Food and Agriculture Organization of the United Nations

IAEA International Atomic Energy Agency Atoms for Peace

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

Third FAO–IAEA International Conference on Area-wide Management of Insect Pests: Integrating the Sterile Insect and Related Nuclear and Other Techniques

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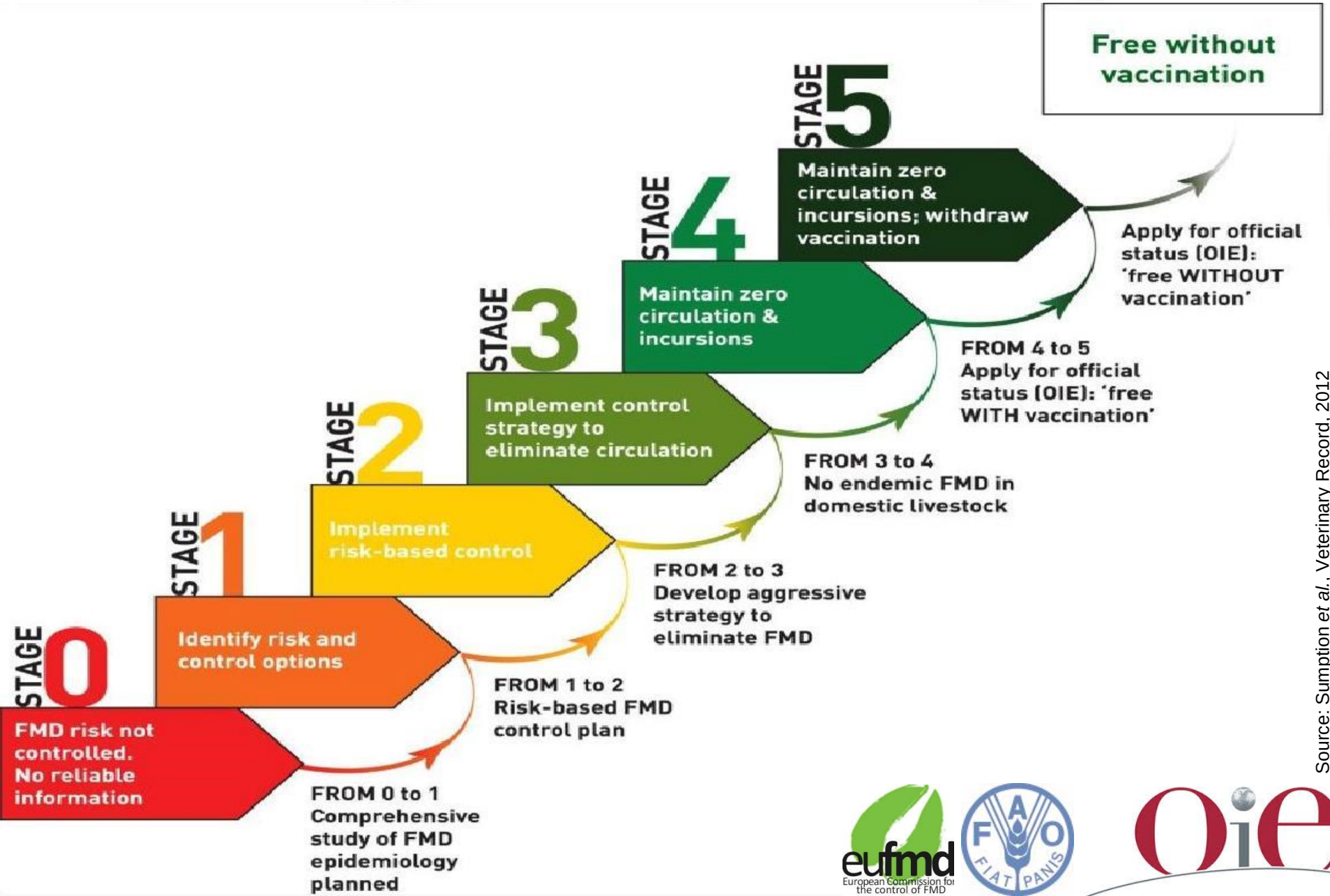
Giuliano Cecchi[1], Oumar Diall[1], Gift Wanda[2], Rafael Argilés-Herrero[3], Marc J. B. Vreysen[3], Giovanni Cattoli[4], Gerrit J. Viljoen[4], Raffaele Mattioli[5], Jérémy Bouyer[3-6-7]

