Workshop Report

Development of a strategy to address the threat of Foc TR4 in Africa

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Stellenbosch, South Africa

COMESA

EAC JUMUIYA YA AFRIKA MASHARIKI

SADC SOUTHERN AFRICAN DEVELOPMENT COMMUNITY TOWARDS A COMMON FUTURE

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Development of a strategy to address the threat of Foc TR4 in Africa

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Foreword

While Africa continues to roll in positive optimism following over a decade of economic stability, consensus remains that without the ability to adequately and sustainably feed its people and realise its massive agricultural potential, the much hyped “Africa on the Rising” mantra will remain but empty words that mean nothing to the majority of those affected by hunger. More than half of Africa’s population depends on agriculture for almost their entire livelihood. According to the African Union (AU), feeding 1.5 billion people by 2030 in Africa, is a daunting challenge for the continent to meet.

Agriculture plays a major role towards fulfilling the mission of the Southern African Development Community (SADC), which is “to promote sustainable and equitable economic growth and socio-economic development through efficient productive systems, deeper co-operation and integration, good governance, and durable peace and security, so that the region emerges as a competitive and effective player in international relations and the world economy“. The performance of the agricultural sector has a strong influence on food security, economic growth and social stability in the SADC region. Despite its importance in the economy of SADC, growth rates of agriculture have been highly variable across the region averaging 2.6% per annum in the last decade. Average agricultural growth rates have been similar to the human population growth rates of 2.4% over this period. Member States under SADC have committed themselves to the Regional Indicative Strategic Development Plan (RISDP) whose ultimate objective is “to deepen the regional integration agenda of SADC with the view of accelerating poverty eradication and attainment of other economic and non-economic development goals through efficient production systems”. Although much has been achieved since the declaration to establish SADC in 1992, some challenges still exist and need to be addressed. The tightening and proliferation of phytosanitary measures are amongst the challenges faced in trade of food and agro-products due to the risk of introduction and spread of plant pests of quarantine importance.

SADC Ministers of Trade and Industry in July 2008 adopted the Sanitary and Phytosanitary (SPS) Annex to the SADC Protocol on Trade. The SPS Annex constitutes the framework for SPS cooperation in SADC against the background of each Member State’s obligations with respect to the World Trade Organisation’s (WTO) Agreement on Application of SPS measures, World Organisation for Animal Health (OIE), Codex Alimentarius Commission (CAC) and the International Plant Protection Convention (IPPC). The main objectives of the SPS Annex are to:

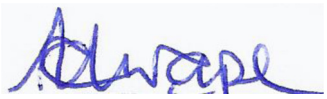
a. Facilitate the protection of human, animal and plant life or health in the territory of Member States;
b. Enhance the Member States' implementation of the WTO Agreement on the application of Sanitary and Phytosanitary measures;
c. Enhance technical capacity to implement and monitor SPS measures including promoting greater use of international standards and other matters concerning SPS;
d. Provide a forum for resolving trade-related SPS issues.

SADC has become more involved in the regional SPS policy through the establishment of the SADC SPS Coordinating Committee working in collaboration with the Technical Committees for Livestock, Food safety and Plant Protection, as provided for by the SPS Annex.

In line with the Transparency provisions of the SPS Annex and the IPPC, the National Plant Protection Organisation (NPPO) of Mozambique timely reported on the IPPC portal the detection of *Fusarium oxysporum* f. sp. *cubense* tropical race 4 (Foc TR4), a pathogen of quarantine importance threatening the banana industry in Africa. This was commendable as it has enabled SADC to cooperate and collaborate with its sister Regional Economic Communities (RECs), Regional and International Cooperating partners in containing and managing the incursion of Foc TR4 in the northern region of Mozambique.

The purpose of this meeting was to develop a strategy to address the threat of Foc TR4 in order to enhance food security and safe trade in bananas and banana products in Africa. This event has been made possible with support from the Bill and Melinda Gates Foundation (BMGF), CGIAR Research Program on Roots, Tubers and Bananas, Food and Agriculture Organisation (FAO), International Institute for Tropical Agriculture (IITA), United States Agency for International Development (USAID) and Stellenbosch University (SUN).

We appreciate the effective interactions, fruitful discussions and clarifications of future priorities for the management of Foc TR4 in Africa.



Chiluba Mwape

Programme Officer, Sanitary and Phytosanitary,
Directorate - Trade and Industry, Finance and Investment
SADC Secretariat, Private Bag 0095, Gaborone, BOTSWANA

Executive Summary

The introduction of an Asian strain of a banana Fusarium wilt fungus into Mozambique in 2013 led to the organisation of a strategy meeting to deal with the incursion on the continent. The fungus, called *Fusarium oxysporum* f. sp. *cubense* tropical race 4 (Foc TR4), is best known for the immense damage it has caused to Cavendish plantations, but it also attacked local varieties grown by small-scale farmers throughout Asia. The workshop held in Stellenbosch form 23-24 April 2014 was attended by representatives of the African Consortium for Foc TR4 (AC4TR4), comprising the National Plant Protection Organisations, National Agricultural Research Centres, universities, CGIAR centres, the FAO and networks in Africa. The programme consisted of two major components: A series of seminars to provide background information to participants, and a strategy development component to address the threat of Foc TR4 to bananas on the African continent. The seminar series was divided into three sessions: (i) Global perspectives on banana production and Fusarium wilt, (ii) The presence of Foc TR4 in Mozambique, and (iii) Trans-boundary plant pest management in Africa. During the seminars, the potential threat of Foc TR4 to African cooking bananas was considered, and methods to deal with the fungus on the affected farm, in the region and continent, discussed. The delegates were thereafter divided into four groups to deliberate four topics related to the potential threat of Foc TR4 to African bananas: Biosecurity/Disease Management, Public Awareness/Extension, Policy, and Private Public Partnerships. Research priorities and responsibilities were discussed, and research and capacity gaps identified. An African Foc TR4 task group was selected to lead and coordinate activities of AC4TR4 on the continent, which will include containment, awareness and training, and research and development actions. This group will also be responsible for joint fundraising efforts and the establishment of a web portal to communicate activities and share information.

Abbreviations and acronyms

ACIAR:	Australian Centre for International Agricultural Research
AC4TR4:	African Consortium for Foc TR4
ASARECA:	Association for Strengthening Agricultural Research in Eastern and Central Africa
AU:	African Union
BAPNET:	The Banana Asia Pacific Network
BARNESA:	Banana Research Network for Eastern and Southern Africa
BMGF:	Bill and Melinda Gates Foundation
CAC:	Codex Alimentarius Commission
CCARDESA:	Centre for Coordination of Agricultural Research and Development in Southern Africa
CGIAR:	Consultative Group of International Agricultural Research
COMESA:	Common Market for Eastern and Southern Africa
COPE:	Centre of Phytosanitary Excellence
DRC:	Democratic Republic of Congo
EAC:	East African Community
EAHB:	East African Highland banana
FAO:	Food and Agriculture Organisation of the United Nations
Foc TR4:	*Fusarium oxysporum* f. sp. *cubense* tropical race 4
ICP:	International Collaborating Partners
IITA:	International Institute for Tropical Agriculture
IPPC:	International Plant Protection Convention
KEPHIS:	Kenya Plant Health Inspectorate Services
KUL:	Katholieke Universiteit Leuven
NARO:	National Agricultural Research Organisation
NARS:	National Agricultural Research System
NPPO:	National Plant Protection Organisation
OIE:	World Organisation for Animal Health
PRA:	Pest Risk Analysis
QBAN:	Quality Banana Assurance Nurseries
RCoE:	Regional Center of Excellence
RECs:	Regional Economic Communities
RISDP:	Regional Indicative Strategic Development Plan
RSA:	Republic of South Africa
RTB:	CGIAR's Research Program on Roots, Tubers and Bananas
SADC:	Southern African Development Community
SPS:	Sanitary and Phytosanitary
SUN:	Stellenbosch University
USAID:	United States Agency for International Development
WTO:	World Trade Organisation

Introduction and Background

Fusarium oxysporum f. sp. *cubense* tropical race 4 (Foc TR4), a highly pathogenic form of the banana Fusarium wilt fungus previously confined to Asia, was discovered in northern Mozambique in 2013. The fungus gained its infamy because of the considerable damage it has caused to Cavendish bananas and certain locally grown varieties in all the Asian countries where it has been found. In order to manage the disease outbreak in northern Mozambique, and to prepare African countries reliant on banana for food security and income generation, it became necessary to implement a series of informed interventions. The first priority is to contain the outbreak in northern Mozambique and to prevent the spread of Foc TR4 across the region and to neighbouring countries. The second phase of activities will be to prepare other countries dependent on banana against future incursions of this disease through enhanced plant biosecurity frameworks and research capacity. Finally, different types of banana germplasm, reflecting the diversity cultivated in Africa, require screening for resistance to Foc TR4. Appropriate adoption and delivery pathways then have to be developed to provide resistant planting materials to hundreds of millions of Africans who depend on the crop for household food security and income generation.

