



Food and Agriculture
Organization of the
United Nations

AG:GTFS/RAF/474/ITA
Terminal Report

FAO/GOVERNMENT OF ITALY TRUST FUND FOR FOOD SECURITY AND FOOD SAFETY

IMPROVING FOOD SECURITY IN SUB- SAHARAN AFRICA BY SUPPORTING THE PROGRESSIVE REDUCTION OF TSETSE- TRANSMITTED TRYPANOSOMOSIS IN THE FRAMEWORK OF THE NEW PARTNERSHIP FOR AFRICA'S DEVELOPMENT

REGIONAL AFRICA

PROJECT FINDINGS AND RECOMMENDATIONS

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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Report prepared for
the Government of Italy
by
the Food and Agriculture Organization of the United Nations

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome, 2016

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The Food and Agriculture Organization is greatly indebted to all those who assisted in the implementation of the project by providing information, advice and facilities.

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LIST OF ABBREVIATIONS

| | | |
|-----------|---|--|
| AfDB | - | African Development Bank |
| AAT | - | Animal African Trypanosomosis |
| AU-PATTEC | - | African Union-Pan African Tsetse and Trypanosomiasis Eradication Campaign |
| AU-IBAR | - | African Union-InterAfrican Bureau for Animal Resources |
| CAADP | - | Comprehensive Africa Agriculture Development Programme |
| CGIAR | - | Consultative Group on International Agricultural Research |
| CIRAD | - | French Agricultural Research Centre for International Development |
| CIRDES | - | Centre International de Recherche-Developpement Sur l'Elevage en Zone Subhumide |
| GIS | - | Geographic Information Systems |
| HAT | - | Human African trypanosomosis |
| IAEA | - | International Atomic Energy Agency |
| ILRI | - | International Livestock Research Institute |
| ITM | - | Institute of Tropical Medicine |
| LPF | - | Livestock protective fencing |
| LPS | - | Leica Photogrammetry Suite |
| NEPAD | - | New Partnership for Africa's Development |
| PAAT | - | Programme Against African Trypanosomosis |
| UN | - | United Nations |
| WHO | - | World Health Organization |

A. OVERVIEW

A.1 PROJECT PROFILE

| | | |
|---|--|--------------------------------|
| Country | Regional Project (RAF): Burkina Faso, Ethiopia, Ghana, Kenya, Mali and Uganda | |
| Project Symbol | GTFS/RAF/474/ITA | |
| Project Title | Improving food security in sub-Saharan Africa by supporting the progressive reduction of tsetse-transmitted trypanosomosis in the framework of the New Partnership for Africa's Development (NEPAD) | |
| Resource Partner | Government of Italy, through the Italian Contribution to the FAO Trust Fund for Food Security and Food Safety | |
| Actual EOD | 1 November 2012 | |
| Actual NTE | 31 December 2015 | |
| Participating Organizations (e.g. Ministry of Agriculture, etc.) | African Union-Pan African Tsetse and Trypanosomiasis Eradication Campaign (AU-PATTEC), World Health Organization (WHO), International Atomic Energy Agency (IAEA), French Agricultural Research Centre for International Development (CIRAD, France), <i>Centre International de Recherche-Developpement Sur l'Elevage en Zone Subhumide</i> (CIRDES – Burkina Faso), Institute of Tropical Medicine (ITM – Belgium), International Livestock Research Institute (ILRI -Kenya) | |
| Implementing Partners (List): | | |
| Name | Type (NGO/Community Based Organization/Gov.) | Total Funds Transferred |
| African countries affected by tsetse and trypanosomosis | Government | |
| AU-PATTEC | Government | |
| WHO | United Nations (UN) | |
| IAEA | UN | |
| CIRAD | Research institute | |
| CIRDES | Research institute | |
| ITM | Research institute | |
| ILRI | Research institute | |

| Contribution to FAO's Strategic Framework <i>Indicate the title of each higher level result to which the project contributes</i> | |
|--|--|
| Organizational Outcome(s) | <p>Strategic Objective 2: Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner.</p> <p>Outcome 1: Producers and natural resource managers adopt practices that increase and improve the provision of goods and services in the agricultural sector production systems in a sustainable manner.</p> <p>Output 1.3: Organizational and institutional capacities of public and private institutions, organizations and networks strengthened to support innovation and the transition toward more sustainable agricultural production systems.</p> |
| Regional Priority Area/Initiative | <p>Increase production and productivity of crop, livestock and fisheries.</p> <p>Regional Initiative 2: Integrated management of agricultural landscapes: sustainable production intensification and value chain development.</p> |
| Country Programming Framework Outcome(s) | All the beneficiary countries have identified the support to the livestock sector as a priority in their CPF. |
| UNDAF Outcome(s) | N/A |