[1]FAO, Sub-regional Office for Eastern Africa, Addis Ababa, Ethiopia`
[2]AU-PATTEC, Addis Ababa, Ethiopia
[3]Joint FAO/IAEA Programme, Insect Pest Control, Vienna, Austria,
[4]Joint FAO/IAEA Programme, Animal Production and Health, Vienna, Austria,
[5]FAO, Animal Production and Health Division, Rome, Italy,
[6]Unité Mixte de Recherche INTERTRYP, CIRAD, Montpellier, France.
[7]Unité Mixte de Recherche CMAEE, CIRAD, Montpellier, France

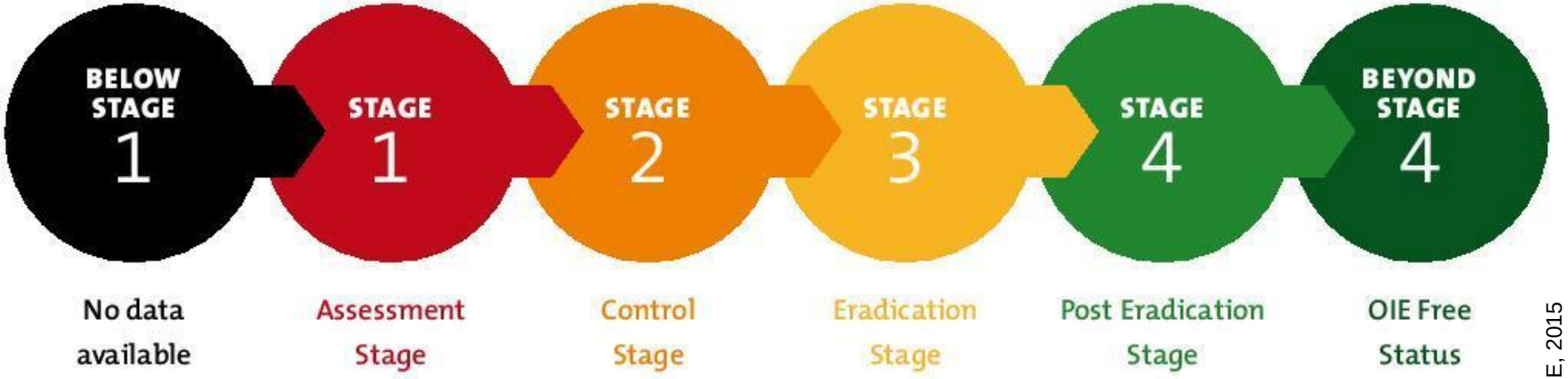
Progressive Control Pathways (PCP)

- PCP and the related implementation roadmaps are tools already applied to the control, elimination and eradication of a number of diseases
  - Foot-and-Mouth Disease (FMD)
  - *Peste des Petits Ruminants* (PPR)
  - Brucellosis
  - Rabies
- PCP are flexible, stepwise approaches enabling to structure the road to disease freedom through a series of achievable, discrete steps.
- PCP are used by a number of international organizations
  - FAO
  - OIE
  - WHO
  - others



