Third FAO/IAEA International Conference on

Area-Wide Management of Insect Pests:

Integrating the Sterile Insect and Related Nuclear and Other Techniques

BOOK OF ABSTRACTS

Organized by the

FAO FIAT PANIS

IAEA

Joint FAO/IAEA Programme
Nuclear Techniques in Food and Agriculture

22–26 May 2017
Vienna, Austria

CN-248

Abstract ID 183

A Staged, Progressive Pathway for the Control and Elimination of Tsetse-transmitted African Animal Trypanosomosis

Giuliano CECCHI[1], Oumar DIALL[1], Gift WANDA[2], Rafael ARGILÉS-HERRERO[3], Marc J.B. VREYSEN[3], Giovanni CATTOLI[3], Gerrit VILJOEN[3], Raffaele MATTIOLI[1] and Jérémy BOUYER[3]

[1]Food and Agriculture Organization of the United Nations (FAO), Sub-regional Office for Eastern Africa, Addis Ababa, Ethiopia, Email: *giuliano.cecchi@fao.org*
[2]PATTEC, African Union, Addis Ababa, Ethiopia
[3]Joint FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture, Vienna, Austria

Background: Progressive Control Pathways (PCP) and the related implementation roadmaps are used in the control and elimination of a number of human and animal diseases, including foot-and-mouth disease, peste des petits ruminants, brucellosis and rabies. International organizations such as FAO, OIE and WHO, rely on PCP frameworks for planning, implementing and evaluating interventions against diseases. Flexible, stepwise PCPs enable to structure the road to disease freedom through a series of achievable, discrete stages. Here we outline a novel PCP for the control and elimination of tsetse-transmitted African animal trypanosomosis (AAT), the bane of poor livestock keepers in sub-Saharan Africa.

Methodology/Results: The PCP for AAT is structured along five stages and a pre-entry level, i.e. 'below Stage 1' (Figure). A regular step-wise progression is the rule (i.e. from Stage N to Stage N + 1) but fast-tracking is possible in specific circumstances. In order to move from one stage to the next, the set goals for the ongoing stage must have been achieved, and a plan for the following stage must be prepared. Independent validation is required.

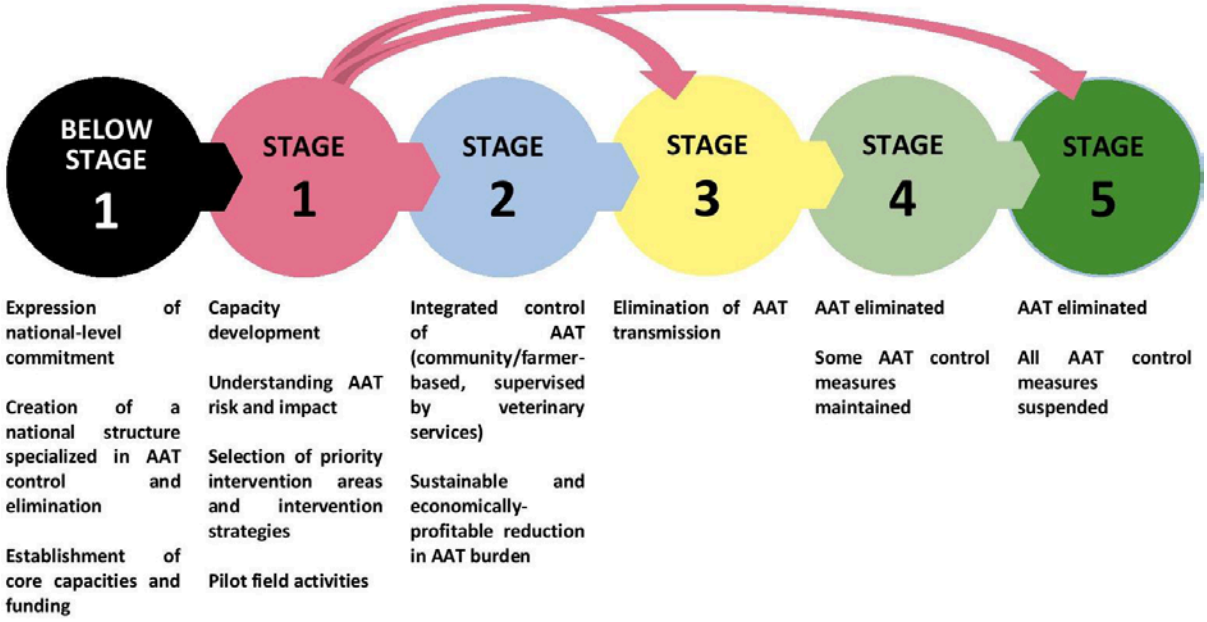

Fig. 1. *Progressive pathway for the control and elimination of AAT.*

Key requirements for a country to enter the PCP (i.e. to move to 'Stage 1') include political and financial commitment for the progressive control and elimination of AAT, and the existence of a functioning Specialized National Structure having core capacities and mandate to deal with tsetse and AAT. When in Stage 1, affected countries have to develop technical capacities, and gain a sufficient understanding of AAT distribution, risk and impact for an evidence-based planning of subsequent activities; pilot field interventions are also conducted.

Larger scale field activities are implemented in Stage 2 and beyond, within the priority areas identified in Stage 1. Stage 2 aims at a sustainable reduction of the AAT burden, and the intervention strategy hinges on the integrated control of AAT (a community/farmer based approach).

The focus of the PCP's final stages (3 to 5) is to create sustainable AAT-free areas. Stage 3 is completed when AAT transmission is interrupted. In Stage 4, some control measures are maintained, while in Stage 5 the elimination of AAT must be sustainable in the absence of interventions.

Conclusions: AAT elimination normally requires the elimination of the tsetse vector. The sterile insect technique (SIT), which works best when wild tsetse densities are very low, can be a useful tool in the elimination scenario. The PCP for AAT is consistent with the phased conditional approach recommended by FAO/IAEA for the implementation of area-wide integrated pest management programmes that might include the SIT. Importantly, the PCP enables to better position tsetse and AAT interventions in the broader context of poverty reduction, hunger eradication and increased resilience of vulnerable and marginalized rural communities, which are some of the major objectives of FAO and are included in the Sustainable Development Goals.