A workshop of the African Consortium for Foc TR4 (AC4TR4) was held in Stellenbosch from 23 to 24 April 2014 to discuss these issues. The workshop was convened by the Southern African Development Community (SADC) in partnership with the University of Stellenbosch (SUN), the International Institute for Tropical Agriculture (IITA), Bioversity International, the Common Market for Eastern and Southern Africa (COMESA), Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and Coordination of Agricultural Research and Development in Southern Africa (CCARDESA). It was funded by the Food and Agriculture Organisation (FAO), United States Agency for International Development (USAID), Bill and Melinda Gates Foundation (BMGF), the CGIAR's Research Program on Roots, Tubers and Bananas (RTB) programme, SUN and IITA. The purpose of the workshop was to develop a strategy to address the threat of Foc TR4 in order to enhance food security and safe trade in bananas and banana products in Africa. The specific objectives were to:

- Develop a strategy to address the threat of Foc TR4 with clear institutional roles and responsibilities
- Prioritise activities and planning of immediate actions
- Identify mechanisms to engage donors and policy makers in order to increase public awareness and mobilisation of resources for the short and long-term.

Workshop Format, Content and Process

The workshop methodology was participatory; thereby enabling all stakeholders to interact and contribute freely to the deliberations. The format ensured an easy flow of information from plenary presentations to structured facilitated discussions that enabled participants to critically explore the issues and offer conclusions for the way forward. This process was facilitated by professionals from PICO Team.

The workshop recognised the different interests of AC4TR4, such as trade, food security, research, biosafety frameworks, capacity building and coordination, and tried to adequately represent them in the programme and the content of the workshop through a process steering group. The process steering group consisted of a cross-section of stakeholders who represented the whole group, and was tasked to monitor the course of the workshop, to summarise participant's impressions and address their concerns, and to review the workshop proceedings at the end of each day. This process-oriented procedure allowed participants to play an active role, and to take responsibility for the success of the workshop and ownership of the outcomes.

The workshop was structured along distinct process steps that built upon each other. These steps were:

Step 1: 'Setting the Scene': Opening, participant introductions, clarifying the objectives and explaining the workshop programme. Ground rules to guide the process were agreed to. Additionally, core values were set out for participants to get the maximum benefit from the workshop.

Step 2: Presentations were made and discussions followed on:

- Global perspectives on banana production and Fusarium wilt (Foc)
- Foc TR4 in Mozambique
- Trans-boundary plant pest management in Africa

Step 3: Group work to develop a strategy to address the threat of Foc TR4 in Africa

Step 4: Concluding plenary discussion on the way forward and mechanisms for the implementation of the strategy to address the threat of Foc TR4 in Africa, including identification of funding opportunities.

Presentations and discussions

Eleven presentations were made on banana production, Foc TR4 management in Africa and Asia and trans-boundary pest management (see detailed workshop programme in Annex 1). Each presentation was followed by a facilitated discussion to identify key issues.

Global perspectives on banana production and Fusarium wilt (Foc)

Two keynote papers were presented in this session. The first paper highlighted the importance and challenges of banana production in Africa. It noted that banana is an important agricultural crop in many countries; particularly in central and eastern Africa where it is primarily grown by smallholder farmers. The main types of banana produced in Africa are East African Highland bananas (EAHB) (49%), plantains including other cooking banana such as Pisang Awak and Bluggoe (30%), dessert bananas including Cavendish (17%), and Gros Michel and Apple (4%) bananas. Key production constraints include climate change (high temperatures and rainfall variability); social structure changes (due to HIV/AIDS, rural urban migration and reduced returns to agriculture), as well as biotic stresses that include a wide range of pests and diseases which are moved in planting material in the informal seed systems (BBTV, BSV, BBrMV, CMV, BMMV, weevils, nematodes, Foc, BXW). Other constraints include socio-economic problems, restricted market access, labour shortage, non-conducive policies and abiotic stresses such as low soil fertility. Institutional capacities to support the banana sector are generally weak with limited capacities to detect pests and manage diseases. Weak and/or non-existent quarantine services linked to lack of surveillance and limited information exchange within and between countries and regions, was highlighted as another problem. All conventional and non-conventional pest and disease management strategies (host plant resistance by conventional crosses, genetic engineering, cultural controls linked to clean seed systems, biological control and integrated pest and disease management) have been tried with varying success. Trends in production over the years indicate an increase in land area until 2011.

The second paper focused on a global perspective on Fusarium wilt of banana. It described the consultations that followed the confirmation of the presence of FocTR4 in Mozambique at Matanuska farm. The importance and challenges of managing the media were alluded to, and concerns were expressed that alarming reports were originating from outside of Africa and that these statements were generally inaccurate. The openness of Matanuska and readiness to invest in on-farm containment was commended. The paper further presented the history of Panama disease epidemics in Central America and Asia. It referred to the

presence of Foc races other than Foc TR4 in Africa, and stated that FocTR4 poses a greater threat due to its wider host range. The fungus is soil-borne and can survive for 40-60 years. This makes it impossible to control with fungicides. The Foc TR4 epidemic is primarily associated with large scale monoculture of banana, the expansion of international trade due to movement of people and contaminated soil and planting material, and the domination of trade by Cavendish. It was suggested that management of the pathogen requires preventative measures, early detection and isolation, the management or abandonment of infested areas, and through the use of disease-resistant varieties.

During discussion time, a question was raised whether statistics for international banana production include smallholder farms. It was noted that the FAO statistics indeed included smallholder banana production data in eastern Africa. Whether such data is accurate, however, is debatable. A second question was about the current status and spread of Fusarium wilt in northern Mozambique. It was mentioned that Matanuska has made a massive investment to contain the disease on-farm. The third question was whether Foc race 1 had been eradicated in Africa. It was mentioned that this race has not been eradicated, but that the majority of banana varieties grown in Africa are resistant to Foc race 1, and hence it is not considered a major constraint. It was further mentioned that it is possible to find several forms of the fungus (different races and VCGs) associated with the same banana variety. Regarding the capability of molecular markers to detect Foc in bananas, it was mentioned that this was only possible with Foc race 4. Finally, it was indicated that as yet there is no published evidence that banana fruits can spread the fungus and that trade of the fruit should therefore not be affected or prevented.

Introduction of Foc TR4 in Mozambique

Four papers were presented in this session. The first paper focussed on efforts of dealing with Foc TR4 in Asia. It indicated that Panama disease has been affecting Cavendish bananas in Asia since 1967, and remains a problem in that region. Considerable progress has been made in managing the disease through regional networks such as the ACIAR/BAPNET partnership. Foc TR4 is primarily a Cavendish monoculture problem and the damage it causes is less severe in integrated cropping systems. Fusarium produces more inoculum on dead tissue, making early detection and destruction of infected plants an important component for managing the disease. Breeding Fusarium wilt-resistant bananas acceptable to consumers, and genetic modification, has not been successful so far, whereas Cavendish somaclonal variants are now widely planted throughout Asia. Other important lessons learnt from the Asian experience are the value of public awareness and capacity

building in averting spread of FocTR4, and that FocTR4 outbreaks are better dealt with by big commercial companies. Smallholder farmers choose to rather abandon their banana fields following severe infestation. These farmers, however, are now rehabilitating their farms using resistant Cavendish somaclones, with fruit now being accepted in the export market.

The second paper in the session focused on the value of plant resistance to control Foc TR4. It cautioned participants to be careful with what they read in the media and even in scientific publications, because mistakes have been made with the classification of bananas and plantains. The presenter mentioned that the case of FocTR4 in Africa is being over dramatised as many smallholder growers do not cultivate Cavendish bananas, but rather grow a lot of East African Highland bananas (EAHB, AAA subgroup) and plantains (AAB subgroup). The evaluation of a small selection of EAHB and plantains against FocTR4 in The Philippines revealed that the tested varieties are resistant. It is postulated that EAHB and plantains may be resistant to FocTR4 because EAHB are genetically uniform and the same applies for the plantains. Tested plantain hybrids (i.e. tetraploids) have been found susceptible to Foc TR4, but inferring that plantain triploids are also susceptible is not correct. Therefore, banana breeding programmes of plantain and EAHB need to engage in further testing of hybrids and potential parents against Foc TR4.

The third paper shared the experiences of Matanuska dealing with Foc TR4 at Metocheria farms in Mozambique. Fusarium wilt symptoms were first detected in February 2013, and the company has since taken proactive steps to prevent FocTR4 from spreading. Fifty four hectares of banana have been destroyed and the land abandoned. The weekly incidence on the six farms was shared with the audience, including the recent surge in the number of new cases. It was concluded that there is need for continued awareness campaign and training and reinforcement of disinfection equipment.

The final paper in the session was made by the Mozambique National Plant Protection Organisation (NPPO). It discussed the introduction and containment of Foc TR4 into the country. After its identification, the NPPO issued an alert to the International Plant Protection Convention (IPPC) portal. The Ministry of Agriculture, with support from national and international partners, have been assisting the company in the implementation of containment measures. The NPPO has since submitted a project proposal to the FAO for technical assistance on the containment and management of the disease.

Discussions during the plenary sessions after the presentations focused on lessons learnt in Asia and how these could be applied in Africa. It was mentioned that multinational

companies are generally secretive and in denial which perpetuates the spread of the disease until it becomes a crisis. The absence of FocTR4 in countries bordering Malaysia, China and The Philippines, such as Vietnam, Cambodia and Thailand, could be explained by the absence of large Cavendish monoculture production and the diversity of banana varieties grown by small-scale farmers. The possibility of Asian somaclonal selections being resistant to FocTR4 in Africa was considered, as the FocTR4 strains in Asia are exactly the same as those found in Africa. It was emphasised that it is important to differentiate between traditional EAHB and plantain, and their hybrids, when resistance to Foc TR4 is considered. The Mozambique banana variety commonly found in the local communities appears to be cooking type and so far none has been found with Fusarium wilt symptoms.