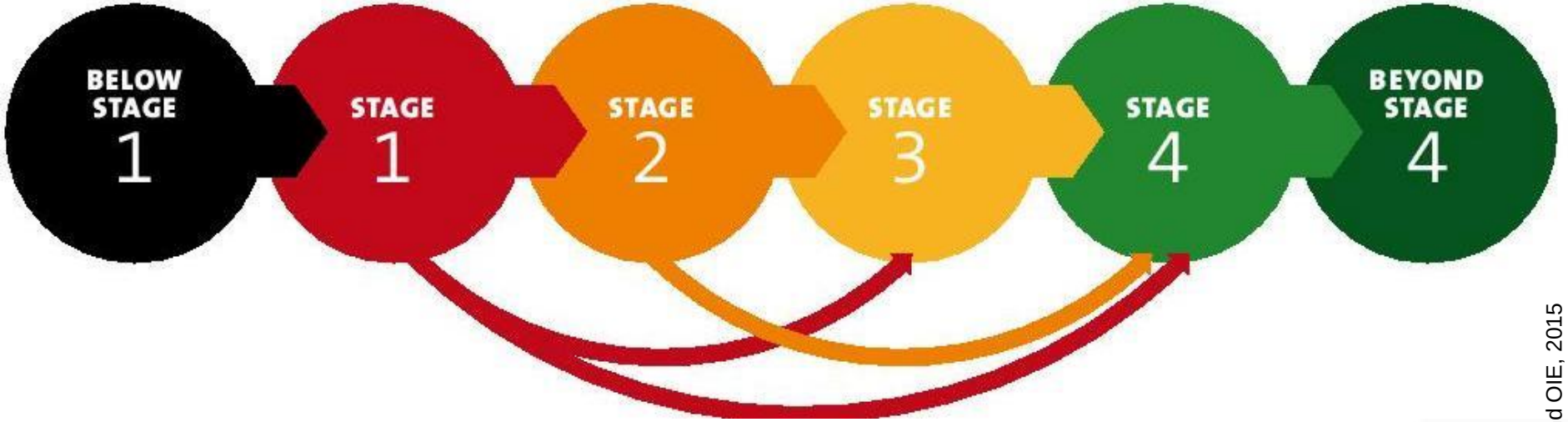
Source: Sumption *et al.*, Veterinary Record, 2012

