptake Water quality sufficient Pollution of human water sources prevented		
Recommendations for improvement		Water 1-2 times a day Opt for animal species that require little water	Prevent polluted drinking water for animals Prevent pollution of water for human use by animals
<b>More specialized smallholder systems</b>	Good water availability + quality year-round		
Recommendations for improvement		Continuous access or provide 3-4 times a day.	Prevent pollution of drinking water by chemicals or artificial fertilisers
<b>4. INFECTIOUS DISEASES</b>	<b>Objectives</b>	<b>Animal health services</b>	<b>Vaccination</b>
<b>Low-input &amp; diversified smallholder systems</b>	Reduced incidence zoonosis Reduced animal mortality due to infectious disease Promote synergy between traditional and modern remedies Improved access to local animal health services		
Recommendations for improvement		Support ethno-vet practices and practitioners Train Community Animal Health worker	Vaccination of 1 or 2 major infectious diseases

		(CAHW) Awareness about zoonosis	
<b>More specialized smallholder systems</b>	Improved use of ethno-vet medicine (medicinal plants) Improved use of commercial medicine One health: human and animal medicine join forces		
Recommendations for improvement		Ethno-vet practices strengthened Training improved use of commercial medicine Disease surveillance Monitoring and recording of disease incidence	Extended vaccination programmes
<b>5. PARASITE CONTROL</b>	<b>Objectives</b>	<b>Internal parasites</b>	<b>External parasites</b>
<b>Low-input &amp; diversified smallholder systems</b>	Reduced incidence of internal and external parasites Prevention parasitic zoonosis Reduced loss young stock due to parasites Improved leather quality		
Recommendations for improvement		Make use of natural resistance of local breeds Reducing parasite incidence in grazing and feeding areas Parasite control especially in young stock Support ethno vet remedies for parasite control	Make use of natural resistance of local breeds Use of medicinal plants for parasite control (ethno vet) Community control activities (bathing)
<b>More specialized smallholder systems</b>	Low incidence internal and external parasites in all stock Special care for young stock (especially exotics and crossbreeds) Prevent resistance against commercial medication		
Recommendations for improvement		Regular treatment all stock Medicinal plants + commercial medications	Regular bathing/spraying of all stock Medicinal plants + commercial medications

<b>6. BREEDING</b>	<b>Objectives</b>	<b>Use of breeds</b>	<b>Breeding management</b>
<b>Low-input &amp; diversified smallholder systems</b>	Maintain important local breeds Make use of important traits of local breeds Effective selection Prevent inbreeding		
Recommendations for improvement		Breeding selection on basis of local criteria Bring in improved local breeds	Prevent inbreeding Timely castration Change males before mating with own offspring
<b>More specialized smallholder systems</b>	Increased productivity Effective selection Selective use of exotics Good reproductions rates Maintain local breeds for crossbreeding		
Recommendations for improvement		Improved local breeds Crossbreeding between 25% and 75% of exotic blood Selection of bulls Selective/limited use of artificial insemination	Breeding only at minimum age and height Strict control of uterus infection Effective heat detection (in case of AI)
<b>7. PROTECTION&amp;HOUSING</b>	<b>Objectives</b>	<b>Predators, accidents &amp; theft prevention</b>	<b>Weather protection</b>
<b>Low-input &amp; diversified smallholder systems</b>	Reduced loss due to predators, theft and trampling Effective low-cost constructions with local materials Prevent transmission of zoonotic parasites		
Recommendations for improvement		Protection of young animals during first weeks Protection during brooding and caring for young Night shelters No contact between animals and human stool	Provide simple night shelters Trees for shade in fields

<b>More specialized smallholder systems</b>	Effective housing with enough space for each animal Clean housing Manure available for crops		
Recommendations for improvement		Milking shed Ventilation Manure-pit	Housing for zero-grazing
<b>8. SPECIAL CARE</b>	<b>Objectives</b>	<b>Sick animals</b>	<b>Around delivery</b>
<b>Low-input &amp; diversified smallholder systems</b>	Increased survival rate sick animals Reduced mortality newly born Reduced disease female animals after birth Good bonding Reduced disease transmission around birth		
Recommendations for improvement		Separate sick from healthy animals Shade, water, fresh food Ethno vet treatment Disposal of dead animals	Have animal near before birth Attend birth when necessary Check afterbirth Guarantee colostrum intake
<b>More specialized smallholder systems</b>	Effective control of high-productivity problems Young stock in good condition		
Recommendations for improvement more specialised systems		Special care of young stock Regular mastitis control Ethno vet/commercial treatment	Support to difficult birth due to large fetus Milk fever control
<b>9. IMPROVED MARKETING</b>	<b>Objectives</b>	<b>Informal Markets</b>	<b>Formal – regional markets</b>
<b>Low-input &amp; diversified smallholder systems</b>	To feed family and local community needs for food and household needs To fully utilize local resources	Barter and other forms of exchange Sale at the doorstep	Develop niche markets of local breeds
Recommendations for improvement		Support local innovation in production, storage and marketing Improve product quality and volume.	Improve product quality and volume Improve communication about

		Develop niche markets Improved organization	market opportunities
<b><i>More specialized smallholder systems</i></b>	To maximize production volume, uniform quality. To meet consumer desires.		
Recommendations for improvement			Improve product quality and volume Develop niche markets for organic, or environmentally sound products. Develop selling and buy cooperatives that provide uniform delivery through high and low seasons