Questions were raised on the source of Foc TR4 on the farm. This information is not known, but it is expected that the fungus was brought into Mozambique from Asia. It was indicated that proper protocols are being followed to prevent the introduction of foreign pathogens into the country, and therefore it is unlikely that it was brought in through planting materials. A further suggestion was that the fungus could have been present in the soil at a low level for many years, but that it was not detected because of the absence of a susceptible host. It was indicated that the presence of the disease on the farm can be correlated with the movement of people. If abandoned land is therefore not fenced in, the disease will continue to spread with people passing through infested areas. A question was raised whether abandonment and fencing-in of the affected land is practical considering the size of the land involved, to which Matanuska indicated that such actions require significant financial investments. It was mentioned that by the time the disease symptoms were observed, the fungus could have been in the soil for a while. It is, therefore, important to monitor and control the movement of people onto and off banana fields. It was emphasised that the introduction of Foc TR4 into the African continent should be urgently addressed before it becomes a crisis, as was the case with BXW and BBTV. A regionally awareness campaign to recognise and report the symptoms is crucial at this time.

Trans-boundary plant pest management in Africa

The first paper in the session focused on African agricultural systems and challenges with trans-boundary pests. It referred to the need for a strong “crop health care system”; characterised by effective mechanisms for risk assessment, disease surveillance, disease diagnosis, control recommendations, farmer adoption and advocacy to create enabling policy environments. Where there are gaps in knowledge, targeted research interventions can be implemented to generate new knowledge. Each component of the system is inter-connected and needs to be refined based on active learning and as a result of capacity

building initiatives. As farmers require a broad understanding of biotic and abiotic constraints, complete packages of information need to be collated and transferred as opposed to single messages on individual pests, diseases or nutrients. The presentation alluded to the importance of learning from what has already happened in Mozambique, and to take the current opportunity to avert an emergency situation both within Mozambique and other countries where bananas are cultivated for food and to generate incomes. In the short-term it was recommended that the first course of action was to increase vigilance to rapidly spot and report potential introductions or outbreaks of Foc TR4. It was further recognised that Foc TR4 may go unnoticed on types of banana susceptible to Foc race 1, such as Gros Michel or Kayinja or apple bananas. It is very important that old footwear be used that can be left behind when visiting a site suspected of being infected with Foc TR4 to avoid transfer of potentially contaminated soil. Once the presence of Foc TR4 has been confirmed, then it was proposed that the abandonment of fields should be considered as a management option, even for smallholders, to prevent further spread of the disease. Such actions, however, should be combined with community based compensation measures on the provision that it is a common good to prevent more wide-scale establishment or spread of Foc TR4. Community support systems would need to be coordinated by national task forces and be in place before the disease is introduced in order to permit a rapid response and to cushion effects of abandonment of production by smallholders. The presentation concluded that the strategy that was required to address the threat of Foc TR4 needed to strengthen each component of the crop health care system and that this could be achieved by increasing national and regional capacity and connectivity, particularly in the areas of Biosafety, Policy, Extension and Research.

The second paper in the session dealt with invasive pests internationally. It explained the work of the FAO in managing plant pests by means of the International Plant Protection Convention and the EMPRES programmes. The importance of NPPOs meeting the IPPC obligations was alluded to in recognising the credible decision by the Mozambique NPPO to report the Foc TR4 disease in good time. The presentation gave examples of global as well as regional programmes and projects dealing with pest management and also addressed some of the major challenges in providing technical support as well as recommendations on addressing key constraints.

The paper on plant quarantine and eradication of banana pathogens and pests in Australia provided a very good example of innovative ways to deal with plant pathogens effectively. This is achieved through participation of different stakeholders, including communities, and driven by partnerships between government and industry. The presentation gave excellent

examples of a close relationship between state and industry, where management options were supported by industry. including the cost of the eradication of infested banana fields and collaborative compensation plans. A key lesson from Australia is the implementation of strong regulatory frameworks that includes the requirement for farmers to acquire annual planting permits for bananas as well as sourcing their banana planting materials from Quality Banana Assurance Nurseries (QBAN) as a measure to manage banana diseases. In addition, strong quarantine rules for moving planting materials between quarantine zones and the movement of soil on vehicle, machinery and personnel are also in place.

The COMESA presentation highlighted the creation of the tripartite agreement for COMESA, EAC and SADC as a way of dealing with dual membership of some member states and to improve coordination among the three RECs. The presentation then elaborated on the support provided by COMESA to its Member States in order to enhance their capacity to trade in agricultural produce/products in the region. Furthermore, COMESA has established an SPS sub-committee that meets annually to identify SPS regional priorities, coordinate SPS work and support SPS harmonisation initiatives. The committee reviews progress made on decisions made by the Council of Ministers and recommends appropriate actions through the Ministers of Agriculture. The presentation further indicated regional priorities in dealing with invasive alien species, which includes strengthening policy, regulatory and institutional frameworks, sharing information at regional level, strengthening prevention, and appropriate capacity in the public and private sectors.

A paper on the development and use of a Pest Risk Analysis (PRA) to mitigate Foc TR4 underpinned that interventions regarding Foc TR4 in Africa should (i) arrest the spread of the pathogen in Mozambique and (ii) prevent new introductions into other African countries. The case was presented that these outcomes are most likely to happen when the responses time to a pest outbreak is both rapid and well-thought through, i.e. based on good evidence of the farming system, policy options and knowledge of the pest. Unfortunately, for Africa this is often not the case, as exemplified during the presentation by reference to the spread of diseases such as Cassava Brown Streak, Maize Lethal Necrosis and Banana Xanthomonas Wilt within the Great Lakes area of East Africa. Based on these experiences, and the response to date with the outbreak of Foc TR4 in Mozambique, the case was made that Plant Health Systems in Africa need to be strengthened. Specifically, the role and capacity of National Plant Protection Organisations (NPPOs) was highlighted as pivotal to driving the required change. Functional, effective NPPOs are best positioned to anticipate and avoid pest events and, in cases of pest entry, to manage the outbreak. In concluding, the paper elaborated on the use of PRA to identify gaps of scientific knowledge and policy coherence

that may guide in the prioritisation of research, policy development and communication of risk.

A question was asked about the FAO's role in pest management to clarify whether the FAO would address Foc TR4 as an individual case or whether their technical support would apply to banana disease problems in general. The FAO responded by indicating that they would like to have a situation where the support given to the national systems would result in the development of capacities that are sustained to manage pest outbreaks more effectively across regions. On SPS agreements, the discussion stressed the importance of translating regional frameworks into national plans and strategies. In response to a question on what should follow after a PRA, it was explained that the PRA should be a living document to ensure active engagement with communities, governments and the industry, and to influence governments. Ownership of the process is important to be meaningful and to ensure positive actions. It was proposed that the FAO, COMESA and SADC consider providing support for capacity building for the region because of the porous borders to help countries manage the pest problems. It was mentioned that, while regional approaches to capacity development are appreciated, it should be recognised that some aspects of capacity development are better addressed at national level due to specific needs. The meeting was informed about the example of the Centre of Phytosanitary Excellence (COPE) to protect agriculture and support trade led by Kenya Plant Health Inspectorate Services (KEPHIS) that is nurturing capacities for conducting PRAs. On the other hand, most NPPOs do not have mechanisms in place to be able to implement PRAs and then end up conducting desk studies. There was some concern about how well national needs of the technocrats are articulated through the Council of Ministers. The need for effective means of awareness creation to policy makers was considered key in establishing this linkage.

Country summary reports on banana production systems and potential risks due to Foc TR4

Country representatives presented brief reports on the status of banana production, experiences on disease management strategies, and research capacities in their countries. Each of the presentations shared baseline information on the cultivars planted, farming systems in place, planting materials used, interaction with risk countries, plant protection services available, and research capacity available for banana production.

The presentations revealed that most of the countries in southern Africa grow Cavendish bananas that are vulnerable to Foc TR4. Countries bordering Mozambique identified

Mozambique as a potential risk to their own industries. The delegates also considered China as a likely source of the pathogen, as most countries in Africa are trading with China. It was further indicated that the disease might already be in other African countries but is yet to be detected. It was concluded in the session that there is a need to develop regional strategies to contain the Foc TR4 incursion and create awareness among smallholder farmers so that they can understand the importance of the use of tissue culture plantlets. The issue of governments putting policies/legislation in place and implementing them to remove diseased plants and penalise those not complying, was considered a priority.

Developing a strategy to address the threat of Foc TR4 in Africa

Goal

The goal of the strategy is to contain Foc TR4 on-farm in northern Mozambique, and to prepare the country, its neighbours and other African countries reliant on banana production for food security and income generation against its introduction.

Key Elements

Four key elements (themes) were identified for discussion to develop a strategy to address the threat of Foc TR4 in Africa: ***Biosecurity/Disease management, Public Awareness/Extension, Policy,*** and ***Private Public Partnerships.***

Objectives

Workshop participants were divided into four groups to discuss the four themes mentioned above. Each group worked under the guidance of an assigned chair to define objectives, identify the actions/activities required (WHAT), assign responsibilities (WHO) and settle on time frames (WHEN).