A.2 FINANCIAL DATA in USD¹

(as at: 24 February 2016)

| | |
|----------------------|---------------|
| Budget | USD 1 000 000 |
| Cash received | USD 1 000 000 |
| Delivery | USD 977 675 |

A.3 EXECUTIVE SUMMARY

Trypanosomoses are lethal parasitic diseases of humans and livestock, which cause poverty and food insecurity in vast areas of sub-Saharan Africa. The main objective of the project was to enable affected countries and stakeholders to better address the problem of tsetse-transmitted trypanosomosis.

¹ Data source: FPMIS/ Data Warehouse

Cost-sharing for the implementation of the project was actively pursued and extensively practiced. The financial contributions that were provided by governmental counterparts and farmers were particularly relevant, as they signalled the strong demand for, and commitment to project activities and sustainability. In addition, gender balance was encouraged and taken into account in all project activities.

Capacity development was the key pillar of the project, which was extensively pursued through a variety of approaches, including formal training courses; on-the-job training workshops; and collaborative activities with a training component. Through the organization of 11 national and two regional training courses, 310 people from 19 African countries were trained on data management and Geographic Information Systems (GIS) for improved decision-making in field interventions against trypanosomosis.

Eight missions of technical assistance were carried out in affected countries, in order to develop information systems (i.e. national-level atlases of tsetse and animal trypanosomosis); produce and consolidate strategic plans and project proposals; and provide on-the-job training.

Animal production and health packages were piloted, comprising livestock protective fencing (LPF), an innovative technology that was introduced in southern Ethiopia, on which material, sensitization activities and training courses were provided for 90 farmers.

The project promoted the utilization of low-cost, high-impact technologies that greatly contribute to sustainability. In the field of data management and GIS for decision-making, strong emphasis was put on freeware and open source software, as well as on public domain datasets.

The range, innovative quality, high profile and capillary dissemination of project activities and achievements were attested by 14 open-access publications in peer-review international scientific journals; and participation and presentations at ten international coordination meetings, workshops and conferences.

B. RELEVANCE

The problem: *(This section explains the rationale behind the project and should be consistent with the problem definition provided in the approved Project Document, including eventual changes). Briefly describe the project context at appraisal, the central problem and the critical gaps that the project was supposed to address.*

Trypanosomoses are lethal parasitic diseases of humans and livestock, which cause poverty and food insecurity in vast areas of sub-Saharan Africa. The negative impacts of these diseases are well recognized by the New Partnership for Africa's Development (NEPAD) and its programme for agriculture, the Comprehensive Africa Agriculture Development Programme (CAADP). In particular, CAADP identifies trypanosomosis as the major constraint in those areas of Africa having the greatest opportunities for the expansion of livestock-agriculture, and also underscores that mixed crop-livestock systems are bound to play a significant role in vast areas of the continent, if the burden of trypanosomosis is reduced.

Since 1997, FAO, the International Atomic Energy Agency (IAEA), the World Health Organization (WHO) and the African Union-InterAfrican Bureau for Animal Resources (AU-IBAR) have provided assistance to affected countries under the umbrella of the Programme Against African Trypanosomosis (PAAT). Furthermore, in 2001 a major thrust to tackle tsetse-transmitted trypanosomosis came from African Heads of State and Government, who launched the Pan African Tsetse and Trypanosomosis Eradication Campaign (AU-PATTEC). The initiative received financial support from the African Development Bank (AfDB), which provided resources to implement multinational field interventions in six countries (Burkina Faso, Ethiopia, Ghana, Kenya, Mali and Uganda).