PCP for PPR



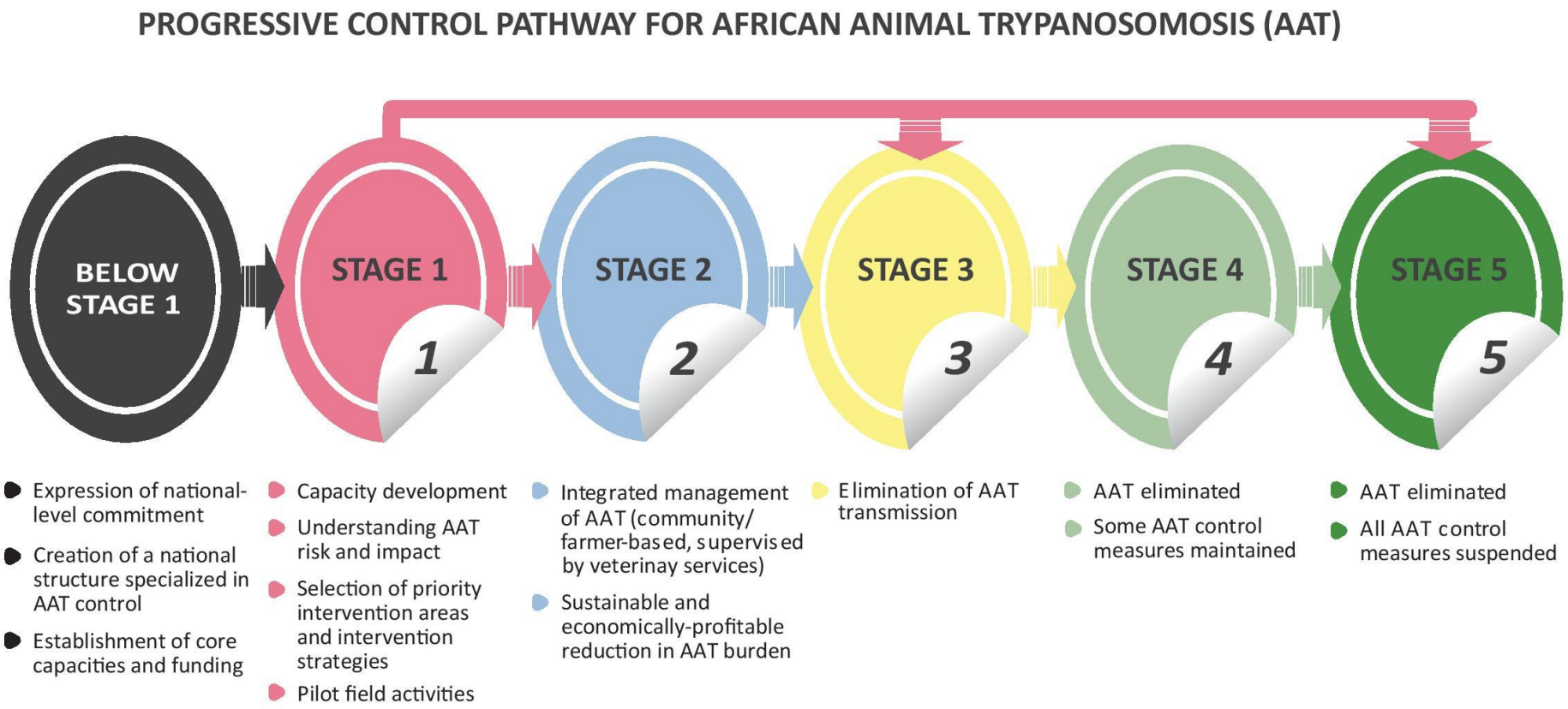
Source: FAO and OIE, 2015

PCP for PPR: fast-tracking



Source: FAO and OIE, 2015

PCP for AAT



Source: Diall *et al.*, Trends in parasitology, 2017

PCP operational development

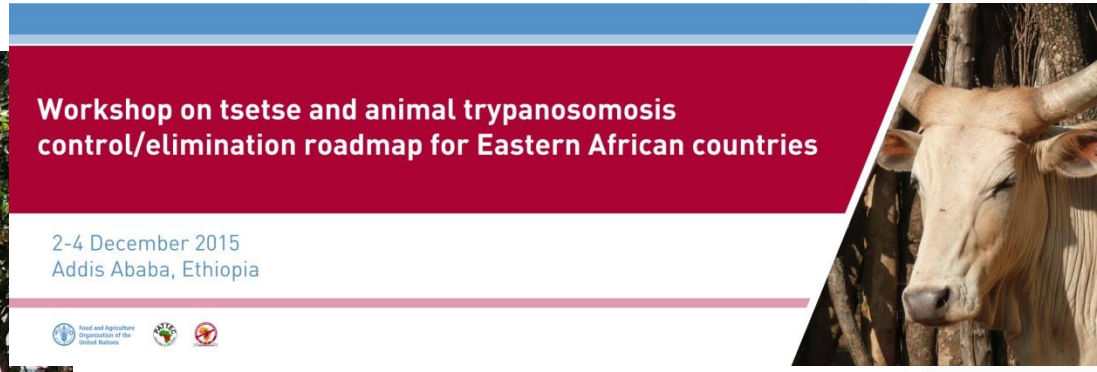
- Led by FAO
  - initiated by the FAO Sub-regional Officer for Eastern Africa
  - in the framework of Programme Against African Trypanosomosis (PAAT)
- Partnerships at the institutional, technical and scientific level
  - IAEA, AU-PATTEC, CIRAD
- Consultations
  - OIE
    - for the guidance on OIE norms and procedures such as declaration of disease freedom
  - WHO
    - informed and supportive of the initiative, but not directly involved, as the PCP focuses on Animal trypanosomosis

Technical material

- Opinion paper
  - Developing a Progressive Control Pathway for African Animal Trypanosomosis, *Trends in parasitology* (in press)
  - It outlines the general aspects of the PCP
- Detailed technical document
  - In progress
  - It will describe the PCP for AAT in more technical detail