Table 1: Objectives and activities, their relative priorities, responsibilities and time frames for ***Biosecurity/Disease Management***

Objectives	Activities	Priority[1]	Responsibility[2]	Time Frame[3]
	In Mozambique:			
1. To contain Foc TR4 and prevent its spread off-farm, into the region and into Africa	1. Surveillance and mapping	1, 2	2, 3, 5	Short term
	2. Reporting and rapid confirmation of suspected outbreaks	1, 2	2, 3	Short term
2. To engage in research and development on aspects related to banana Fusarium wilt in Africa, from diagnostics to disease management	3. Characterise disease zones and introduce buffer zones and heightened awareness	1	1, 2, 3	Short - medium term
	4. Establish the risk of spread to commercial and smallholder farms	1, 2	3	Short term
3. To strengthen capacity and awareness for the early identification of Foc TR4-affected plants	5. Develop a response mechanism on how to contain the disease and continue farming	1, 2	3, 5	Short – medium term
4. To test banana varieties for resistance to Foc TR4 in collaboration with Asian partners	6. Introduce effective quarantine and sanitation measures	1	5	Short term
	7. Introduce and plant resistant varieties	1	2, 5, 8	Short to medium term
	8. Develop field diagnostics for Foc TR4	1	5, 7, 8	Short term
	9. Evaluation of local resistant varieties	1	2, 5, 7, 8	Medium - long term
	10. Experiment with soil rehabilitation	1, 2	2, 5, 7	Medium - long term
	11. Integrated disease management	1, 2	2, 5, 7	Medium - long term
	12. Establish a regional center of excellence (RCoE) with plant health and diagnostic capacity	1	7	Medium – long term

	In other African countries:			
	1. Training in disease diagnosis	1	3, 5, 6, 7	Short – medium term
	2. Surveillance and mapping	1	3, 5	Short - medium term Medium to long term
	3. RCoE to develop standard protocols and training programmes	2, 3	7	Medium term
	4. Characterise susceptible cultivar production areas and produce a risk map	1, 2	3, 5	Short – medium term Medium term
	5. Target surveillance to risk hot spots	1	3, 5	Short – medium term
	6. Pest Risk Analysis for Foc TR4 in Africa	1, 2	5	Medium term
	7. Develop a scientifically-based outbreak response mechanism	1, 2	3, 5, 6, 7	Short – long term
	8. Introduce regulatory measures and monitoring programmes	1	3	Short - medium term
	9. Develop a germplasm exchange programme to test Asian/Australian somaclones in Africa and African bananas for resistance to Foc TR4 in Asia	1	5, 6, 7, 8	Long term
	10. Develop field identification kits for Foc TR4 and other important pathogens of banana	1, 2	5, 7, 8	
	11. Breeding for resistance	1, 2, 3	5, 7	

[1] Priory: 1: Must have - cannot do without; 2: Should have - very important but can do without; 3: Nice to have – not very important but helpful

[2] Responsibility: 1: Government(s); 2: Private sector (incl. growers); 3: NPPOs; 4: Donors; 5: R & D (NARS and CG centres); 6: Universities; 7: Others (RCoE, AC4TR4 Task Force, SADC, ASARECA, RTB, BARNESA); 8: International collaborating partners

[3] Timeframe: Short term: within 6 months; Medium term: 1-3 years; Long term: 1-5 years

Table 2: Objectives and activities, their relative priorities, responsibilities and time frames for ***Public Awareness/Extension***

Objectives	Activities	Priority[1]	Responsibility[2]	Time Frame[3]
1. Increase awareness of risks due to disease: • How to recognise disease • How to report disease • How to respond and restrict disease 2. Increase capacity of extension services to prevent introductions, limit its establishment and spread 3. Increase credible communication of what needs to be done and what has been done, and update regularly to enable lessons learnt to be put into practice	**In Mozambique**			
	1. Build capacity to recognise and restrict the disease	1	2, 3, 7	Short - medium term
	2. Prevent further spread and incursions by: • Awareness • Quarantine • Survey and map incidence • Survey and monitor spread – rate and mechanisms • Create system of disinfection points – ports, farm entrances, trunk roads	1	2, 3, 5, 7, 8	Short – medium term
	3. Rapid response to detection through containment and isolation	1	2, 3	Short - medium term
	In other African countries			
	1. Rapid recognition and reporting system	1, 2	3, 7	Short – long term
	2. Develop country-specific reactions to suit available capacity and, if possible, the abandonment of infested land	1, 2	2, 3, 5	Short – medium term
	3. National and regional coordination	1, 2	3, 5, 7	Short – long term

[1] Priory: 1: Must have - cannot do without; 2: Should have - very important but can do without; 3: Nice to have – not very important but helpful
[2] Responsibility: 1: Government(s); 2: Private sector (incl. growers); 3: NPPOs; 4: Donors; 5: R & D (NARS and CG centres); 6: Universities; 7: Others (RCoE, AC4TR4 Task Force, SADC, ASARECA, RTB, BARNESA); 8: International collaborating partners
[3]Timeframe: Short term: within 6 months; Medium term: 1-3 years; Long term: 1-5 years

Table 3: Objectives and activities, their relative priorities, responsibilities and time frames for ***Policy***

Objectives	Activities	Priority[1]	Responsibility[2]	Time Frame[3]
1. Establish an advocacy programme at national and regional levels to target policy makers 2. Strengthen national and regional legislative and regulatory mechanisms for Foc TR4 3. Establish framework for resource mobilisation for Foc TR4 management at national and regional level.	1. Request for a Technical Cooperation Programme (TCP)	1	1, 3, 7	Short term
	2. Develop a national action plan calling for emergency	1	3	Short term
	3. Develop national capacity for identification of FocTR4 symptoms	1	3, 5, 7	Short – medium term
	4. Identification and diagnosis	1	3, 5	Short – medium term
	5. Inform policy makers regularly on impact of TR4 on banana industry	1, 2	3	Medium term
	6. Strengthening national quarantine measures	1	1, 3	Short – medium term
	7. Acquire diagnostic tools/infrastructural capacity	1	5, 7	Short – medium term

[1] Priory: 1: Must have - cannot do without; 2: Should have - very important but can do without; 3: Nice to have – not very important but helpful
[2] Responsibility: 1: Government(s); 2: Private sector (incl. growers); 3: NPPOs; 4: Donors; 5: R & D (NARS and CG centres); 6: Universities; 7: Others (RCoE, AC4TR4 Task Force, SADC, ASARECA, RTB, BARNESA); 8: International collaborating partners
[3] Timeframe: Short term: within 6 months; Medium term: 1-3 years; Long term: 1-5 years

Table 4: Objectives and activities, their relative priorities, responsibilities and time frames for ***Public Private Partnerships***

Objectives	Activities	Priority[1]	Responsibility[2]	Time Frame[3]
1. Develop a communication/commitment forum that is: • Transparent • Problem solving • Funding priorities • Exchange of knowledge 2. Define the sharing of resources: • Commercial and smallholder growers • Private service providers 3. Define responsibilities 4. Develop technical task forces per country	1. Advocacy, awareness creation, workshops both at national and regional level	1	3, 7	Short – medium term
	2. Strengthening capacity for surveillance, diagnosis, quarantine and research	1	3, 7	Short – medium term
	3. Coordination mechanisms	1	3, 7	Short – medium term
	4. Ex-ante analysis, socio-economic/PRA	1, 2	7	Medium term
	5. Stock take and review existing national and regional legislation and regulatory framework	1, 2	3	Short – medium term
	6. Harmonisation of legislative/regulatory mechanisms at regional level	1	3, 7	Medium term
	7. Lobby for inclusion of TR4 control in national budgets and regional bodies' priorities (RECs) and international cooperating partners	1	3, 7	Short – medium term
	8. Develop quality standards/regulation for banana seeds	1	2, 3, 7	Medium term

[1] Priory: 1: Must have - cannot do without; 2: Should have - very important but can do without; 3: Nice to have – not very important but helpful
[2] Responsibility: 1: Government(s); 2: Private sector (incl. growers); 3: NPPOs; 4: Donors; 5: R & D (NARS and CG centres); 6: Universities; 7: Others (RCoE, AC4TR4 Task Force, SADC, ASARECA, RTB, BARNESA); 8: International collaborating partners
[3] Timeframe: Short term: within 6 months; Medium term: 1-3 years; Long term: 1-5 years

