PROSPECTS FOR CONTROL AND ELIMINATION OF CAMEL TRYPANOSOMOSIS DUE TO T. EVANSI (SURRA) IN AFRICA

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THE OBJECTIVE AND METHODOGY

- **Advocate for an organized and collective control of Surra in camels in Africa;**
- **Literature review: situation of camel farming and Surra**

- **Analyses of data on:**
  - **Rational for surra control**
  - **Feasibility**

- **Strategy components**
- **Recommendations**

CONTENTS

I. THE IMPORTANCE OF THE CAMEL IN AFRICA

II. RATIONAL FOR SURRA CONTROL/ELIM IN CAMELS

III. FEASIBILITY OF SURRA CONTROL/ELIM

IV. STRATEGY FOR SURRA CONTROL

V. IMPLEMENTATION APPROACH

VI. CONCLUSIONS AND RECOMMENDATIONS

I.1 CAMEL NUMBERS AND DISTRIBUTION IN AFRICA

- **Africa home to > 20 million camels**
- **20 countries, 3 sub-regions (WA, NA, EA)**
- **3 countries: Somalia, Sudan, Ethiopia> 2M hds**
- **ASALs: 43% inhabited land, host 40% pop Africa**
- **ASALs: poor rainfalls 50-400 mm; scarce vegetation**

I.1 THE CAMEL COMPARATIVE ADVANTAGES IN AFRICA ASALs

- **Adaptation to harsh climate**
- **Resistance to devastating epizootics (RP, CBBP)**
- **Capacity to convert meager vegetation into vital resources**
- **Wide range of products and services**

I.2 MAJOR CAMEL PRODUCTS AND SERVICES

- **Milk:**
  - **for Subsistence**
  - **for marketing**
- **Meat**
  - **for subsistence**
  - **for marketing**
- **Work**
  - **On farm: cultivation**
  - **Off farm: transport**
- **Butch & racing camels for export**
- **Tourism**

I.4 TRENDS THAT CONFIRM THE GROWING INTEREST IN THE CAMEL IN AFRICA

- **Regular growth of camel numbers in Africa**
- **Introduction of camels into new regions southward**
- **Increased use of camels in farm works**
- **Emergence of modern prod. systems (milk & meat)**
- **High demand of camel meat in Gulf countries**

II.1 SURRA: MAJOR DISEASE OF CAMELS

- **Pathogen : T. evansi**
- **Main vector: Tabanids;**
- **Camel, main host in Africa**
- **Transmission Mechanical**
- **High prevalence: 22-33%**
- **Mortality: 3%, Eth**
- **Morbidity: 30%, Eth**

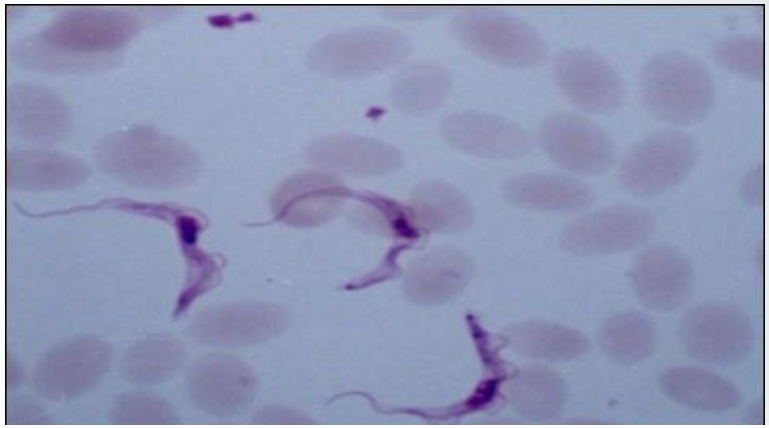


Fig. 1: Haematophagus flies (Tabanus)
Source for both figures: [35]

II.2 IMPACTS OF SURRA

In Somaliland Abdirahman & al, 2015 estimated economic losses to:

- **Milk: US $195.5 per female/year**
- **Export market value: US $163.64 per male/year**
- **Two emerging issues:**
  - **threat of T.evansi spreading to free countries: ex. infections in France, 2006, imported from Canaries Ids**
  - **Zoonotic potential of *T. evansi*: human cases reported from India and Vietnam (Truc, 2004; Chau et al., 2013)**

II.3 BENEFITS FROM SURRA CONTROL/ELIM

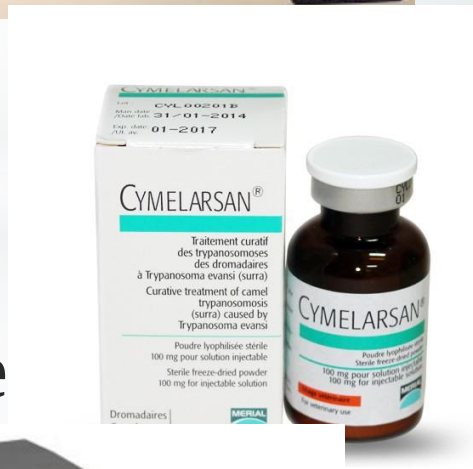
Abdirahman & al, 2015 estimated the benefits of the control of camel Surra in Somaliland

The control was based on 3 cymelarsan treatment protocols and the estimations were as follows:

- **Biannual Treatment of all camels in the herd: US $354 per head/year**
- **Monthly targeted treatment of clinically sick camels: US $426**
- **Biannual treatment of CATT sero-positive camels:US $287**

III.1 FEASIBILITY: FAV. FACTORS (S & O)

- Surra has a vulnerable epidemiology
  - 1 pathogen species;
  - 1 main host and reservoir (camel),
  - Mechanical transmission
    & high risk periods and sites:
    large gatherings around water points
- Diagnostic tools
  - simple, reliable and not expensive tests:
    blood smears, CATT)
- 2 effective drugs: cymelarsan, antrycide
- National Capacities:
  - lab capacities;
  - Expertise on Tryps programs
- GIS: mapping risk areas



III.2 FEASIBILITY: CONTRAINTS (W & T)

- **ASALs & camel neglected by the decision makers**
  - **Absence or scarcity of camel development projects**
  - **Insufficient veterinary coverage of ASALs**
- **Difficult access to camel areas:**
  - **Lack of road infrastructure**
  - **Insecurity (armed groups) in most of the ASALs**
- **Knowledge gaps in the epi/control of Surra:**
  - **reservoir role of horses, donkeys and dogs?**
  - **extent of drug resistance: cymelarsan & antrycide?**
  - **Lack of pilot control projects to guide proper projects**

IV.1 DESIGNING SURRA CONTROL STRATEGIES

- **Vector control and/ or parasite control?**
- **Vector control is expensive, less effective and less sustainable: many species, immature forms (larvae)**
- **The vector does not carry the parasite for long time**
- **The camel is known to be the main host and the main reservoir and keeps infection for long time**
- **Therefore any good strategy should target first and directly the camel in order to reduce source of infection → use of trypanocidal drugs**