Engagement of partners and beneficiaries

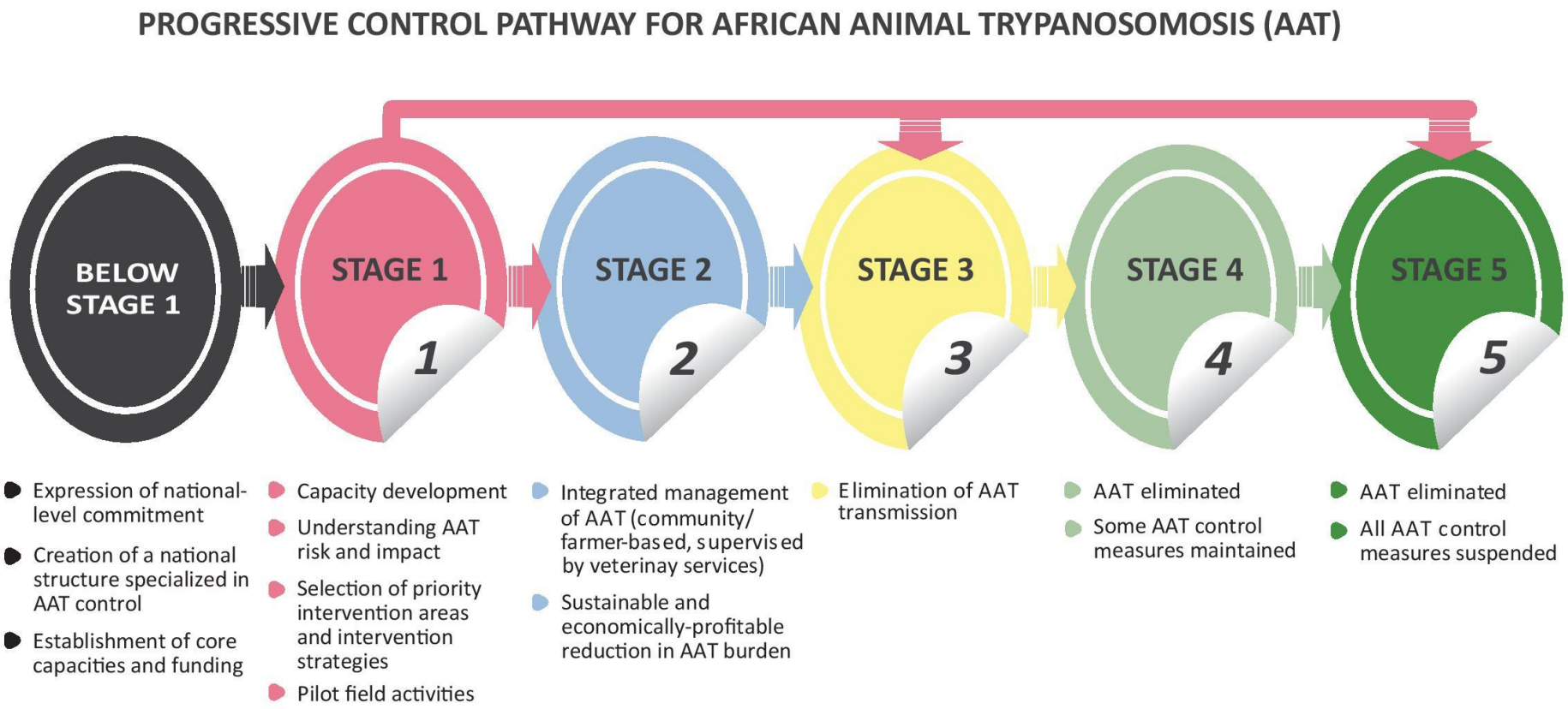
- Two FAO/AU-PATTEC workshops for AAT-affected countries in Eastern Africa
  - FAO-SFE Office, Addis Ababa, Ethiopia
  - December 2015, November 2016



Workshops

- Participants
  - Burundi, DRC, Rwanda, Kenya, Uganda, Tanzania, Ethiopia, Sudan, South Sudan (AAT affected countries)
  - AU-PATTEC, IAEA, CIRAD, IRD, GALVmed, IGAD
- Achievements
  - PCP for AAT presented, discussed and disseminated to affected countries and other stakeholders
  - Draft Country Profiles/Briefs for country positioning in the PCP produced
- Two project documents based on the PCP presented and discussed:
  - Ethiopia (FAO-TCP)
  - Sub-regional SFE (focus Countries: Kenya and Tanzania)
- Funding
  - Organized and financially supported by FAO-SFE
  - Additional support from the Government of Italy
    - FAO Regional Project (GCP/RAF/502/ITA)

