Food and Agriculture Organization of the United Nations

FCC-EMPRES Information Sheets 10

2016 - November

INTEGRATED PEST MANAGEMENT FOR *EUCALYPTUS* PLANTATIONS: THE CASE OF ZIMBABWE

INVASIVE ALIEN SPECIES (IAS) have become a serious threat on the productivity of forest plantations in many parts of the world. These are any species of plants, animals, pathogens or insects that are non-native to a particular ecosystem and having a tendency to spread to a degree that could cause environmental, economic, socio-cultural or human health damages.

Globalisation of trade, and increased movement of people from one part of the world to the other have largely facilitated the rapid transmission and spread of IAS.

In Zimbabwe, there are three new invasive insects species on *Eucalyptus* plantations – bronze bug, blue gum chalcid, and red gum lerp psyllid – that are presently causing devastating damages to the *Eucalyptus* trees in the country.

In order to control invasive alien insect species of *Eucalyptus* and prevent current and future pest incursions, FAO provides technical assistance to the country for the implementation of integrated forest pest management practices.

FAO INTEGRATED PEST MANAGEMENT *key facts*

THREE NEW INVASIVE INSECTS ATTACKING *EUCALYPTUS* PLANTATIONS IN ZIMBABWE

INTEGRATED PEST MANAGEMENT (IPM) TECHNOLOGIES HAVE CONTRIBUTED TO THE EFFECTIVE MANAGEMENT AND CONTROL OF TWO INVASIVE PESTS OF *EUCALYPTUS* IN ZIMBABWE

INVASIVE ALIEN SPECIES IN *EUCALYPTUS* WOODLOTS AND PLANTATIONS IN ZIMBABWE

Eucalyptus plantations have become a viable livelihood option for many people.

The fast-growing tree of Australian origin has numerous purposes including timber production, honey production, fuel wood and production of fencing and roofing poles. The majority of the rural population use indigenous tree species as a source of energy (domestic requirements and tobacco curing).

The incidence of pest outbreaks dates back many years in the history of plantation forestry in Zimbabwe. However, the country started experiencing serious problems with IAS of *Eucalyptus* between 2007 and 2008 with two forest insect pests, originating from Australia: the bronze bug (*Thaumastocoris peregrinus*) causing enormous defoliation damage and the blue gum chalcid (*Leptocybe invasa*)

causing galls on leaves, stems and branches leading to stunted growth. In 2014, another more devastating *Eucalyptus* pest, the red gum lerp psyllid (*Glycaspis brimblecombei*) was first recorded in the country.

The unprecedented decimation of *Eucalyptus* plantations, increases pressure on indigenous forests as communities revert to their increased use, resulting in land degradation.

INTEGRATED PEST MANAGEMENT FOR EUCALYPTUS PLANTATIONS: THE CASE OF ZIMBABWE

© Z. Mendel

© A. Noack

FAO INTEGRATED PEST MANAGEMENT *key facts*

THE IMPORTATION, REARING AND RELEASE OF THE BIOLOGICAL CONTROL AGENT OF BLUE GUM CHALCID INTO EUCALYPTUS PLANTATIONS SHOWED PROMISING RESULTS IN CONTROLLING THE INSECT PEST

TRAINING OF STAKEHOLDERS THROUGH FARMER FIELD SCHOOLS ON BLUE GUM CHALCID MANAGEMENT

FAO IPM

Food-Chain-Crisis@fao.org
Website
www.fao.org/food-chain-crisis

RESPONSE: INTEGRATED PEST MANAGEMENT

Conventional methods of pest management (chemical use), cannot be used sustainably neither in small scale nor in commercial forest plantations as they are expensive and pose a danger to the ecosystem and the environment in general.

Through FAO projects, Integrated Pest Management (IPM) technologies were introduced in Zimbabwe, contributing to the effective management and control of the two forest pests of *Eucalyptus* (bronze bug and blue gum chalcid), thus arresting the decline of forests and land degradation.

An intensive awareness campaign and training programme were implemented to build capacities on integrated control methods with emphasis on biological control and implementation of phytosanitary measures.

In 2014, as part of efforts to combat *Leptocybe invasa* (blue gum chalcid), FAO funded the importation of its natural enemy (*Seletrichodes neseri*) to act as a biological control agent for the pest. The biological control agent was multiplied at the Forestry Commission of Zimbabwe laboratory and later released in the field.

The monitoring of affected *Eucalyptus* plantations revealed that the biological control agent is already showing promising results in some of the areas it was released.

In terms of capacity development, a total of 431 stakeholders received training through farmer field schools to build capacity in managing *Leptocybe invasa* using IPM which include use of biological control agent. Furthermore, the Forestry Commission of Zimbabwe, the state authority responsible for forest management, was trained to develop and implement control programmes for the *Eucalyptus* pest in Zimbabwe. Knowledge and skills gained are expected to benefit control of future pests of *Eucalyptus* as well as other tree species.

In June 2016, through a regional project being implemented in the SADC region, an integrated pest management training workshop was held on management of IAS affecting *Eucalyptus* species in Zimbabwe. The primary objective was to capacitate extension officers and targeted beneficiaries to be able to identify and report on IAS and to equip participants with basic integrated pest management techniques.

Lastly, FAO produced brochures, training manuals, field guides, and implemented e-learning materials on good practices in forest health.

WAY FORWARD

Following the successful implementation of the classical biological control programme against *Leptocybe invasa* and the initial release of the biological control agent in some areas of the country, there is a need to roll out the programme in other affected areas and develop a monitoring programme, which includes communities to assess the establishment of this agent as well as its effectiveness in reducing pest populations.

The introduction of another pest of *Eucalyptus*, the red gum lerp psyllid is another challenge to be dealt with in the short term. An action plan towards broadening the scope of the biological control programme to include the red gum lerp psyllid has to be developed.

Overall, there is a lack of information on forest invasive species at country and regional level. Information sharing is necessary in the planning and implementation of any regional strategy for the management of invasive alien species.

I6465EN/1/11.16