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Guinea Savanna, Commercial Livestock Development and Livestock Diseases

Jonathan Rushton

Barbara Wieland, Solenne Costard, Raphaelle Metras, Christine Thuranira, Declan McKeever and Dirk Pfeiffer

Summary

- Three background sections
  - Livestock sector
  - Animal diseases
  - Animal health services

  For each I will present some comparison with the Cerrado of Brazil and north eastern Thailand
- I will then present some of the potential critical constraints and make suggestions how they may be addressed

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Livestock sector

- The region outlined has a majority of the animals (all species) in extensively managed systems
  - Otte and Chilonda (2002) for a relatively recent analysis of the productivity of the ruminant systems
  - Older studies are available on farming and livestock systems in general (Jahnke, 1982; de Leeuw & Rey, 1995)
- A majority of the cattle are in pastoral or agro-pastoral systems not ranching systems

Livestock sector

- There are mixed farming systems with widespread use of draught animals
  - Pingali et al (1987), Mcintire et al (1992) following Boesrup (1965) model of development
  - Comprehensive studies for such systems in southern Africa (Barrett, 1992; Muchena, 1993)
  - Localised reports of such systems expanding in their area of importance (Speirs & Olsen, 1992)

Livestock sector

- There are pockets of intensive production:
  - Dairy systems close to urban centres and in highland regions
  - Some intensive poultry production mainly close to urban centres
  - Limited pig production

Livestock sector

- Most parts of the identified region are reliant on imports
- This may have created disincentives for livestock development investments in the past