PCP for AAT

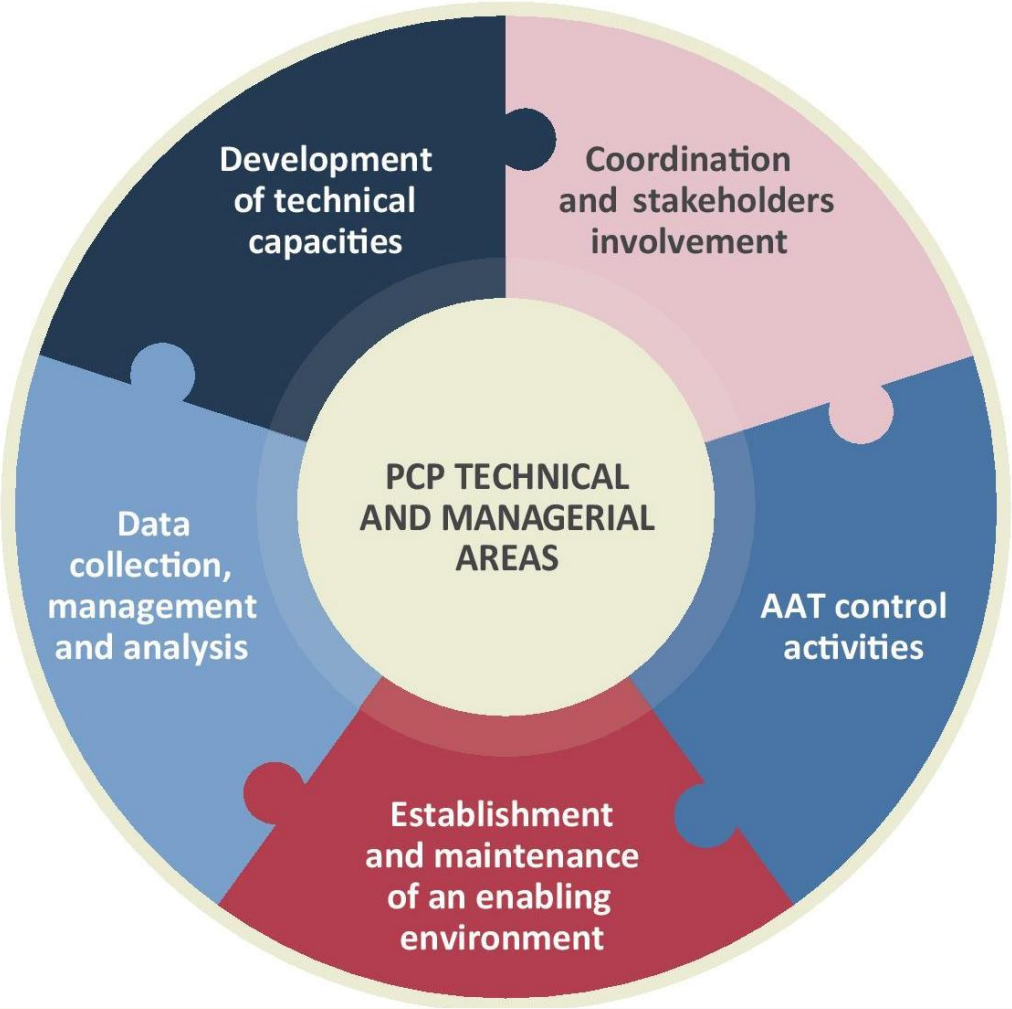


Source: Diall *et al.*, Trends in parasitology, 2017

General Principles

- A regular step-wise progression is the rule (i.e. from Stage N to Stage N + 1)
- Fast-tracking is possible.
- To move from one stage to the next
  - a set of minimum requirements must be met
  - a detailed plan to be implemented in the following stages must be prepared.
- Independent validation is required.
- “Stage below 1” and “Stage 1”are mainly national-level endeavours
- Stages 2 to 5 will normally target selected intervention areas
  - within a country, different AAT-affected areas can be at different PCP stages

