



IC PROJECT REPORTING TEMPLATE AS PART OF THE STRATEGY AND PROCESS ON HOW THE IC REVIEWS AND ANALYSES ICD PROJECTS

Project Title: F³: Fruit Fly Free. Establishment and Maintenance of fruit production areas free and under low prevalence of fruit fly pests in Southern Africa

Reporter (name, position): Tertia Grové (Senior Researcher) Agricultural Research Council- Tropical and Subtropical Crops)

Project Code (if applicable): STDF/PG/567

1. Project Profile	
Recipient Region(s)/ Countries	South Africa Mozambique
Donor/ Resource Partner	Standards and Trade Development Facility
Collaboration / Participating Organizations	<p>Agricultural Research Council (South Africa) Contact: Dr Tertia Grové Email: tertia@arc.agric.za</p> <p>Department of Agriculture, Land Reform and Rural Development (South Africa) Contact: Mr Jan-Hendrik Venter Email: JanHendrikV@Dalrrd.gov.za</p> <p>Citrus Research International (South Africa) Contact: Aruna Manrakhan. E-mail: aruna@cri.co.za;</p> <p>Stellenbosch University, Department of Conservation Ecology and Entomology, Faculty of AgriSciences, (South Africa) Contact: Prof Pia Addison. E-mail: pia@sun.ac.za</p> <p>Eduardo Mondlane University, Faculty of Agronomy and Forest Engineering (Mozambique) Contact: Prof Domingos R. Cugala. Email: dcugala@uem.mz Contact: Dr Laura Canhanga Contact: lauraajose@gmail.com</p> <p>Ministry of Agriculture and Food Security, National Directorate of Agriculture and Silviculture, Department of Plant Protection (Mozambique) Contact: Mrs Antonia Vaz. Email: avaz5099@gmail.com</p> <p>Royal Museum for Central Africa, Department of Biology (Belgium) Contact: Marc De Meyer. Email: demeyer@africamuseum.be</p> <p>Deciduous Fruit Producers' Trust FruitFly Africa (South Africa) Contact: Mr Ghian Du Toit Email: ghian@fruitfly.co.za</p>

Project Budget (detailed funds and/or in-kind)	Total Project Budget: US Dollar 2 925 941 STDF Contribution: US Dollar 721 584 In-kind Contribution: US Dollar 1 031 551 Financial Contribution: US Dollar 1 172 806
Project Timing	From: 1 September 2020 To: 31 August 2023
2. Summary of Project (Scope, Relevance to the IPPC, Main outputs, Success and challenges)	
<p>The Standards and Trade Development Facility (STDF) supports developing countries in building capacity to implement international sanitary and phytosanitary (SPS) standards. This project aims specifically at developing a regionally harmonised framework for development, implementation and recognition of Pest Free Areas (PFAs) and Areas of Low Pest Prevalence (ALPPs) for regulated fruit fly pests of commercial fruit in southern Africa (South Africa and Mozambique) following the directives of the relevant International Standards for Phytosanitary Measures (ISPMs), as approved by the International Plant Protection Convention (IPPC).</p> <p>The establishment and maintenance of PFAs and ALPPs are done according to ISPM 26, Establishment of pest free areas for fruit flies (Tephritidae), ISPM 35, Systems approach for pest risk management of fruit flies (Tephritidae), Annexe 1, Establishment of areas of low pest prevalence for fruit flies, ISPM 29, Recognition of pest free areas and areas of low pest prevalence, and ISPM 37, Determination of host status of fruit to fruit flies (Tephritidae). Other general standards would also be followed such as, ISPM 4, Requirements for the establishment of Pest Free Areas, ISPM 6, Surveillance, ISPM 8, Pest status, and ISPM 9, Eradication. As such, the project addresses good practices in SPS, by safeguarding and improving at a regional scale, the production of a number of horticultural commodities. The targeted fruit fly species are: the Oriental fruit fly, <i>Bactrocera dorsalis</i> (Hendel); the melon fly, <i>Zeugodacus cucurbitae</i> (Coquillett); and the Mediterranean fruit fly, <i>Ceratitidis capitata</i> (Wiedemann).</p> <p>The expected outputs for the targeted fruit fly pests in this project are:</p> <ul style="list-style-type: none"> • Established Pest Free Areas (PFAs) in South Africa and Mozambique. • Scientifically based evidence for specified low prevalence levels. • Established Areas of Low Pest Prevalence (ALPPs) in South Africa and Mozambique. • Operational database platform for determination of PFAs and ALPPs in different regions in South Africa and Mozambique. • Identification protocol and service for rapid and unambiguous identification. • Financial model for maintenance of PFAs and ALPPs. <p>Challenges</p> <p>Delays in the signing of the contract between the Agricultural Research Council and the Department, Department of Agriculture, Land Reform and Rural Development (DALRRD).</p> <p>Delays in surveys in South Africa as a result of COVID-19 as well as procurement delays of Cuelure for melon fly. Since melon fly is not known to occur in South Africa it is not registered to be used and must be imported under a special permit by suppliers.</p> <p>In Mozambique, there is no availability of lures and other Integrated Pest Management (IPM) tools. Product registration issues in South Africa, also affects its availability in Mozambique since the local agro-dealers usually go to South Africa. IPM intervention and inaccessibility of inputs (lures, baits, mass trapping tools) issues may affect IPM implementation.</p> <p>To relate fruit fly catches and rejections at packhouses historic information was required. Analysis of historical information was challenging due to limited data sets obtained from producers, fruit fly monitoring services and inspection services.</p> <p>All preservation and identification protocols and tools were developed, bar the larval multi-entry identification key which is partially delayed because of COVID related restrictions.</p> <p>Successes</p> <p>In spite of delays the Oriental fruit fly and Mediterranean fruit fly surveys, surveys continued in all the areas with good results emanating. The DALRRD procured 3000 units for Cuelure and has sufficient stock of methyl eugenol. FruitFly Africa has sufficient stock for all the surveys conducted in their areas.</p> <p>In Mozambique, Cuelure baited traps were serviced on a monthly basis in the proposed PFAs for melon fly (Maputo, Gaza and Inhambane) as well as in the buffer zone (Manica and Sofala). So far, the southern part of Mozambique (Maputo, Gaza and Inhambane) had no catches of melon fly.</p>	