Owing to the complexities and challenges inherent in the planning, execution and monitoring of national and multinational interventions against African trypanosomosis, FAO recognized the need to scale up its technical assistance to affected countries, which was addressed through the implementation of this project.

The response: *Present the project objectives, including any changes to the original objectives as in the Project Document, and describe the strategy identified to meet these objectives (key outcomes and outputs and planned activities, including any changes). The characteristics, location and number of planned beneficiaries/stakeholders should also be specified (according to the Project Document, and with any changes made in agreement with the donor). Was the project designed and implemented in synergy with other projects in the same sector (in country or subregion/region) to address the same or correlated problem? Where relevant, please include an outline of official arrangements with government, NGOs (Non-governmental Organizations) and private sector partners*

The project strategy was based on the following six pillars:

- the development of institutional capacities, with a focus on more effective, evidence-based decision-making for field interventions;
- the provision of technical assistance on disease risk mapping, using freeware and open source software (GIS);
- data management and knowledge sharing, with an emphasis on continental and national atlases of tsetse and animal trypanosomosis, and the continental atlas of sleeping sickness;
- the establishment of partnerships and synergies (AU, other UN agencies with a mandate on different aspects of the trypanosomosis problem, international research institutes);
- field piloting of innovative animal production and health packages aiming to alleviate poverty; and
- streamlining of the gender dimension.

With a view to streamlining collaboration with and support to AU-PATTEC, the project officer was posted at the FAO Subregional Office for Eastern African (SFE), Addis Ababa (Ethiopia), and was based for four days a week at the AU-PATTEC offices.

Cost-sharing for the implementation of the project was actively pursued and extensively practiced. The financial contributions that were provided by governmental counterparts and farmers were particularly relevant, as they signalled the strong demand for, and commitment to project activities and sustainability.

Gender balance was encouraged and taken into account in all project activities, and a workshop was organized on the streamlining of the gender component in livestock-sector development.

The project design, activities and outcomes were very relevant to the problems that were to be solved, as demonstrated by the outcomes of the Tripartite Review Mission (8-12 December 2014, Addis Ababa, Ethiopia). Regarding the project design, it ensured a high level of flexibility in the implementation of project activities, enabling a wide range of

synergies and cost-sharing opportunities to be exploited, such as carrying out all capacity-development and training activities on a cost-sharing basis with partners and beneficiaries.

The project fitted in with FAO Strategic Objective 2 (SO2) and Regional Initiative 2 (see Section A.1 [Contribution to FAO's Strategic Framework]), and contributed to a number of SO2 products and services and outputs, which are outlined below.

Products and services

- Strengthening organizational and institutional capacities to support innovation, and the transition towards more sustainable production systems (2010302).
- Supporting the technical capacity development of, and cross-sectoral collaboration among institutions and organizations, for the development and implementation of practices that increase and improve the provision of goods and services in a sustainable manner (2010303).
- Supporting and promoting the development and/or improvement of global and regional strategies and organizations, to improve and exchange knowledge and practices (2010307).

Outputs

- Output 2.1.3: Organizational and institutional capacities of public and private institutions, organizations and networks are strengthened to support innovation and the transition toward more sustainable agricultural production systems.
- Output 2.4.1: Relevant data and information is assembled, aggregated, integrated and disseminated, and new data is generated through analyses and modelling, jointly with partners.
- Output 2.4.2: Methodologies, norms, standards, definitions and other tools for the collection, management, aggregation and analysis of data are formulated and disseminated.
- Output 2.4.3: Capacity-development support is provided to institutions at national and regional levels, to plan for and conduct data collection, analyses, application and dissemination.

In addition, the project contributed to Regional Initiative 2 by: (i) promoting the sustainable intensification of livestock-agricultural production by piloting innovative animal health and production packages (good practices in animal husbandry and milk hygiene); (ii) reducing malnutrition and disease risk, including zoonosis, through the increased and diversified availability of good quality and nutritious food (i.e. animal-source food);

(iii) contributing to NEPAD and CAADP; (iv) supporting AU and its specialized bodies, such as PATTEC and AU-IBAR; and (v) benefiting from partnerships with centres of the Consultative Group on International Agricultural Research (CGIAR [e.g. ILRI]).

