Food and Agriculture Organization of the United Nations

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MARCH 2019

CONTROLLING TSETSE AND TRYPANOSOMOSIS TO PROTECT AFRICAN LIVESTOCK KEEPERS, PUBLIC HEALTH AND FARMERS' LIVELIHOODS

Tsetse-transmitted trypanosomoses are a family of parasitic diseases unique to Africa that affect both people (Human African Trypanosomosis – HAT, or "sleeping sickness") and animals (African Animal Trypanosomosis – AAT, or "nagana"). Trypanosomosis occurs in 37 sub-Saharan countries, comprising an area greater than 10 million km² – approximately one-third of the African continent. The infection threatens over 50 million people and at least 50 million cattle.

Probably more than any other disease affecting both livestock and people, Trypanosomosis constrains agricultural production and is a major cause of food insecurity in vast and fertile swaths of sub-Saharan Africa. As many other vector-borne diseases, the impact and distribution of Trypanosomosis are also affected by climate change.

Every year, AAT causes high morbidity and mortality in livestock, while approximately 35 million doses of trypanocidal drugs are administered. The annual losses in terms of cattle production alone exceed USD 1 billion, while the total direct and indirect economic losses in terms of agricultural Gross Domestic Product (GDP) are estimated at over USD 4 billion per year.

The disease is often neglected by both endemic countries and donors as it mostly affects poor and vulnerable smallholders in rural areas and pastoralists. The chronic nature of the disease and its silent manifestations often do not raise as many concerns among regulatory authorities as do other animal diseases.

In the framework of the Programme Against African Trypanosomosis (PAAT), FAO addresses the constraints that Trypanosomosis poses on agricultural production, rural development and food security.

THE IMPACT OF TRYPANOSOMOSES

Trypanosomoses affect human health, animal health, agricultural production and rural development.

They limit the utilization of lands with high potential for agricultural production, and constrain the diversification of crop-livestock production systems. The economic losses are compounded by the impact of the disease on human health and by complex sociocultural and food insecurity dimensions. It is no coincidence that tsetse-infested countries are poorly developed and low-income, food-deficit countries.

KEY FACTS

AFRICAN ANIMAL TRYPANOSOMOSIS

AFRICAN TRYPANOSOMOSIS IS A LETHAL INFECTIOUS DISEASE CAUSED BY UNICELLULAR ORGANISMS NAMED TRYPANOSOMES

THE DISEASE IS CYCLICALLY TRANSMITTED BY THE BITE OF TSETSE FLIES AND IT AFFECTS BOTH HUMANS (SLEEPING SICKNESS) AND LIVESTOCK (NAGANA)

THERE IS NO VACCINE AGAINST TRYPANOSOMOSIS

THE DISEASE THREATENS OVER 50 MILLION PEOPLE AND AT LEAST 50 MILLION CATTLE

EVERY YEAR, AFRICAN ANIMAL TRYPANOSOMOSIS CAUSES HIGH MORBIDITY AND MORTALITY IN LIVESTOCK, WHILE APPROXIMATELY 35 MILLION DOSES OF TRYPANOCIDAL DRUGS ARE ADMINISTERED

TRYPANOSOMOSES REDUCE AGRICULTURAL GDP BY OVER USD 4 BILLION A YEAR

WITHIN THE PAAT FRAMEWORK, FAO HAS DEVELOPED THE PROGRESSIVE CONTROL PATHWAY, AIMING TO REDUCE, AND WHERE POSSIBLE ELIMINATE, THE BURDEN OF AAT