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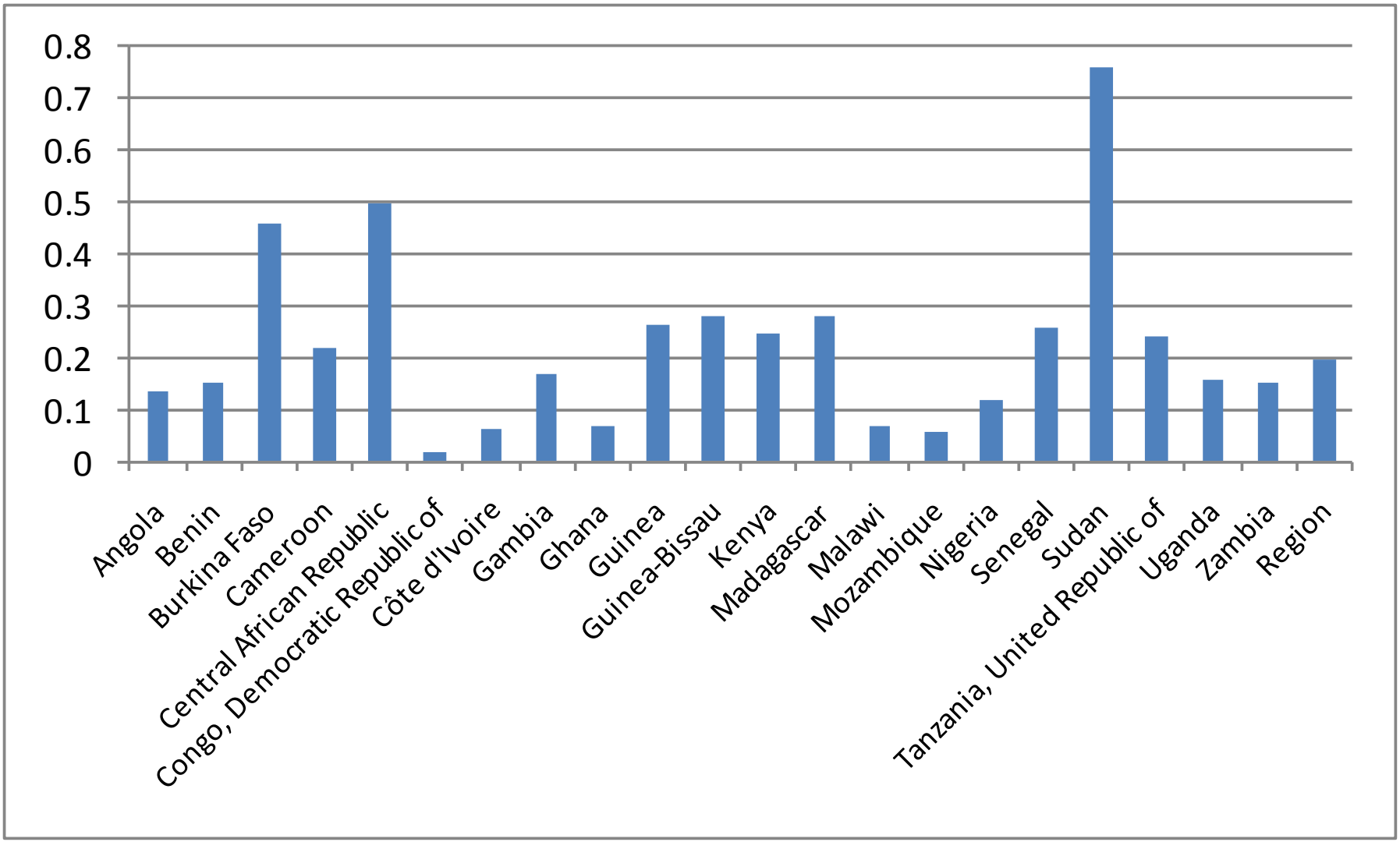