C. ACHIEVEMENT OF RESULTS

Results achieved: *Describe the extent to which project outputs have been delivered (including major activities of each output, number of beneficiaries/stakeholders reached and quantities of inputs/services delivered) and have contributed to the achievement of the expected outcome and impact. This information should be consistent and follow the Project Log Frame structure. It should report achievement towards the indicators at all levels.*

Project achievements and impacts were grouped into three categories, which are outlined below.

1. Capacity development

A total of 310 people from 19 African countries were trained in GIS for decision-making for tsetse and trypanosomosis risk assessment and intervention, through the organization of 11 national and three regional training courses. In addition, training courses on the streamlining of the gender component in livestock-sector development were provided for 21 people from 10 countries. Capacity was further developed during technical assistance missions, and through remote assistance.

2. Technical assistance

Eight missions of technical assistance were carried out in affected countries, in order to: (i) develop information systems (i.e. national-level atlases of tsetse and animal trypanosomosis); (ii) produce and consolidate strategic plans and project proposals; and (iii) provide on-the-job training.

Animal production and health packages were piloted, comprising LPF, an innovative technology that was introduced in southern Ethiopia, on which material, sensitization activities and training courses were provided for 90 farmers. Given the impact this activity has on food security and poverty alleviation, requests for scaling-up and scaling-out were made by both farmers and the Government of Ethiopia.

3. Generation and dissemination of information for decision-making

The range, innovative quality, high profile and capillary dissemination of project activities and achievements were attested by: (i) 14 open-access publications in peer-review international scientific journals (the full list is provided in Appendix 2); and (ii) participation and presentations at ten international coordination meetings, workshops and conferences.

D. IMPLEMENTATION OF WORK PLAN AND BUDGET

Work plan and budget: *Describe the extent to which activities were implemented on time and within the planned budget. How were technical support services provided? Clearly explain any discrepancies in the numbers reached versus planned. Please also ensure a total number of beneficiaries/stakeholders reached is included in this section. Any substantial difference between planned and actual number of beneficiaries/ stakeholders should be further explained.*

No major problems in the implementation of the work plan and budget were encountered, and the project objectives were achieved. However, some no-cost extensions were required during the project, as well as budget revisions.

Specifically, the duration of the project was extended from the originally planned 18 to 37 months for the following three reasons: (i) in the early stages of the project, a delay in the recruitment of the project officer slowed down implementation; (ii) contributions were made by partners and stakeholders to project activities, both in kind and in cash (i.e. cost-sharing); and (iii) in the late stages of the project, extensions were planned and agreed in order to ensure both the completion of activities, and a seamless transition to the planned second phase of the project. For all adjustments, clear justification was given and the donor's approval was obtained. The lessons learned in the implementation of the work plan and budget were applied to the project document for the second phase of the project, which is expected to progress more quickly and smoothly.

Resource partner contribution: *One sentence on resource partner contribution, including any budget revisions and extensions.*

The Government of Italy contributed USD 1 000 000 for the implementation of the project, which was scheduled to begin on 1 November 2012 and end on 1 March 2014. However, for reasons given above, the project was extended, and actually finished on 31 December 2015.

Risk management: Describe the extent to which risks were identified and effectively managed as per the Risk Log in the Project Document. To what extent has the project been able to take appropriate measures in order to mitigate the effects of identified risks?

In order to ensure project achievements, the collaborating countries and institutions contributed financially and in kind to the activities, and designated focal point persons for cooperation and coordination. The collective will of the countries and institutions participating in project activities, and the support of the main stakeholders, including national veterinary services and smallholder farmers, enabled the ultimate success of the project.