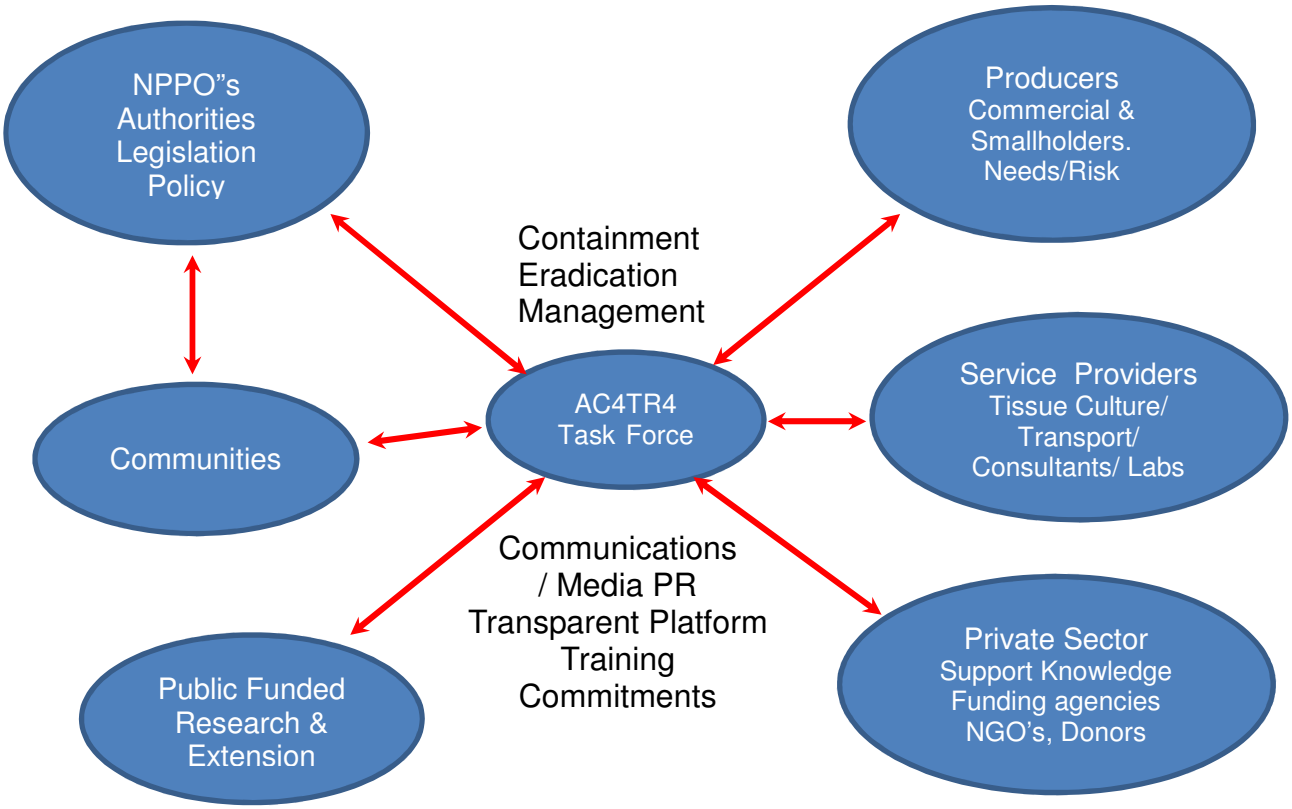


Figure 1: Conceptual framework for a private-public partnership with key players and objectives. Research and capacity gaps in Africa were identified for Biosecurity/Disease management, Extension/Public awareness, Policy, and Public Private Partnerships (Table 5).

Table 5: Research and capacity gaps for each strategic key element

Key Element	Research Gaps	Capacity Gaps
Biosecurity/ Disease Management	1. Information on Foc TR4 epidemiology, survival, infection biology and spread 2. Field-based diagnostic methods 3. Field-based methods for Foc control 4. Identify appropriate control methods 5. Accurate early screening bio-assays 6. Evaluation of African banana varieties against Foc TR4 7. Studies on resistance mechanisms in banana to Foc TR4 8. Breeding for resistance to Foc TR4 9. Treatments to purify infested soil 10. Test of Asian somaclones in different farming systems and ecologies 11. Microbiological research to identify potential biocontrol agents	1. Programmes to respond to threat of Foc TR4 in Africa 2. Ability to develop and supply appropriate varieties to growers 3. Diagnostics facilities 4. NPPO activities not effectively implemented due to lack of support by governments
Public Awareness /Extension	1. Tested publicity materials to increase awareness in clear and credible manner 2. Mechanisms to share information such as via SMS alerts, radio, TV, posters, mobile plant clinics and through engagements of community leaders 3. Systems to collate and share information on reports of disease outbreaks and success of measures to limit spread 4. How to mobilise community-based schemes to allow for abandonment of land identified as being infested	1. Weak extension services (systems and materials) 2. Weak advisory systems that should be strengthened (public and private industries, NGOs) 3. Lack of coordination within and between countries 4. Weak linkages between: • Research and extension • Biosecurity frameworks • Public-private partnerships • With policy makers 5. Regional Pest Risk Analysis document for Foc TR4 required to share knowledge
Policy	1. Socio-economic, environmental and food security consideration to define potential impact of Foc TR4 (PRA) 2. Lesson learnt from Mozambique experience	1. Technical people to articulate FocTR4 case to policy makers 2. Policy analysts to package technical information on Foc TR4 for implementation 3. Accurate reporting by media
Private public partnerships	1. Surveys and mapping of banana production systems 2. Risk assessment 3. Cultivar susceptibility 4. Field sites for resistance screening 5. Eradication/early detection 6. Social support (impact of actions during implementation of quarantine)	1. Communication • Public relationships • Right information channels • Extension and training • System to send messages to relevant stakeholders 2. Clean planting material 3. Certified banana seed system

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Implementing a strategy to address the threat of Foc TR4 in Africa

Task Force for the Africa Consortium to address the threat of Foc TR4

The workshop recommended the formation of a task team to spearhead and coordinate the establishment of the Africa Consortium to address the threat of Foc TR4. The initial terms of reference and composition of the consortium were agreed upon.

The terms of reference for AC4TR4 agreed to were:

- To analyse the prevailing situation in Mozambique and determine the risk of Foc TR4 to African bananas
- To formulate extension needs and research gaps
- To map the occurrence and spread of the Foc TR4 in Africa
- To actualise the strategy, document the discussions of the meeting, resource mobilisation, coordinate actions, and follow up on responsibilities
- To develop a communication approach to better manage the media and the messages it portrays to avoid sensationalism and encourage accurate reporting
- To identify and pursue funding opportunities

Membership of the AC4TR4 Task Force

Workshop participants nominated members to serve on the AC4TR4 Task Force. It was agreed that the membership should be made up of individuals to champion the AC4TR4 cause and to harness support from within and outside their respective institutions. To secure the organisational support of individuals, it was agreed that there will be a need for SADC to request for the participation of individuals on the AC4TR4 Task Force from their institutions. The following people were identified as members during the workshop.

- RECs: Chiluba Mwape (SADC) and Brian Nsofu (COMESA)
- NPPOs: Serafina Mangana (Mozambique)
- NARS: Jerome Kubiriba (NARO) and Mweshi Mukanga (Zambia)
- FAO: Joyce MulilaMitti (Ghana)
- Academia: Altus Viljoen (Stellenbosch University)
- CGIAR: Fen Beed (IITA)
- Producers: Connie Fraser (Matanuska) and Kobus Lourens (BGASA)
- Private sector: John Robinson (DuRoi Laboratories)
- Networks: Eldad Karamura (BARNESA)

Activities at the national level

At national level it was agreed that the National Plant Protection Organisation (NPPOs) and National Agricultural Research Services (NARS) are the initial contacts, and could form their own national task forces.

Immediate actions

The workshop participants identified immediate actions and next steps to start the process of putting in place a strategy to address the threat of Foc TR4 in Africa (Table 6).

Funding opportunities

The following funding organisations were identified as potential providers of funding to AC4TR4:

- Research: USAID Pretoria Regional SPS mission to include CCARDESA as partner
- Multi-nationals in banana trade for private public partnership
- Syngenta Foundation

Table 6: Immediate action and next steps

Action	Responsible	Comment
Develop a Mozambique Technical Cooperation Programme (TCP)	Dr Serafina Mangana (Mozambique NPPO) and Dr Joyce MulilaMitti (FAO)	Mozambique has made a request and FAO is considering the proposal
Uganda will build on BXW support with FAO	Dr Jerome Kubiriba, Ephrance Tumuboine (Uganda NARS, NPPO) and FAO	A proposal will be developed to explore how on-going BXW support could be expanded to include Foc TR4
Tanzania will build on BXW support with FAO	Paul Chidinda (Tanzania NPPO) and FAO	A proposal will be developed to explore how on-going BXW support could be expanded to include Foc TR4
DRC will use structures developed for BXW / CMDs management	Tchilolo Tshishiku Gina (DRC NPPO)	Existing disease management structure will have their mandate expanded to include Foc TR4
Apply for FAO 8-country regional disease control project that includes the Foc TR4 issue	Godfrey Chikwenhere (Zimbabwe NPPO), Mweshi Mukanga & Mable Mudenda (Zambia, NARS and NPPO) and FAO	Draft proposals already developed and will include Foc TR4
Apply for regional TCP	Chiluba Mwape (SADC)	Concept notes for the draft proposal already developed
Finalise the Stellenbosch Declaration	Chiluba Mwape (SADC) and Brian Nsofu (COMESA)	Draft agreed on in the workshop
Develop a web page for sharing information on Foc TR4 in Africa	AC4TR4 Task Force and Kobus Lourens (BGASA)	Web page will be linked to other relevant banana research and development sites

Dealing with the media

In order to help delegates understand how to deal with the press, Dan Koeppel, the author of the book “Banana: The Fate of the Fruit that Changed the World”, made an insightful presentation. The following were the main points of the presentations:

Be a good source: This is an ongoing story. Some reporters, not all, will keep working on this. Be the one they’ll rely on for truthful information. They won’t see it as a collaboration at first, but eventually mutual trust will be built. A good source provides honest information, access and provides more sources.

Understand what media people do: The job of the media is not just to inform the public, it is also to keep their jobs. That means they need to sell magazines or newspapers or get viewers to tune in.