Historical information on trap catches of Mediterranean fruit fly and Oriental fruit fly and rejections due to fruit fly infestation at packhouses in all target crops, except pome fruit, were obtained and analysed.

An electronic multi-entry identification tool for the 29 taxa of agricultural importance (Africa) was converted into a mobile application by LUCID company (Australia) and is downloadable for free.

3. Project Supporting Materials [e.g. hyperlinks]

F³: FRUIT FLY FREE Website:

<https://www.arc.agric.za/arc-itsc/Fruit%20Fly%20Free/Pages/default.aspx>

4. List project technical resources (i.e. guides, training materials, tools) that could be useful and used by other stakeholders

Protocol for preservation of species (F³: FRUIT FLY FREE Website).

Protocol and decision tree for identification of collected fruit flies (F³: FRUIT FLY FREE Website).

Bactrocera dorsalis action plan (See attached).

The completed and tested reduced electronic multi-entry identification tool for the 29 taxa of agricultural importance (Africa) was converted into a mobile application by LUCID company (Australia) and is downloadable for free both for android and apple in the respective stores:

https://play.google.com/store/apps/details?id=com.lucidcentral.mobile.fruit_flies_africa

<https://apps.apple.com/app/key-selected-fruitflies-africa/id1600205756>

These also include 29 factsheets with relevant information sources.

5. Provide a list of project experts that could be recommended to other stakeholders and describe why

Prof Pia Addison - Integrated Pest Management Deciduous fruit.

Dr Marc De Meyer - Taxonomy authority on tephritid fruit flies.

Mr Jan-Hendrik Venter - Pest detection and response

Dr Aruna Manrakhan- Biology, behavior, ecology, monitoring and control of fruit fly pests of citrus

Prof Domingos Cugala - Integrated Pest Management.

6. List targeted beneficiaries [i.e. regions, countries, RPPOs, NPPOs and other institutions]

The fruit industries in South Africa and Mozambique (Southern Africa) will benefit from this project as this would create opportunities for retention of existing markets for exported fruit and exploration of new markets. The first direct beneficiaries would be fruit producers (small scale and large scale). This project will be an important economic driver in the countries concerned, resulting in income for the farmers, revenue for the government, job creation and opportunities for further development of the sector. National Plant Protection Organisations (NPPOs) from South Africa and Mozambique as well as public and private research institutions are participating in the project. The project will create a framework for the development of fruit fly free areas and areas of low fruit fly prevalence which could be adopted in other African regions.