PCP Cross-cutting areas



BELOW STAGE 1

- Political commitment at the national level for the progressive control of AAT
  - Specialized National Structure (SNS) dedicated to tsetse and AAT control
  - SNS must be endowed with core technical and managerial competencies, although the strengthening of their capacities is addressed in subsequent stages
  - secure core funding
  - engagement in the AU-PATTEC initiative
- Self-assessment and planning. Countries need to:
  - appraise their existing capacities, epidemiological knowledge, institutional arrangements, human and financial resources
  - develop a plan, which will be implemented in Stage 1

STAGE 1

- To develop technical capacities
- To gain an understanding of AAT distribution, risk and impact for an evidence-based planning of field activities
  - WHERE: prioritization of interventions areas
  - HOW: choice of strategy (integrated management/Stage 2 vs elimination/Stages 3 and beyond)
- Pilot field activities
  - Major field activities are implemented in Stage 2 and beyond

STAGE 2

- Sustainable and economically-profitable reduction in AAT risk and burden.
- Target:
  - low AAT incidence/impact/burden
  - only sporadic treatments with trypanocides are needed
  - the risk of emergence and/or spread of drug resistance is minimized
- Integrated management of AAT,
  - a community- and farmers-based approach that should be co-built with local veterinary services and farmer communities,
    - combined use of tsetse control methods, diagnostic tests and trypanocidal drugs
  - Takes into account
    - eco-epidemiological settings
    - livestock production systems & sociological context
    - cattle breeds
- Main challenge: sustainability

STAGE 3

- Interrupt AAT transmission
  - in the vast majority of settings, this requires the elimination of the tsetse vector
- Interventions are more centralized than in Stage 2, but involvement of communities/livestock keepers is still crucial
- Main challenge: feasibility and sustainability
  - tsetse were eliminated in a sustainable manner only 2% of their distribution

STAGE 4

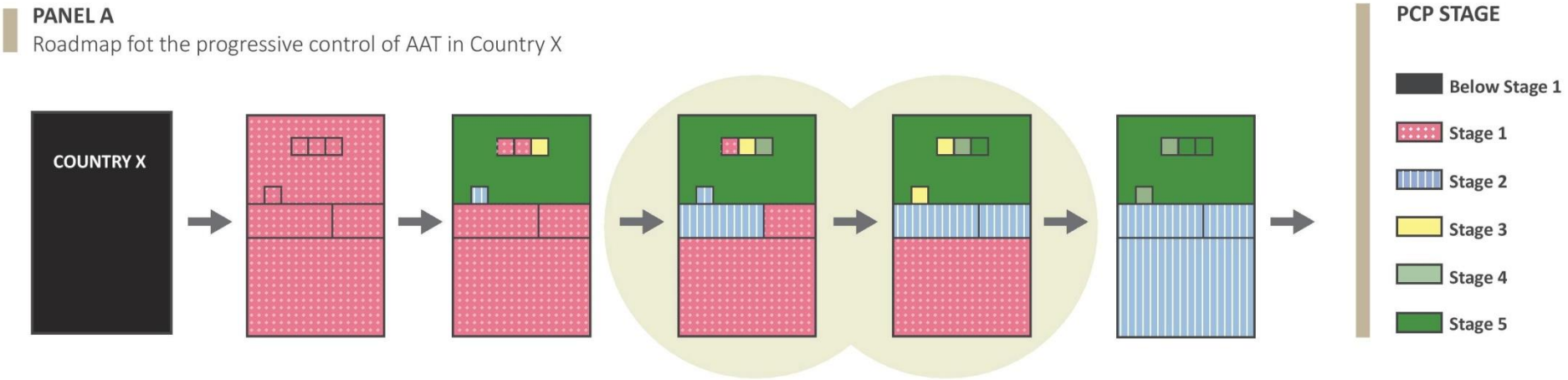
STAGE 5

- Stage 4
  - eliminate AAT transmission, creation of AAT-free areas
  - the maintenance of some of the control measures deployed in Stage 3 is still required
- Stage 5
  - all control measures are lifted, and the AAT-free status should be maintained in their absence