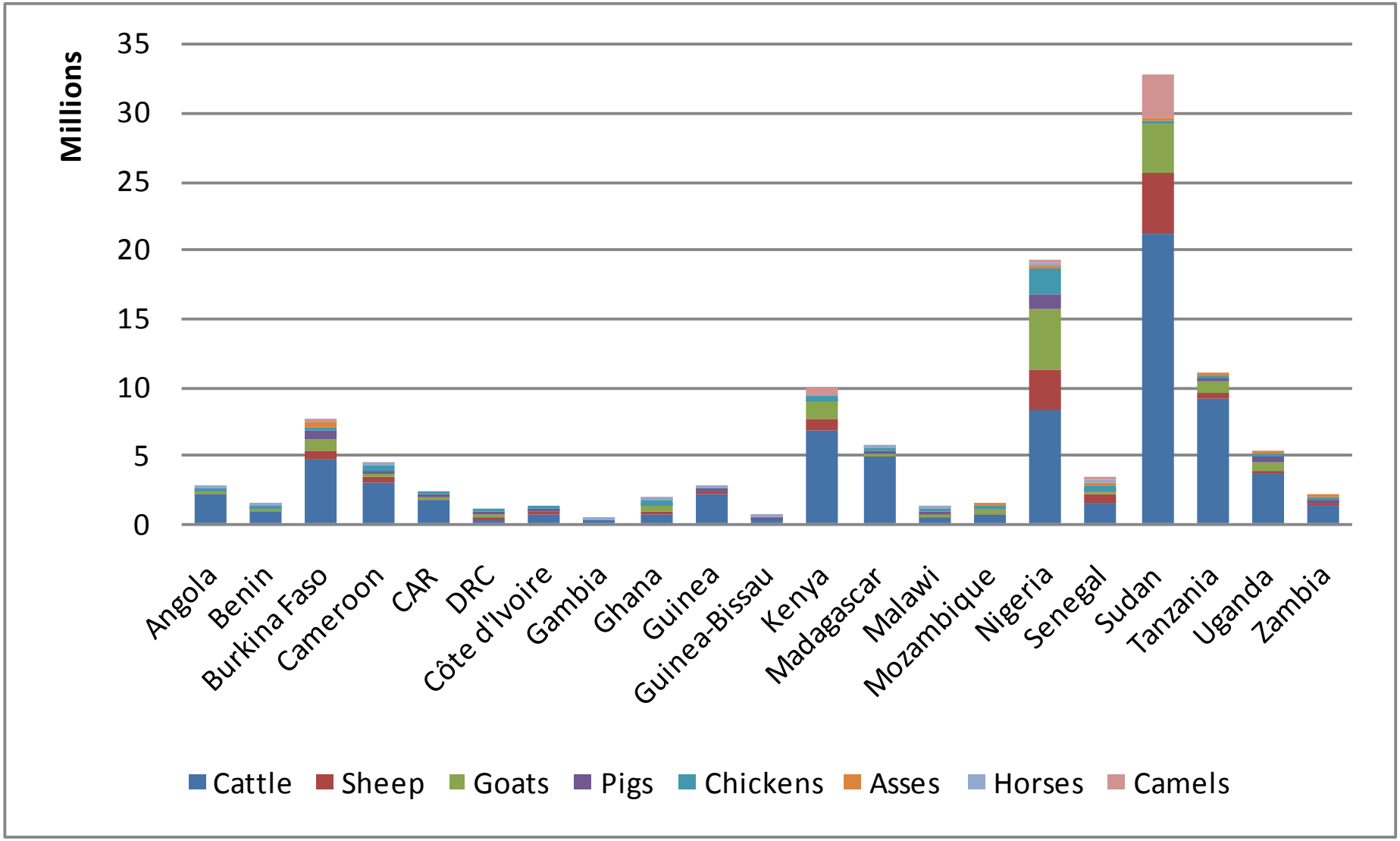
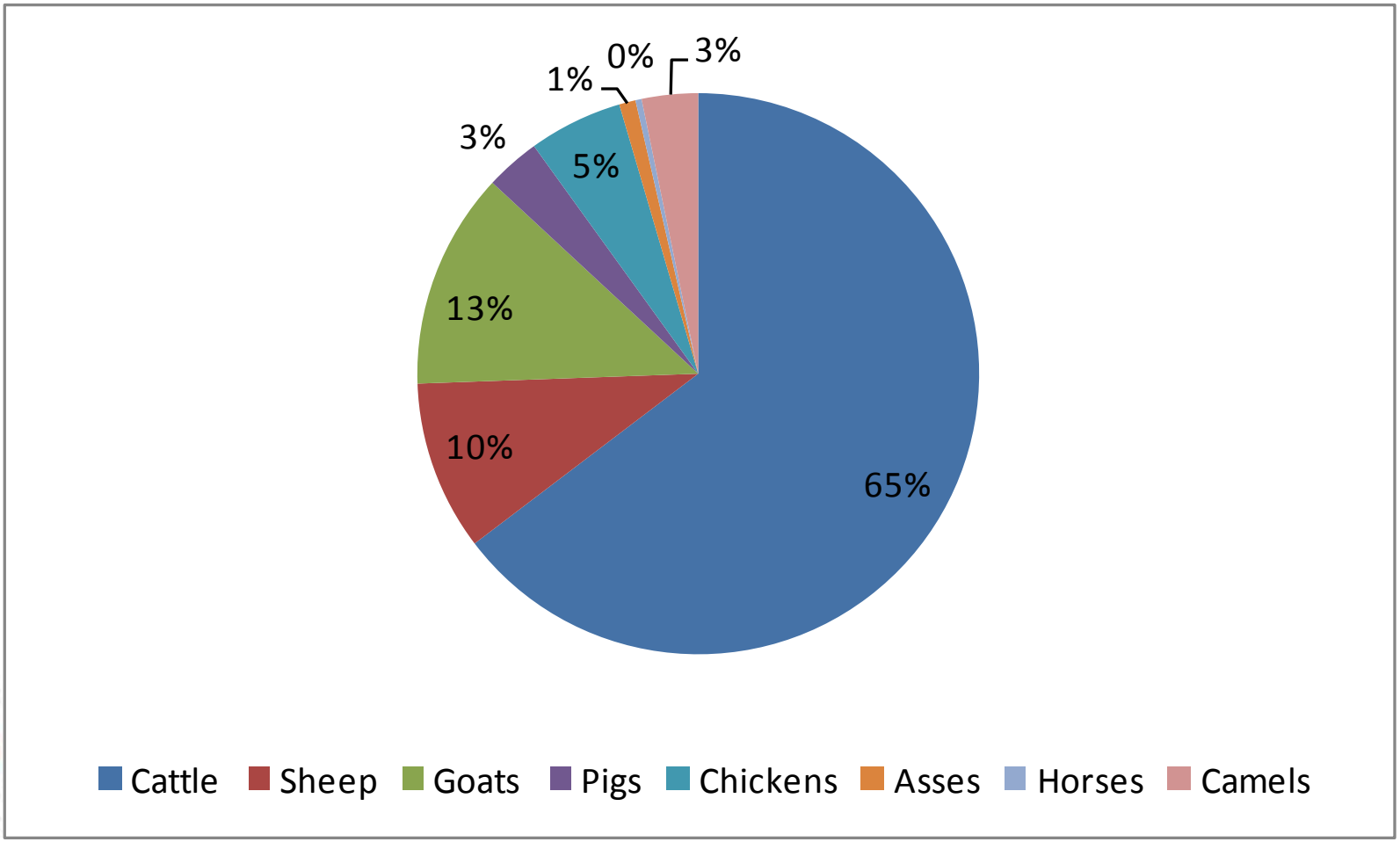
Livestock Units per person in each country