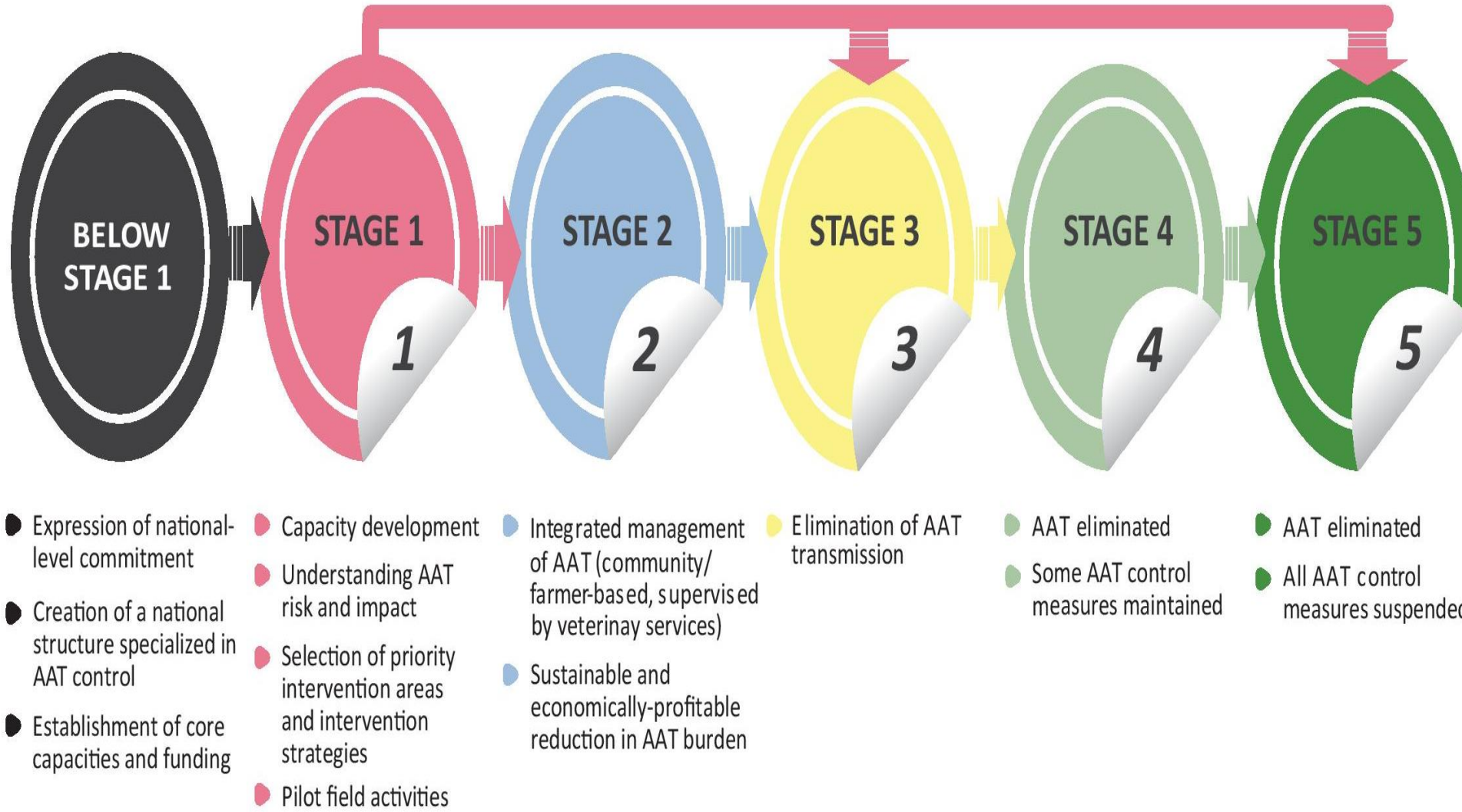
IV. 2 COMPONENTS FOR A SURRA CONTROL STRATEGY

- **Comp 1: Surra control/elim in camels**
- **Use of effective trypanocidal drugs**
- **Use treatment protocols based on the epi situation**

- **Comp 2: Strengthening capacities of vet services**
  - **Improving knowledge of VS on camel diseases**
  - **Promoting proximity VS based on CAHWs**

- **Comp 3: Control other major camel diseases**
  - **Mange (sarcoptic)**
  - **Helminthoses**
  - **Camel pox**

V. IMPLEMENTATION APPOACH : PCP (AAT)



VI. 1 CONCLUSION

- **Growing role of camels in African economy**
- **This role is likely to increase with the climatic change**
- **Surra is still a major constraint to camel rearing**
- **The impact of Surra may increase with the introduction of camels into more humid regions**
- **An organized collective fight against Surra along with other major camel diseases will improve camel productivity**

VI.2 RECOMMENDATIONS

Scientific com to fill the following knowledge gaps:

- **The reservoir role of horses donkeys and dogs in transmission of *T.evansi***
- **Level of drug resistance: Cymelarsan and Antrycide**
- **Pilot control projects lessons before scaling up**

Decision makers:

- **AU-IBAR to set a regional Surra control program**
- **With 2 sub-regional coordinated groups: WA –fNA; EA-eNA**

THANKS FOR YOUR ATTENTION