Sensationalism happens: The media people do their best, but they have bosses and editors who write the own headlines and most media people are surprised too, when they see how their stories are ultimately presented.

Reporters are idealists: Most reporters really believe that they’re doing some good by informing the public. This particular story is getting so much play not because of sensational notions like the “banana apocalypse”, but because reporters also sympathise with the goal: feeding people and keeping them healthy.

In casual encounters, have no expectations that your message will be transmitted: Reporters have their own agendas and pressures. Do your best, but your goal is to be helpful, not to control the output.

Accept short handing and sound-bytes: The typical reporter; in print, web, or broadcast; is looking for ways to communicate with the general public. They often don’t understand the science. So what you see as “sensationalism” is often them determining, and usually correctly, what the most appealing part of the story is.

The media copies and follows: You will see the same mistakes and facts and ideas repeated, over and over again. Be an insider for the reporter and help them feel that they’re adding something new or advancing the existing information.

Don’t complain about the press to the press: Reporters are underpaid and usually writing because they care. Which doesn’t necessarily mean that they are going to get it right. Most of them are somehow very aware of their shortcomings.

Do correct mistakes: If you were misquoted or misunderstood, let the reporter know. But be proportional: a seven page letter outlining the mistakes in a one-page story probably isn’t going to win a lot of goodwill

Tell your story yourself: More than ever you have the opportunity to reach the public directly. So do so. But be good at it - a blog that’s nothing but fluff is going to make you look fluffy. Instead, provide an honest, inside window to the details of your work.

Don't expect technical translation: Don't make a complex, scientific explanation of a concept and then expect the reporter to do a good job of turning it into something the average person can understand. Instead, come up with your own easily understood translation.

No right of review: Reporters don't like to share copies of their work with sources in advance. Some media organisations actually prohibit it. Instead, stay in touch and offer to help the reporter if they have any factual questions.

No gatekeepers: Though a media specialist is sometimes necessary, they can be pretty frustrating when they clearly have no access to company resources, decisions, and personnel. It is far better to find one or two people who actually have power and assign them to tell your stories**.**

Conclusion and recommendations

Goal of AC4TR4: The workshop concluded that the AC4TR4 Task Force should refine and implement the strategy developed at the workshop to address the threat of Foc TR4 in northern Mozambique and avert its spread to other African countries. It was further recommended to also prepare other African countries for Foc TR4 in a coordinated regional manner by building capacity of national research and biosafety systems.

Regional Nature of the Strategy: It was concluded that to be effective, a regional approach is required to address the threat of Foc TR4 in Africa. It was, therefore, recommended that SADC: Trade and Industry, Finance and Investment should continue to take leadership in this initiative. It was further recommended that the International Institute for Tropical Agriculture (IITA) should continue to provide technical support.

Asian testing of African banana varieties: It was concluded that Africa would benefit from testing of banana varieties for resistance in Asia. It was thus recommended that collaboration with research organisations like Bioversity: Asia-Pacific, the Taiwan Banana Research Institute and the Guangdong Academy of Agricultural Sciences be strengthened.

Research to support management of Foc TR4: It was recommended that African research institutions such as Stellenbosch and Eduado Mondlane universities be supported, and that partners with advanced research institutions be able to contribute scientific insights for the management of the disease.

Web portal: To strengthen communication it was recommended that AC4TR4 develop a web portal that would be actively managed to ensure updated information for all key stakeholders. It was also recommended that the web portal be linked to the sites of other stakeholders, like IITA and Bioversity International.

Technical Cooperation Programmes (TCP) request by different countries: Following on the example of Mozambique, it was recommended that other countries in the region asses their capacity to manage pests of quarantine importance and consider developing proposals for strengthening such capacity through FAO technical support.

National capacity versus regional capacity: To be able to implement regional recommendations, it was recommended that opportunities to strengthen NPPOs should be explored in a targeted manner across regions.

Management of affected fields: It was recommended that ideally affected fields should be abandoned and fenced-in to avoid movement of soil carrying the pathogen. It was, however, noted that abandonment of fields for smallholder farmers will have serious socio-economic implications. It was, therefore, recommended that policies to support affected farmers be put in place that includes compensation measures and community support measures to cushion effects of abandonment of production by the affected smallholders. These schemes will be specific to needs and systems in place within each country. It thus needs to be coordinated at the national levels with lessons learned being shared across the region.

Annex 1. WORKSHOP PROGRAMME

	Tuesday 22 April, 2014: Delegates Arrive
18:00	**Welcome function at STIAS and Registration**
	Wednesday 23 April, 2014
08.00	**Registration**
08:30	**Welcome and opening address:** Mohammed Karaan (Dean: AgriScience, Stellenbosch University)
08:45	**Workshop objectives:** Chiluba Mwabe (SADC, Botswana)
09:00	**Introductions and workshop process:** Edward Chuma (facilitator, PICO)
	Session 1: Global perspectives on banana production and Fusarium wilt (Foc)
09:30	**Importance and challenges of banana production in Africa:** Eldad Karamura (Bioversity International, Uganda)
09:50	**A global perspective on Fusarium wilt of banana:** Altus Viljoen (Stellenbosch University, South Africa)
10:20	**Group photo/health break**
	Session 2: Introduction to Foc tropical race 4 (TR4) in Mozambique
10:50	**Dealing with Foc TR4 in Asia:** Gus Molina (Bioversity International, Philippines)
11.20	**The use of plant resistance to control Foc TR4:** Rony Swennen (IITA, Tanzania)
11:35	**Dealing with Foc TR4 at Metocheria farms:** Jack Dwyer (Matanuska, Mozambique)
11:55	**Perspectives on the outbreak of Foc TR4 in Mozambique:** Serafina Mangana (Ministry of Agriculture, Mozambique)
12:15	**Discussion**
12:30	**Lunch**
	Session 3: Trans-boundary plant pest management in Africa
13:30	**African agricultural systems and challenges with trans-boundary pests:** Fen Beed (IITA, Tanzania)
13:50	**Dealing with invasive pests internationally:** Joyce MulilaMitti (FAO, Ghana)
14:10	**African regional management of invasive pests: Brian Nsofu** (COMESA, Zambia)
14:30	**Plant quarantine and the eradication of banana pathogens and pests in Australia:** Bob Williams (Department of Primary Industries, Australia)
14.50	**Development and use of Pest Risk Analysis document – a common communication tool to mitigate Foc TR4:** Julian Smith (Fera, UK)
15:10	**General discussion**
15:30	**Health break**
	Session 4: Mapping the risk of potential spread of Foc TR4 across Africa
16:00	**Country summary reports on banana production systems and potential risks due to Foc TR4:** Country representatives
17:30	**Introduction to plans for working groups to develop strategy to address the threat of Foc TR4:** Edward Chuma (Meeting facilitator, PICO)
17.45	**General Discussion**
18.00	**Close**
19:30	**Dinner at STIAS**

Thursday 24 April, 2014	
Session 5: Developing a strategy to manage Foc TR4 in Africa	
08:00	**Working Group discussions to develop strategy to address the threat of Foc TR4: Research, development and biosafety capacity:** Edward Chuma
10:30	**Health Break**
11:00	**Reporting back and open discussion:** Edward Chuma
12:00	**Reaching consensus on the strategy:** Edward Chuma, Fen Beed and Altus Viljoen
13:00	**Lunch**
Session 6: Implementing a strategy to address the threat of Foc TR4 in Africa	
14:00	**Coordinating priority activities and responsibilities, by country and region:** Edward Chuma
14:30	**Identifying funding opportunities, by country and region:** Edward Chuma
15.00	**Communication mechanism:** Jeffrey Oliver (IITA, Zambia)
15:30	**Discussion**
15.45	**Closing Remarks:** Chiluba Mwaba (SADC)
16:00	**Health break**
16:30	**Joint press release and press session:** Chiluba Mwaba (SADC), Joyce MulilaMitti (FAO), Fen Beed and Rony Swennen (IITA), Eldad Karamura and Gus Molina (Bioversity International), Serafina Mangana (NPPO-Mozambique), Jack Dwyer (Matanuska), Altus Viljoen (SUN)
19:00	**Dinner at Overture/Longridge**
Friday 25 April, 2014	
	Participants depart

Annex 2. Stellenbosch Declaration

"Stellenbosch Declaration on addressing the threat of *Fusarium oxysporum* f. sp. *cubense* tropical race 4 (Foc TR4) to banana production in Africa"

AN OUTPUT FROM THE FIRST WORKSHOP OF THE AFRICAN CONSORTIUM FOR *FUSARIUM OXYSPORUM* F. SP. *CUBENSE* TROPICAL RACE 4 (AC4TR4)

Stellenbosch, South Africa

10 June 2014

PREAMBLE

Fusarium oxysporum f. sp. *cubense* tropical race 4 (Foc TR4), a highly pathogenic form of the banana Fusarium wilt fungus previously confined to Asia, was discovered in northern Mozambique in 2013 (http://www.rtb.cgiar.org/new-banana-disease-to-africa-found-in-mozambique/). In Asia, the fungus has caused considerable damage to Cavendish bananas and certain locally grown varieties in all of the countries where it has been introduced. In order to manage the disease outbreak in northern Mozambique, and to prepare African countries reliant on banana for food security and income generation against its possible spread, a stakeholder workshop of the African Consortium for Foc TR4 (AC4TR4) was held in Stellenbosch, South Africa from 23 to 24 April 2014, focusing on the theme: "Development of a Strategy to address the threat of Foc TR4 in Africa."