Livestock Units by species and country



Livestock Units by species



Comparison between countries

- In the cerrado of Brazil most cattle are in ranching systems
- In the cerrado of Brazil and north eastern Thailand most poultry are in intensive units specialised in meat production
- In north eastern Thailand buffalo are integrated in mixed farming systems and other livestock are held in small scale family managed farms

Comparison between countries

Country	Total LSUs	Percentage of LSUs that come from:					LSUs per	
		Cattle & Buffalo	Poultry	Sheep & Goats	Horses	Pigs	Person	Km2
Thailand	7,182,980	50.86	25.43	0.28	0.06	23.37	0.11	14.03
Brazil	166,001,000	72.3	21.3	1.5		5.0	1	19.5
Region	117,111,012	64.65	5.40	22.26	1.30	3.15	0.19	

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What are the major disease problems in the Guinea Savanna?

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The priorities to the poor (Perry et al, 2002)

West Africa	East Central and Southern Africa
Anthrax	East Coast Fever
Black leg	Ectoparasites
CBPP	GI Parasitism
Dermatophilis	Haemonchosis
Ectoparasites	Infectious coryza
GI Parasites	Newcastle disease
Heartwater	Neonatal mortality
Liverfluke	Nutrition problems
Respiratory Complexes	Respiratory complexes
Trypanosomiasis	Rift Valley Fever

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Underlying problems

- Parasitic diseases
  - Ticks and tick borne diseases
    - East and southern Africa - ECF
  - Internal parasites
- CBPP in cattle
- In some areas dermatophilis
- Nutritional and metabolic disorders
- Respiratory problems

Commercial production systems – problematic diseases

- Foot and mouth disease
  - High impacts on intensive production
  - Affect markets for beef and small ruminants
  - Has closed markets for pork
- Peste des Petites Ruminants (PPR)
  - High impacts on small ruminant systems
  - Could affect markets for small ruminant

Commercial production systems – problematic diseases

- African Swine Fever and Classical Swine Fever
  - High impacts on intensive production
  - Affects markets for pork
- Newcastle disease and highly pathogen avian influenza
  - High impacts on intensive production
  - Affects markets for poultry

An underlying problem…….