E. SUSTAINABILITY

Please indicate how the results obtained in the following areas contributed towards the sustainability of the project:

a. Capacity development

Capacity development was the main project pillar, which was extensively pursued through a variety of approaches, including formal training courses; on-the-job training workshops; and collaborative activities with a training component. Specifically, through the organization of 11 national and two regional training courses, 310 people from 19 African countries were trained on data management and GIS for improved decision-making in field interventions against trypanosomosis; while on-the-job training was provided through technical workshops (Ghana, Mali, Angola, Sudan and Zimbabwe). Collaborative activities with a training component involved several countries (i.e. Burkina Faso, Chad, Congo, Ethiopia, Ghana, Mali, Sudan, Uganda), which also resulted in a number of peer-reviewed scientific publications, many of which were led by national counterparts. Support was also provided for the provision of advanced training courses (Doctor of Philosophy [PhD] level) for four beneficiaries from Ghana, Senegal, Sudan and Uganda.

b. Gender equality

Specific, proactive actions were undertaken to ensure gender equality. In particular, 21 people from 10 countries of Southern Africa were trained on the streamlining of the gender component in livestock-sector development. Furthermore, in all training activities, attention was given to gender by striving to promote a balanced participation in the courses. However,

gender balance could not always be achieved, because of the relatively low proportion of women in veterinary and entomological professions.

c. Environmental sustainability

The project contributed to a more balanced use of natural resources by supporting the progressive reduction of tsetse-transmitted trypanosomosis. In addition, by freeing access to fertile tsetse-infested areas, trypanosomosis control reduced the pressure from overgrazing on tsetse-free areas, and promoted a more sustainable livestock-crop agriculture. The LPF technology that was applied in the southern part of Ethiopia to reduce the impact of tsetse and trypanosomosis, and increase animal production, is an environmentally friendly technology, which contributes to improving public health.

d. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The field activities carried out in southern Ethiopia, in order to improve food security and reduce rural poverty, contributed to the right to food. In addition, all other project activities that were implemented ultimately aimed at improving food security by strengthening capacities in trypanosomosis-affected countries, and enhancing the cost-effectiveness of field interventions.

e. Technological sustainability

The project promoted the utilization of low-cost, high-impact technologies that greatly contribute to sustainability. In the field of data management and GIS for decision-making, strong emphasis was put on freeware and open source software (Quantum GIS [QGIS]), as well as on public domain datasets. Through this strategy GIS can be installed on all computers and laptops as needed, without paying for software or licences.

As regards the field interventions to improve livestock production and productivity, the low-cost, innovative LPF technology met the needs of the farmers, who also demonstrated their capacity to use it.

f. Economic sustainability

The main indicator of economic sustainability was the direct contribution to project activities by beneficiaries and stakeholders, both in cash and in kind. The contribution was estimated at approximately USD 200 000, and included inputs to training courses, workshops and meetings, as well as data management, analysis and dissemination. In addition, farmers

involved in the LPF trials directly invested in the piloting of the technology, for example by building fences to support LPF, reportedly investing far in excess of the value of the donated netting material. In addition, the farmers' willingness to pay for the technology was widely reported as an additional indicator of potential economic sustainability.

F. LESSONS LEARNED

LESSONS LEARNED – elements of success

Please indicate any good practices and lessons learned, including a source (link/email) where users may find further information.

Three good practices contributed to the success of the project (outlined below), namely partnerships; the emphasis on innovative, affordable and user and environmentally friendly technologies; and the capillary dissemination of project results.

Partnerships

Strong and strategic partnerships underpinned all project activities. At the international level, the project closely coordinated and directly collaborated with AU-PATTEC, WHO, IAEA, and a number of research institutes involved in tsetse and trypanosomosis control and elimination. The partnerships were facilitated by the PAAT framework, enabling cost sharing; promoting technical synergies, and coherence and harmonization of efforts; ensuring political backing; and avoiding redundancies.

Innovative, user-friendly and affordable technologies

Innovative, user-friendly and affordable technologies were readily taken up by beneficiaries and partners, including freeware and open source software for decision-making; and LPF technology for field interventions aimed at poverty reduction and increased food security.

Dissemination of project results

The extensive dissemination of project results was provided through open-access scientific publications, presentations in conferences, and participation in technical meetings, ensuring capillary dissemination and unrestricted access to the innovative project achievements (multiplier effect). Further information is provided in the peer-reviewed scientific publications (see Appendix 2).

LESSONS LEARNED – impediments/constraints

Please indicate any impediments or constraints, the measures adopted to address them and how to increase their effectiveness.

A delay in the recruitment of the project officer held up the implementation of the project during the first seven months, the effects of which were only partially mitigated by the hiring of an international consultant for two and a half months. Given the coordinating and implementing role of the project officer, the effectiveness and timeliness of project execution would have benefited from a faster turnaround time in recruitment. If a second phase of the project is implemented, it is recommended that the position of project officer be carefully covered, to ensure continuity in project coordination and implementation.