The workshop was convened by the *Southern African Development Community (SADC)*, and was attended by intergovernmental bodies, regional research institutions, trade organisations, government representatives, plant protection experts, universities, the private sector, producers, donors and international cooperating partners (ICPs) with the mandate and expertise to curtail the introduction and spread of Foc TR4 in Africa. The objectives of the workshop were as follows:

1. To develop a strategy to manage Foc TR4 in Africa with clear institutional roles and responsibilities;

2. To plan and prioritise activities and immediate actions; and

3. To identify mechanisms to engage donors and policy makers.

THE DECLARATION

We, as representatives of AC4TR4 from eastern, central, and southern Africa, hereby jointly declare that we:

Are deeply concerned about the introduction of Foc TR4, a quarantine pest of banana, into the African continent despite efforts of Member States to operationalise commitments made under the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), and the Southern African Development Community (SADC) treaties, as well as the International Plant Protection Convention (IPPC) and World Trade Organisation (WTO) agreement on the application of Sanitary and Phytosanitary (SPS) measures;

Commend Stellenbosch University (SUN) for providing technical expertise in the successful identification of Foc TR4, and for SUN and the International Institute of Tropical Agriculture (IITA) for offering advisory services and mobilising resources for the containment of the disease at Matanuska Farm and for the National Plant Protection Organisation (NPPO) of Mozambique;

Commend the NPPO of Mozambique (NPPO MZ) for the timely reporting of Foc TR4 on the IPPC portal as required by the IPPC and SPS Annex to the SADC Protocol on Trade;

Commend Matanuska Farm for being transparent about the detection and spread of Foc TR4 on their farm, and for being receptive to further plant pathogen diagnosis and collaborating with the NPPO MZ to institute on-farm quarantine measures;

Recognise the role being played by SADC and COMESA; in collaboration with regional and sub-regional partners, SUN, IITA and Bioversity International; in coordinating a strategy to deal with the threats of Foc TR4 in Africa. We urge that these joint efforts be further strengthened until the disease is brought under effective control;

Acknowledge the sponsorships of the Bill and Melinda Gates Foundation (BMGF); the United States Agency for International Development (USAID); the Food and Agriculture Organisation (FAO); the Global Partnership for Agriculture Research (CGIAR) and Research Program on Roots, Tubers and Bananas (RTB); SUN and IITA that enabled facilitation of the first workshop of AC4TR4, towards the development of a strategy to coordinate efforts on the continent;

Encourage collaboration and coordination of activities between research institutions, government organisations, the private sector, and international partners to address issues of mutual concern on the African continent;

Reaffirm our commitment to prevent the introduction and spread of plant pathogens and pests of economic importance in Africa while facilitating safe trade of plants and plant products, including regulated articles, in order to enhance food security and eradicate poverty on the continent.

WE HEREBY JOINTLY AGREE TO

1. Fully develop and implement a continental strategy under the direction of an African Foc TR4 Task force in order to contain the incursion of Foc TR4 in the Nampula province of Mozambique and to prevent similar incursions elsewhere in Africa.

2. Provide and enhance technical capacity on the continent, and to implement and monitor phytosanitary systems; including promoting greater use of International Standards for Phytosanitary Measures (ISPMs) and other matters concerning plant health.

3. Report and map new outbreaks of Foc TR4 in African Member States and communicate information on new outbreaks, successful containment, and prevention initiatives electronically by means of a web portal.

4. Recognise that Foc TR4 is a continental issue that requires coordination and collaboration between NPPOs, RECs, ICPs, research institutions, universities, governments, and other relevant stakeholders throughout Africa by means of regular meetings and consultations.

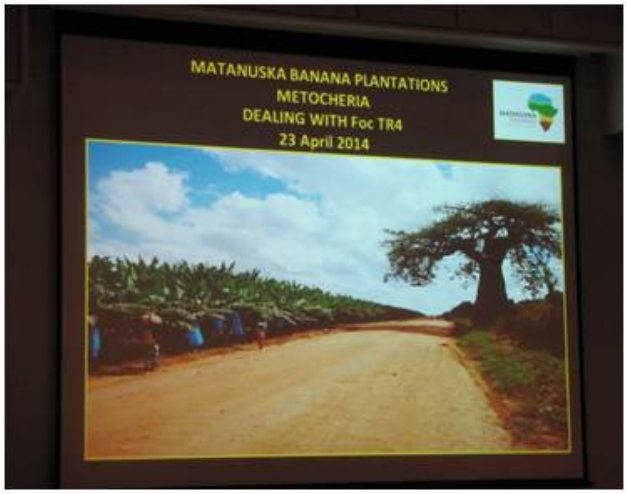
5. Develop and apply appropriate diagnostic services, provide training, raise awareness, monitor disease spread, and screen banana germplasm for Foc TR4 resistance for deployment by vulnerable banana growers.

6. Call upon African and international organisations to recognise and support the activities of AC4TR4 by investing in research, awareness programmes, human capacity, and infrastructure development on the continent.

7. Develop a regional Pest Risk Analysis document and set of phytosanitary measures to be enforced by Member States in order to prevent the introduction and spread of Foc TR4 and other quarantine pests of banana to areas where they do not yet occur.

8. Encourage governments in Africa to formulate the necessary legislation and to implement the required activities to protect the crops of vulnerable farm owners against destructive foreign plant pests.

Annex 3. Group photo and picture gallery


MATANUSKA BANANA PLANTATIONS
METOCHERIA
DEALING WITH Foc TR4
23 April 2014


Dealing with invasive pests internationally: FAO perspectives
stias


stias
STELLENBOSCH INSTITUTE FOR ADVANCED STUDY
STELLENBOSSE INSTITUUT VIR GEVORDERDE NAVORSING


EXIT

Annex 4. List of participants

Paul-Henry Bansoba
Consultant National
Chargé des Maladies des Plantes
FAO-DRC-Coordination Zone Est.
Goma Nord Kivu
RD CONGO
Phone : +243 824158232 ; +243 997250228
E-mail: paulhenry.bansoba@fao.org;
henripaulbans@yahoo.fr

Dr Fen Beed
Plant Pathologist IITA
Regional Hub for East Africa, Mlalakuwa
(Coca Cola)
Plot 25, Mikocheni Industrial Estate
PO BOX 34441, Dar es Salaam
TANZANIA
Tel: +255 754 600 701 / +255 776 000 700
Email: f.beed@cgiar.org

Ruth Bila
National Agrarian Research Institute
Av.FPLM, nr.2698, Bairro de Mavalane.
Maputo
MOZAMBIQUE
Celular: 826998679\ 847359241
E-mail: ruthbila@yahoo.com

Mgenzi S.R. Byabachwezi
ARI Maruku, P.O. Box 127,
Bukoba
TANZANIA
Tel: +255 (0)784 340255
E-mail: msrbyabachwezi@yahoo.com

Chih-Ping Chao
P.O Box #18
Chiuju, Pingtung
90403
TAIWAN
E-mail: Cpchao_tbri@yahoo.com.tw

Musa Paul Chidinda
Ministry of Agriculture Food Security and
Cooperatives.
Plant Health Services
P.o.Box 9192
+255717228285
E-mail: Paul_mussa@yahoo.com

Godfrey Chikwenhere
Ministry of Agriculture and Rural Development
1 Borrowdale Road
Ngungunyana Building, Second Floor
Harare
ZIMBABWE
E-mail: godiepasu@yahoo.com

Edward Chuma
2934 Off Mapereke Road
New Marlborough
Harare
ZIMBABWE
Contact phone: +263 772235047
+263772836601
E-mail: edward.chuma@picoteam.org

Malcolm Clyde-Wiggins
Frutimanica
P.O.Box 75 Manica
MOZAMBIQUE
Tel: 00258864687071
00258842042990 or 0025823910527
Email: frutimanica@gmail.com

Tomás Chiconela
Faculty of Agronomy and Forestry Engineering
Eduardo Mondlane University, C.P. 257
Maputo, Mozambique.
Fax: +258 21492176
Phone: +258 21492177/8
E-mail: tfchico@yahoo.com

Anne Davson
P.O Box 66, Letsitele
Limpopo Province 0885
Republic of South Africa
E-mail: annedavson@mweb.co.za

Jack Dwyer
Matanuska Mozambique Lda
Rua d Direccao do Trabalho D-31
Bairro Maiaia, Nacala Porto, Nacala
MOZAMBIQUE
Contact number: +258843898650
E-mail: Jack.dwyer@matanuska.co.mz

Connie Fraser
Matanuska Mozambique Lda
Rua d Direccao do Trabalho D-31
Bairro Maiaia, Nacala Porto, Nacala
MOZAMBIQUE
Contact number: +258843898650
E-mail: cfraser@matanuska.co.mz

Eduard Hoffman
Department of Soil Science
Stellenbosch University
Private Bag X1, Matieland 7602
SOUTH AFRICA
Email: ehoffman@sun.ac.za

Tchilolo Tshishiku Gina
Normes de Qualité Commerciale pour
les Fruits et Légumes Frais en
RÉPUBLIQUE DÉMOCRATIQUE DU CONGO
+243 81 66 15 423
E-mail: ttchilolo@gmail.com