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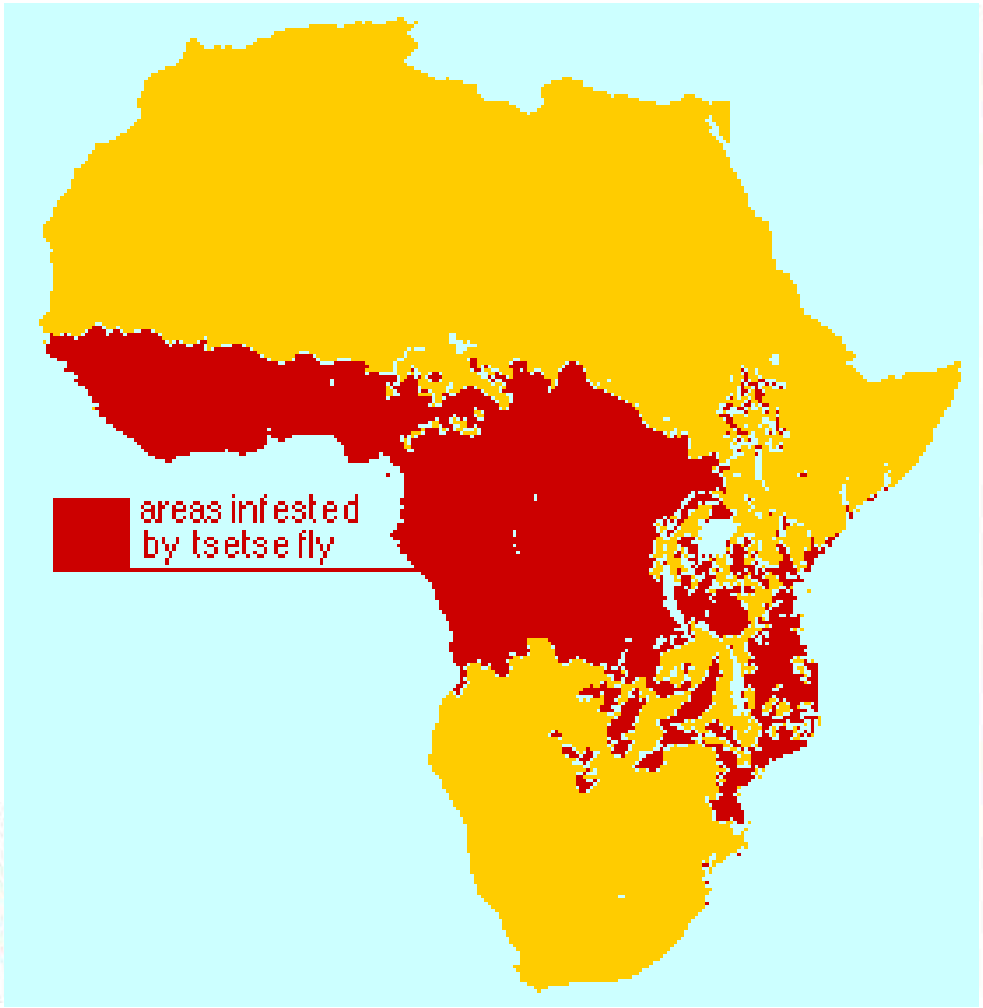
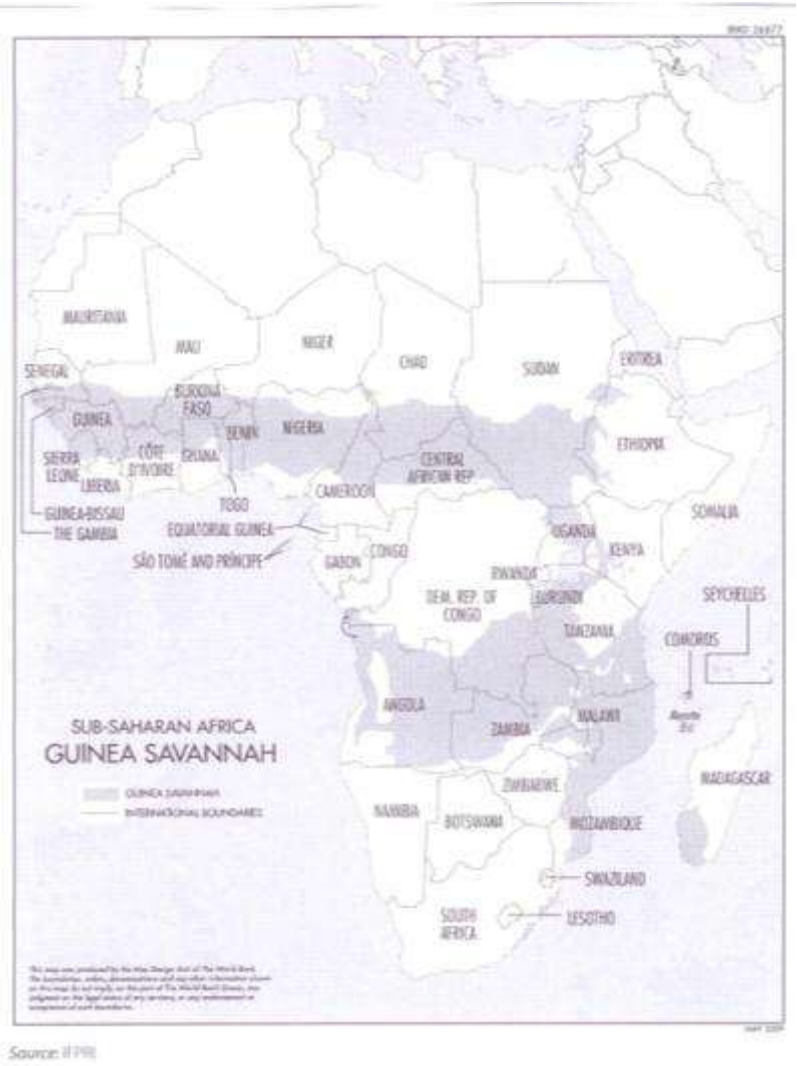
Tsetse and trypanosomiasis and the Guinea Savana