G. FOLLOW-UP ACTIONS

Briefly describe the remaining constraints to be addressed and the required follow-up actions to solve the problem the project was to address in a sustainable way. Indicate any additional resources that may be required.

Follow-up actions are expected to be funded by the Government of Italy through the implementation of a second phase of the project (tentative estimated budget USD 1 million). This phase should focus on: (i) consolidating and upscaling the achievements of the first phase, especially by building on already strengthened capacities; and (ii) scaling out the achievements and experiences gained, by disseminating the innovative methodologies to a larger number of trypanosomosis-affected countries and stakeholders.

In particular, the strengthened capacities that are now available in the assisted countries will be used to develop evidence-based, cost-effective plans for field interventions against trypanosomosis. To achieve this goal, advanced FAO technical assistance is requested by a number of beneficiaries, which recognize the benefits of the innovative tools promoted by the project (e.g. freeware and open source GIS software, Leica Photogrammetry Suite [LPS], etc.). The piloting of innovative integrated animal health packages (e.g. LPF) will be extended to a larger number of countries (i.e. Burkina Faso and Kenya, which are priority countries for the Italian Development Cooperation, as is Ethiopia). The continental Atlas of tsetse and animal trypanosomosis will be completed, and the increasing requests from countries to assist the development of national atlases will be met. Through the project, FAO support to WHO, and to countries affected by human African trypanosomosis (HAT, or sleeping sickness) will be strengthened.

Cost-sharing, aimed at widening the scope of the activities and encouraging ownership of beneficiaries and partners, will be actively pursued also in the second phase of the project, and will provide additional resources. All project activities will continue to be implemented in close collaboration with FAO partners (AU-PATTEC, WHO, IAEA, International Research Institutes [see table below]).

Table: Follow-up actions

| What concrete follow-up actions, if any, are foreseen/taking place and by whom? Please indicate in order of priority | | |
|---|--|---|
| Responsibility (name, institution) | Additional resources required, if any | Status and contribution to sustainability of project results |
| FAO, in close collaboration with partner institutions (WHO, IAEA, AU-PATTEC) | | By building on the capacities strengthened during the first phase of the project, in the planned second phase more advanced training will be provided to trypanosomosis-affected countries, for improved and more effective decision-making in field interventions. |
| | FAO | Innovative integrated animal health packages (e.g. LPF), which were piloted in Ethiopia during the first phase of the project, will be extended to other regions of Ethiopia and to a larger number of countries (i.e. Burkina Faso and Kenya, which are priority countries for the Italian Development Cooperation as is Ethiopia). |
| FAO, in close collaboration with partner institutions (WHO, IAEA) | | The Atlas of tsetse and animal trypanosomosis (completed for Ethiopia, Kenya and Uganda during the first phase of the project) will be completed at the continental level, and the increasing requests from countries to assist the development of national atlases will be met. Through the project, FAO support to WHO and to countries affected by human African trypanosomosis (HAT or sleeping sickness) will be strengthened. |
| | FAO | Technical assistance to trypanosomosis-affected countries and other stakeholders for the development of plans/project proposals for field interventions will be provided, aiming at the development of plans/project proposals for field interventions. |

More information can be found at the links below:

- Press release on FAO website:
<http://www.fao.org/in-action/improving-food-security-in-sub-saharan-africa-by-supporting-the-progressive-reduction-of-tsetse-transmitted-trypanosomosis/en/>
- Photo Album on Flickr:
<https://www.flickr.com/photos/faooftheun/sets/72157646463128027/>
- Project scientific publications (Google Scholar):
- https://scholar.google.com/scholar?hl=en&q=GTFS%2FRAF%2F474%2FITA&btnG=&as_sdt=1%2C5&as_sdtp

H. GOVERNMENT ATTENTION

Specific Findings and Recommendations for Government Attention. *Care should be taken to make constructive findings and recommendations rather than to issue criticism.*

The control and elimination of the trypanosomosis problem continues to be a challenge for all beneficiary countries. In particular, it is urged that evidence-based decision-making be further strengthened, with a view to: (i) underpinning the mobilization of national resources; (ii) galvanizing donors' support; and (iii) implementing pro-poor, cost-effective field interventions against tsetse and trypanosomosis. The goal of intervention should remain to improve food security, and contribute to sustainable rural development.