Eldad Karamura
Senior Scientist/ Regional Coordinator
Bioversity International, Regional Office
Plot 106, Katalima Road, Naguru
P. O. Box 24384, Kampala
UGANDA
Tel: +256 414 286 213; +256 414 286 948;
Cell: +256 712 286 948
E-mail: e.karamura@cgiar.org

Patrick Karangwa
Department of Plant Pathology
Stellenbosch University
Private Bag X1, Matieland 7602
SOUTH AFRICA
E-mail: patrickk@sun.ac.za

Asenath Koech
KEPHIS Headquarters
PO Box 49592-00100
Nairobi
KENYA
E-mail: akoechi@kephis.org

Dan Koepel
995 Terrace 49
Los Angeles, CA 90042
USA
Phone + 1 213 434 8989
E-mail: soulbarn@gmail.com

Jerome Kubiriba
Ministry of Agriculture, Animal Industry and Fisheries
PO Box 34518
Kampala
UGANDA
E-mail: Jkubiriba2012@gmail.com

Jim Lorenzen
Senior Program Officer
Global Development|Research & Development
PO Box 23350, Seattle, WA 98102
USA
E-mail: Jim.lorenzen@gatesfoundation.org

Kobus Lourens
Turfbult estate
Posbus 507
Komatipoort 1340
South Africa
Phone: +27 823343297
E-mail: Kobus@lourensagri.co.za

Ameu Martin
Food and Agriculture Organization
P.O. 521, Kampala
UGANDA
Phone: +256-414-340324/5
Cell phone: +256-772-387397
E-mail: martin.ameu@fao.org

Manuel Martins
Norfund
Senior Investment Manager
Rua Joseph Kiserbo no 253, Maputo
MOZAMBIQUE
E-mail: manuel.martins@norfund.no

Morgana Miller
Department of Plant Pathology
Stellenbosch University
Private Bag X1, Matieland 7602
SOUTH AFRICA
E-mail: morganamiller@sun.ac.za

Gus Molina
Bioversity International
c/o IRRI, 3rd Floor GS Khush Hall, Rm 31, Los Baños, Laguna
PHILIPPINES
Tel: (63) 49 536 0532; (63) 8450563 Ext. 2874
E-mail: a.molina@cgiar.org

Mike Moran
Matanuska PVT Ltd
5179 Tameside Close
Mutare
ZIMBABWE
Contact: +263 772 515293
E-mail: mnmoran.moran@gmail.com

Diane Mostert
Department of Plant Pathology
Stellenbosch University
Private Bag X1, Matieland 7602
SOUTH AFRICA
E-mail: diane@sun.ac.za

Joyce Mulila Mitti
FAO Regional Office for Africa
Gamel Abdul Nasser Road
P. O. Box GP 1628 Accra
GHANA
Mobile number; +233 2630 17624.
E-mail: Joyce.MulilaMitti@fao.org

Mable Mudenda
Senior Agricultural Research Officer
Zambia Agriculture Research Institute
Ministry of Agriculture and Livestock
P/Bag 7 Chilanga, Lusaka
ZAMBIA
Tel: + 260 972 413 204
Fax : +260 278131
E-mail : banji.mudenda@gmail.com

Mweshi Mukanga
Zambia Agriculture Research Institute
Mount Makulu Central Research Station
off Kafue Road, Chilanga
ZAMBIA
E-mail: mmweshi@gmail.com

Cames Mguni
Head of Plant Quarantine Services
Ministry of Agriculture, Mechanisation and Irrigation Development
Box CY 550
Causeway
Harare
ZIMBABWE
Tel: 263 4 704531
E-mail: mguni@mweb.co.zw

A. Muthambe
Universidade Eduardo Mondlane
Praca 25 de Junho, 257
Lourenco Marques
Mocambique Maputo
MOZAMBIQUE
E-mail: amandiomuthambe@yahoo.com.br

Chiluba Mwape
Directorate: Trade and Industry, Finance and Investment
SADC Secretariat
Private Bag 0095, Gaborone
BOTSWANA
Tel: +267 395 1863 Ex 1909
E-mail: cmwape@sadc.int

Celestin Niyongere
ISABU-Institut des Sciences Agronomiques du Burundi
ISABU-Researcher in charge of Fruits & Vegetables Programme
P.O. Box 795 Bujumbura
BURUNDI
Phone: +257 77 702 012
E-mail: niyocelestin@gmail.com
cniyongere@yahoo.fr

David Kamangira
Senior Deputy Director of Agricultural Research Services (TM&ARS)
Department of Agricultural Research Services,
P.O.Box 30779, Lilongwe 3
MALAWI
Cell: +265 888 342 712/ +265 999 122 199
E-mail: Davidkamangira1@gmail.com

Serafina Mangana
Departamento de Sanidade Vegetal
Recinto do IIAM
Pavilhão Novo 1º Andar direito
Av das FPLM no. 3658
Mavalane Maputo
MOZAMBIQUE
Contacto 824828070
E-mail: serafinamangana@gmail.com

Ms. Simphiwe Mnguni
Department of Agriculture,Forestry & Fisheries
Directorate: Plant Health
Division: Early Warning Systems
478 Harvest House
30 Hamilton Street,,Arcadia
SOUTH AFRICA
Tel: 012 319 6269 Fax: 012 319 6025
Cell: 079 801 3754
Email: SimphiweMn@daff.gov.za

Mr Ildephonse Niragire
Professional in Charge of Pest Surveillance
Ministry of Agriculture and Animal Resources
Kigali, Republic of Rwanda
Tel: +250788448997
Email: ildenirn8@gmail.com /
niragire2002@yahoo.fr

Brian Nsofu
SPS Assistant Coordinator
COMESA Secretariat
Ben Bella Road, P.O. Box 30051, Lusaka
ZAMBIA
Phone: +260 211 229725/32
Email: bnsofu@comesa.int

Ankia Rabie
Department of Plant Pathology
Stellenbosch University
Private Bag X1, Matieland 7602
SOUTH AFRICA
E-mail: ankia@sun.ac.za

Carmen Ramos
Enica S.A. (Mozambican banan producers)
Rua Fernando Ganhão 110, Maputo
MOZAMBIQUE
Cel +258823180850
Email: Carmenramos.maputo@gmail.com

Dr Ivan Rwomushana
Staple Crops Programme: ASARECA
Plot 5, Mpigi Rd, PO Box 765, Entebbe
UGANDA
Tel: +256 414 320556
Email: i.rwomushana@asareca.org

Ou Sheng
Banana Research Centre
Institute of Fruit Tree Research
Guangdong Academy of Agricultural Sciences
Guangzhou, Guangdong Province
P.R. CHINA
Tel: +86 20 38694326
E-mail: Shengou6@gmail.com

Julian Smith
International Development
The Food and Environment Research Agency
Sand Hutton, York, YO41 1LZ
UNITED KINGDOM
Tel: +44 (0)1904 462746
Email: julian.smith@fera.gsi.gov.uk

Misheck M.M. Soko
Department of Agricultural Research Services
Bvumbwe Agricultural Research Station
P.O. Box 5748. Limbe
MALAWI
Tel: +265888958122/999958122
Email: m.soko@bvumbweresearch.com

José Efraín Solano Peraza
CFF Banana Director & Enica Banana Project
No 15R/C, Avenida do Trabalho
Nampula
MOZAMBIQUE
Tel 00258827756545
E-mail: efsolano@live.com

Lizeth Swart
Department of Plant Pathology
Stellenbosch University
Private Bag X1, Matieland 7602
SOUTH AFRICA
E-mail: ls3@sun.ac.za

Rony Swennen
Bioversity International
W. De Croylaan 42, 3001 Heverlee
BELGIUM
E-mail: r.swennen@cgiar.org

Gladys Tazan
Production Manager
JACARANDA AGRICULTURA LDA
Nampula
MOZAMBIQUE
Cell: +258 863440615
E-mail: gltazan@njlpro.com

N. Tshisudzungwane
Directorate: Plant Health
DAFF, Harvest House
30 Hamilton Street Arcadia
Pretoria 0002
SOUTH AFRICA
Tel: 012 319 6026
Fax: 012 319 6101
E-mail: NdivhuwoT@daff.gov.za

Ephrance Tumuboine
Ministry of Agriculture Animal Industry and Fisheries
P.O. Box 102, Entebbe
UGANDA
Tel: +256782408191/+256414320801
E-mail: etumuboine@gmail.com

Antonia Vaz
Ministry of Agriculture
CP 1406
Maputo
MOZAMBIQUE
E-mail: avaz5099@gmail.com

Ann Vezina
Bioversity International
Parc Scientifique Agropolis II
34397 Montpellier Cedex 5
FRANCE
Tel.: (+33) 4 67 61 13 02
E-mail: a.vezina@cgiar.org

Altus Viljoen
Department of Plant Pathology
Stellenbosch University
Private Bag X1, Matieland 7602
SOUTH AFRICA
E-mail: altus@sun.ac.za

Bob Williams
Director, Plant Industries
Department of Primary Industry and Fisheries
John England Building
Berrimah Farm, Makagon Road, Darwin.
AUSTRALIA
Tel: 08 8999 2215
Cell: 0457 507 458
Email: Bob-C.Williams@nt.gov.au

Qiasong Yang
Institute of Fruit Tree Research
Guangdong Academy of Agricultural Sciences
Guangzhou, Guangdong Province
P.R. CHINA
Tel: +86 20 38694326
E-mail: soyang@foxmail.com