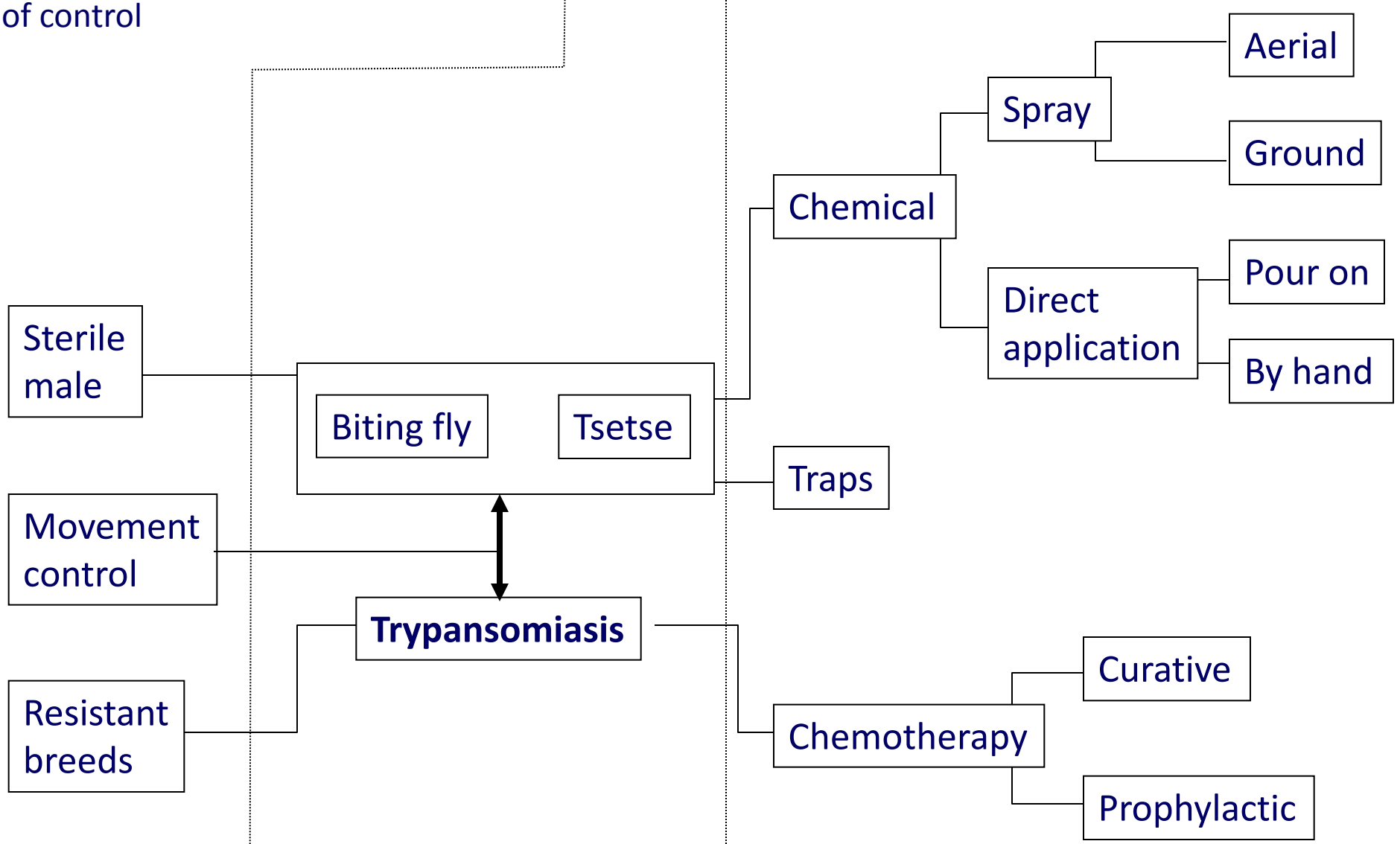
Source: IFPRI

Main species	Main vector	Species affected	Impact
AFRICA *T.congolense* *T.vivax* *T.brucei*	Tsetse	Cattle, Camels, Sheep, Horses, Goats, Pigs, Human	Mortality and morbidity Major constraint on land use Reservoir of sleeping sickness Major constraint in the adoption of improved breeds
ASIA, LATIN AMERICA and AFRICA *T.evansi* *T.vivax*	Biting flies	Cattle, Camels, Sheep, Horses, Goats, Buffalo, Pigs	Mortality and morbidity Major constraint in the adoption of improved breeds

From Rushton (2009)

Not all are available, effectiveness not proven in all situations, some are potentially more sustainable methods of control

Available, possible resistance problems, environmental issues, expense



From Rushton (2009)

Tsetse and trypanosomiasis and the Guinea Savana

- Budd (1999) states that 260 million people are believed to live in zones with the risk of animal and human trypanosomiasis in Africa.
- Of that population, 55 million are at risk from sleeping sickness, which kills 55,000 people per year
- Kristjanson, Swallow, Rowlands, Kruska and Leeuw (1999) estimated that trypanosomiasis costs livestock producers and consumers US 1,340 million a year, this estimate did not include losses of manure and traction power.