FAO-AFRICAN ANIMAL TRYPANOSOMOSIS

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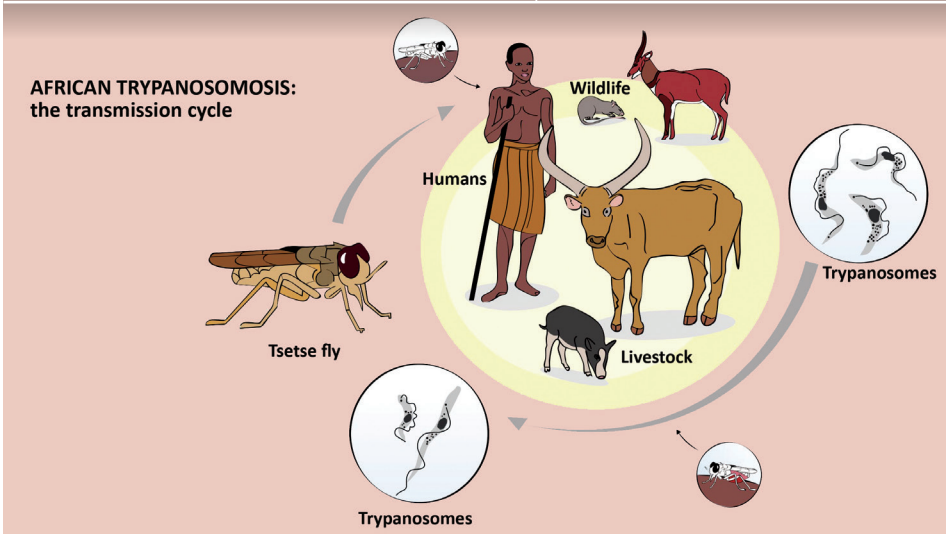

The human form of the disease (sleeping sickness) mainly affects isolated populations in rural areas. In recent years, advances have been made to address HAT, to the point that the World Health Organization (WHO) has now targeted sleeping sickness for elimination. In contrast, progress in the control of tsetse flies and AAT has been much more limited.

FAO'S RESPONSE

In 1997, FAO established PAAT, recognizing the challenge's complex and dynamic medical, veterinary, agricultural and environmental dimensions.

PAAT provides the umbrella for an international alliance, with a Secretariat comprising FAO, WHO, the International Atomic Energy Agency (IAEA) and the African Union (AU), the latter through its Interafrican Bureau for Animal Resources (AU-IBAR). The AU Pan-African Tsetse and Trypanosomosis Eradication Campaign (PATTEC) and the World Organisation for Animal Health (OIE) are key partners of PAAT.

PAAT brings together actors concerned with tsetse flies and African trypanosomosis research and control. It provides expertise on various aspects of disease management, associated land use issues, environmental protection, sustainable livestock agriculture and socio-economic development. PAAT also engages with academia to promote applied research within development activities.

Other PAAT areas of work include the development and application of novel technologies for improved animal health and production and international standards (for example, on the quality control and quality assurance of trypanocidal drugs).

PROGRESSIVE CONTROL PATHWAY FOR AAT

To provide a strategic framework to reduce the disease burden, FAO developed the Progressive Control Pathway (PCP) for AAT. PCPs are staged, step-wise approaches that are increasingly used for the reduction, elimination and eradication of a range of animal diseases, including Foot-and-mouth disease, *Peste des petits ruminants*, Brucellosis and Rabies. They provide systematic risk-based frameworks for planning and evaluating field interventions. In particular, they enable realistic disease control objectives to be defined and achieved.

In the case of tsetse-transmitted Trypanosomosis, efforts to reduce the disease burden aim to increase resilience among affected rural communities through enhanced livestock production and productivity (such as meat and milk production) and livestock-crop integration.

To ensure sustainability, the PCP for AAT promotes the reinforcement of local capacities. Innovative control tools, such as Livestock Protective Fences (LPFs), are introduced to help smallholder farmers improve productivity, enhance food security and consequently alleviate rural poverty. Disease risk mapping for evidence-based decision-making is promoted through the use of data management systems and Geographic Information Systems (GIS). In particular, the development of atlases of tsetse and trypanosomosis at the national and continental level is supported through capacity building, technical assistance and provision of IT equipment.

FAO delivers its assistance to affected countries in close collaboration with other international organizations mandated to tackle trypanosomoses in the African region, most notably AU, WHO, IAEA and OIE.