It is advised that technical and financial partners assist the beneficiary countries in developing information systems (e.g. atlases of tsetse and African animal trypanosomosis [AAT]), to assess the risk of tsetse and trypanosomosis, and inform the planning, implementation, monitoring and evaluation of field actions. It is also recommended that environmentally friendly, locally adapted technologies, aimed at controlling and eliminating the constraints posed by African trypanosomoses, be promoted in these countries.

Appendix 1

LOGFRAME MATRIX - ACHIEVEMENT OF INDICATORS

| Results chain | Indicators | | | | If not achieved, explain why | If applicable/ follow-up action to be taken |
|---------------------|---|----------|---|----------|------------------------------|---|
| | Indicators | Baseline | End target (<i>expected value at project completion</i>) | Achieved | | |
| Impact ¹ | To contribute to improving food security and alleviating poverty in rural areas of sub-Saharan Africa affected by tsetse-transmitted trypanosomosis; as well as to SOS2 and RI2 | | | | | |
| Project Outcome | Enabling affected countries and stakeholder to better address the problem of tsetse-transmitted trypanosomosis | | | 2 | Yes | |
| Output (1) | Coordination meetings organized | | | 2 | Yes | |
| | Coordination meetings attended | | | 8 | Yes | |
| | Technical assistance missions conducted | | | 12 | Yes | |
| Output (2) | Countries technically guided | | | 16 | Yes | |
| Output (3) | National training courses conducted | | | 11 | Yes | |
| | Regional training courses conducted | | | 3 | Yes | |
| | Other training courses supported | | | 5 | Yes | |
| | Training material produced (DVDs) | | | 10 | Yes | |

¹ The impact level should always reflect the higher programmatic outcome to which the project contributes. For example, at the country level, this is expressed as the CPF outcome to which the project contributes and can also reflect other elements of impact that are defined at a higher programmatic level (UNDAF/national goal/FAO Strategic Framework).

| Results chain | Indicators | | | | If not achieved, explain why | If applicable/ follow-up action to be taken |
|---------------|---|---|---|----------|------------------------------|---|
| | Indicators | Baseline | End target (<i>expected value at project completion</i>) | Achieved | | |
| | Training manuals produced | | | 1 | Yes | |
| Output (4) | Continental Atlas of tsetse and AAT methodologies developed | | | 2 | Yes | |
| | Continental Atlas of tsetse and AAT countries mapped | | | 3 | Yes | |
| | National Atlases of tsetse and AAT - countries supported |  |  | 4 | Yes |  |
| | Continental Atlas of HAT - datasets/year included | | | 3 | Yes | |
| | Continental Atlas of HAT - analytical studies published | | | 3 | Yes | |
| Output (5) | Farmers/households assisted with innovative technologies |  |  | 90 | Yes |  |
| Output (6) | Technical backstopping missions conducted |  |  | 12 | Yes |  |

Appendix 2

DOCUMENTS PRODUCED DURING THE PROJECT

Peer-reviewed scientific publications

Treating cattle to protect people? Impact of footbath insecticide treatment on tsetse density in Chad. N. Ndeledje *et al.* PLoS One, 2013, 8(6): e67580.

Genetic comparison of *Glossina tachinoides* populations in three river basins of the Upper West Region of Ghana and implications for tsetse control. Y. Adam *et al.* Infection, Genetics and Evolution: Journal of Molecular Epidemiology and Evolutionary Genetics in Infectious Diseases. 28: p. 588-95.

Assembling a geospatial database of tsetse-transmitted animal trypanosomosis for Africa. G. Cecchi *et al.* Parasites and Vectors (Parasit Vectors). 2014;7, article 39.

Population studies of *Glossina pallidipes* in Ethiopia: emphasis on cuticular hydrocarbons and wing morphometric analysis. M.N. Getahun *et al.* Acta Trop 2014, 138. Suppl: p. S12-21.

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