- For good maps of economic impact see Shaw et al (2006)

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How does this list compare with Brazil and Thailand?

- Many of the underlying and commercially important problems are similar
- The biggest difference is the presence of tsetse fly and a wider more harmful range of *Trypansome spp*
- But it is not just the presence of disease and animal health problems

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Animal health services

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Animal health services – Guinea Savanna

- Animal health services are not strong
- National commitment to veterinary education and research is relatively weak, perhaps reflecting the low importance the sector plays in the economies
- Investments have been focussed on single disease or problem eradications – rinderpest, to a lesser extent tsetse
    - These investments have been external
- There is a boom and bust mentality, exacerbated with the privatisation of veterinary services in the 80s

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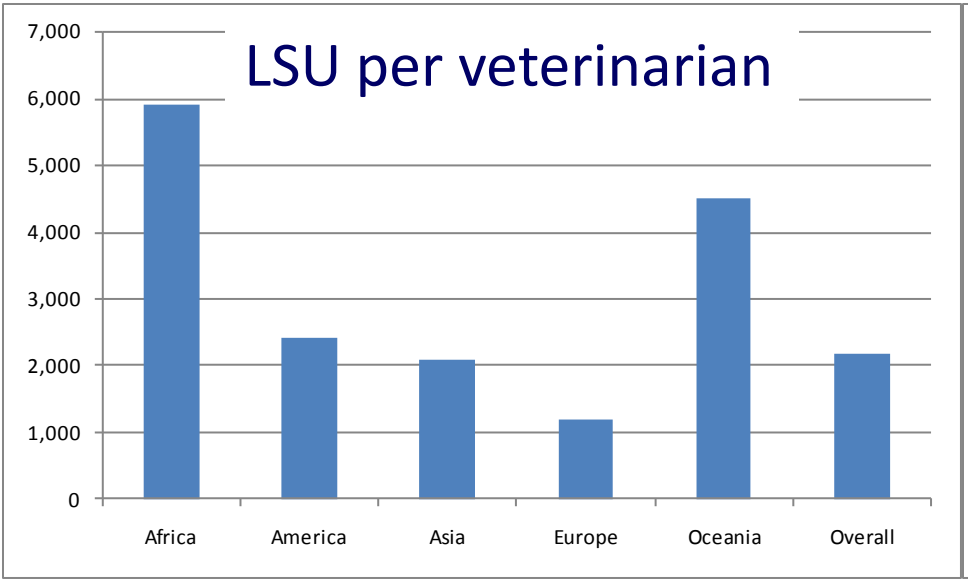
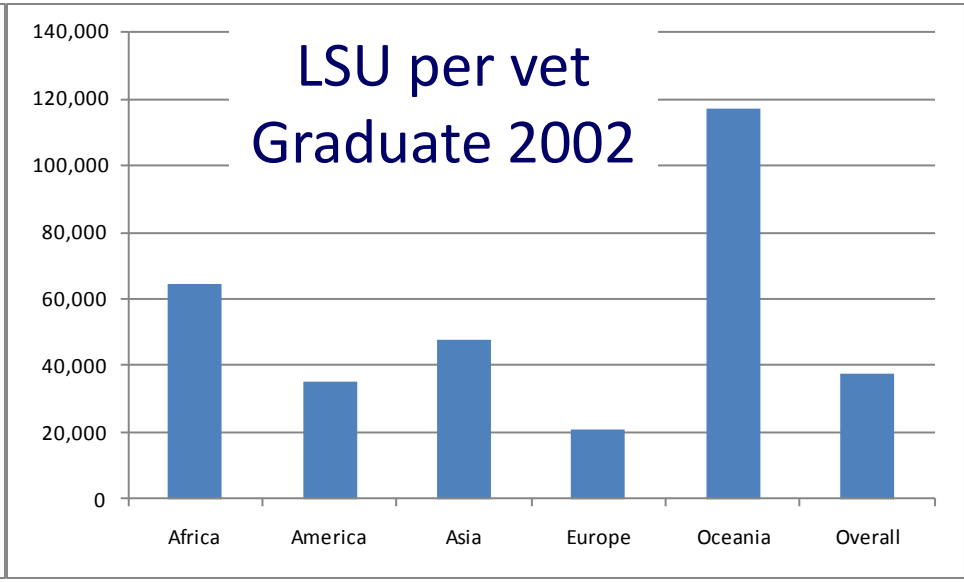
Animal health services – Brazil and Thailand