OIE

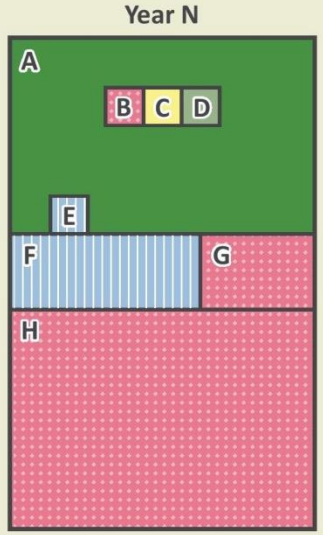
- Tsetse-transmitted trypanosomosis is a OIE notifiable disease
- OIE official recognition of “freedom from AAT”
  - Not available, so far
  - Available only for 6 diseases
    - bovine spongiform encephalopathy (BSE), foot and mouth disease (FMD), contagious bovine pleuropneumonia (CBPP), African horse sickness (AHS), *peste des petits ruminants* (PPR) and classical swine fever (CSF).
- Country-self declaration
  - A country can self-declare, under its own responsibility and by providing the relevant epidemiological evidence, that the entire territory or a zone is free from AAT
    - OIE, Terrestrial Animal Health Code, 2016
  - Countries can request OIE to publish their self-declaration of freedom, recognising that this self-declaration remains under the full responsibility of the concerned Country.

Example of Roadmap

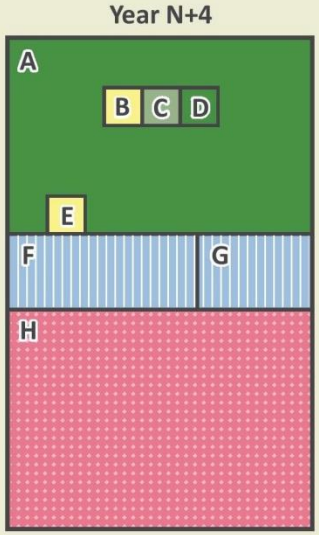


Example of work plan (5 years)

PANEL B
Example of work plan for a five-year period



Zone Name	Zone area [% of country area]	Year N	N+1	N+2	N+3	N+4
A	40	stage 5				
B	1	stage 1			stage 3	
C	1	stage 3				stage 4
D	1	stage 4			stage 5	
E	1	stage 2			stage 3	
F	10	stage 2				
G	6	stage 1		stage 2		
H	40	stage 1				



PCP for AAT and AW-IPM

- The PCP for AAT is consistent with the phased conditional approach, recommended by FAO/IAEA when a SIT component is envisaged for tsetse elimination
- The PCP for AAT enables to better position AW-IPM against tsetse in the broader context of the Sustainable Development Goals.

Future activities for the PCP for AAT

- Develop a detailed technical document/guidelines, by
  - Expanding the “Opinion” paper
  - Building on the available draft
- Broader consultation and dissemination
  - Organize further workshops/meetings to
    - enhance beneficiaries engagement (AAT-affected countries)
    - gather additional technical input from experts
- Resource mobilization
  - FAO and partners
    - To refine and disseminate the PCP
  - AAT-affected countries
    - To operationalize the PCP for AAT at the country and field level
    - Develop and implement PCP-compliant projects

Reference

- Developing a Progressive Control Pathway for African Animal Trypanosomosis. Diall O., Cecchi G., Wanda G., Argilés-Herrero R., Vreysen M.J.B., Cattoli G., Viljoen G.J., Mattioli R., Bouyer J. *Trends in parasitology* 2017. http://dx.doi.org/10.1016/j.pt.2017.02.005

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    - FAO-SFE
    - FAO/PAAT
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    - Government of Italy
      - FAO Regional Project “Improving food security in sub-Saharan Africa by supporting the progressive reduction of tsetse-transmitted trypanosomosis – Phase 2” (GCP/RAF/502/ITA)

Thanks for your attention