- Animal health services are relatively strong
- National commitment to veterinary education and research is and has been strong
- In investments have in the past focussed on FMD with strong public-private partnerships and limited use of external funding
- In Thailand the reaction to highly pathogenic avian influenza has been strong in terms of disease surveillance, disease response and modification of the product being exported
- In both countries the animal health system (public and private) has depth in numbers and capacity

Investments in animal health – *veterinarians as a proxy*

Continent	LSUs per veterinarian in the:			LSUs per	
	Public sector	Private sector	Total	Veterinary School	Graduate in 2002
Africa	12,758	11,058	5,924	3,957,069	64,343
America	12,852	2,984	2,421	1,850,810	35,365
Asia	4,869	3,635	2,081	2,288,854	48,032
Europe	3,170	1,888	1,183	1,893,605	21,040
Oceania	47,202	4,994	4,516	8,590,848	117,042
Total	**7,035**	**3,148**	**2,175**	**2,136,263**	**37,484**





Constraints and suggestions

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What has been the livestock development focus in other comparative regions?

- Brazil
  - Cattle – opening out the land, as an important investment option, now as an export opportunity
  - More recently poultry as an added value component of soya and maize cropping systems
- Thailand
  - Poultry – added value to cropping systems
  - And pigs – added value to cropping systems

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What could the livestock development focus be for the Guinea Savanna?

- Cattle
  - Tsetse and trypanosomiasis remain a tremendous challenge
  - Other contagious and tick borne diseases would need to be managed

What could the livestock development focus be for the Guinea Savanna?

- Poultry
  - Access to feed resources and feed milling technologies need to be improved
  - Improving the animal health and production systems would need training
  - Development of marketing of product needs investment

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What could the livestock development focus be for the Guinea Savanna?

- Pigs
  - Cultural acceptability of the species
  - Access to feed resources and feed milling technologies need to be improved
  - Improving the animal health and production systems would need training
  - Development of marketing of product needs investment

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What could the livestock development focus be for the Guinea Savanna?

- Sheep and goats
  - Perhaps more options particularly for export to the middle East
  - Added value systems and chains are less explored than for other species
  - Improving the animal health and production systems would need training
  - Development of marketing of product needs investment

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In general

- All potential commercial livestock developments require strong public investments in animal health systems
  - Veterinary education
  - Veterinary research
  - Where appropriate direct implementation
- In the Guinea Savanna region there has been low investment in these areas, which contrast sharply with Brazil and Thailand
- Such investments underpin the development of a livestock sector and as importantly guarantee its survival in international markets.

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