



FORESTRY SOUTH AFRICA™

IPM GUIDANCE DOCUMENT

ABSTRACT

In response to Forestry Stewardship Council's® (FSC®) Pesticide Policy [FSC-POL-30-001 V3-0-EN] Forestry South Africa's (FSA) Timber Industry Pesticide Working Group (TIPWG) was tasked with producing a generic Integrated Pest Management (IPM) Guidance Document which FSA members could then choose to use as a guide to develop their own IPM approach – a requirement of the FSC Pesticide Policy.

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Overview

The TIPWG IPM Guidance Document provides FSA Members with a generic IPM framework based on FSC requirements and principles that they can choose to use as a guide when developing and incorporating their own IPM framework – a requirement of the FSC Pesticide Policy.

TIPWG advises all its members to read through, and be familiar with, the FSC Pesticide Policy.

Supporting Documentation

The TIPWG IPM Guidance Document has been based on the requirements laid out by:

- **FSC Pesticide Policy [FSC-POL-30-001 V3-0 EN]**

The FSC Pesticide Policy requires, “FSC requires Certified Organisations to use an IPM approach to avoid, or aim to eliminate, the use of chemical pesticides in Management Units (MU)” but does not provide details as to how this should be executed beyond their IPM Diagram (Figure One), and the requirements set out below:

- Certified organisations will, “need to provide evidence that an IPM approach has been followed” and this needs to include “a comparative ESRA according to Scale, Intensity and Risk (SIR) as part of the IPM approach.”
- “Organisations must incorporate the results of their ESRA into Site Operations Plans to identify site specific risks and adapt generic mitigation and monitoring measures previously identified in the IPM ESRA.”
- Finally, “the scope for the Organisation to fulfil all the requirements set out by the FSC Pesticide Policy must feature in the IPM Framework.”

Figure One: FSC Pesticide Policy Integrated Pest Management Requires



- **FSC Guide to Integrated Pest, Disease and Weed Management in FSC Certified Forests and Plantations (2009) – from this point on referred to as the FSC Guide**

NOTE: This Guide was produced prior to the FSC Pesticide Policy, making some of the points in the guide not applicable. FSC have confirmed that the Guide will be updated but have not given a timeline for this.

The FSC Guide outlines a three-step IPM Framework (Appendix A – Figure One):

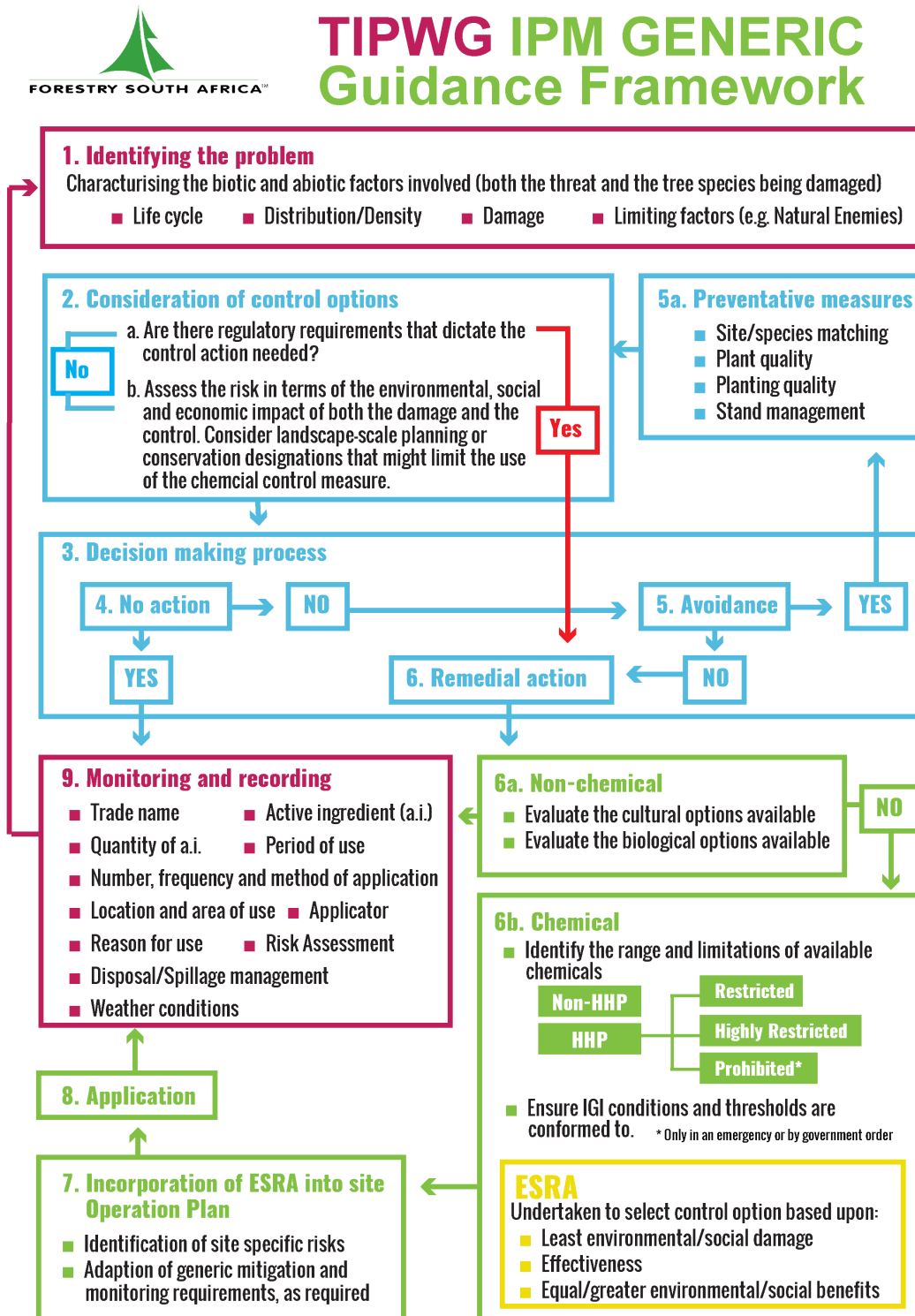
- Identify and quantify the problem (actual or potential).
- Consider the control options (take no action, avoid the problem, take remedial action).
- Consider which remedial action is most suitable.

The Guide also provides a pesticide decision key (Appendix A – Figure Two), which provides a useful framework into which FSC Pesticide Policy and ESRA requirements could be placed. It also provides a Decision Recording Sheet (Appendix A – Figure Three) which again could provide FSA Members with an FSC-approved template to adapt and follow.

TIPWG Integrated Pest Management Generic Framework

The TIPWG Integrated Pest Management Generic Framework, from here on referred to as the TIPWG Framework, follows the same three steps laid out by both the FSC Pesticide Policy and the FSC Guide.

Figure Two: TIPWG IPM Generic Guidance Framework



Step One: Identifying the problem

This stage involves characterising the biotic and abiotic factors involved, both in terms of the threat and the tree species in question. The minimum FSC Pesticide Policy requirements have been laid out in Pink Box One (Figure Two).

Information Required

The FSC Pesticide Policy provides no direction as to where information to fulfil these requirements must be sourced, the FSC Guide provides the following:

“Information pertaining to these should be sourced from best available knowledge, referencing published material and through the use of specialists and those with experience (seeking advice from forest managers with relevant experience or who’ve experienced similar situations).” (FSC Guide, page 10, paragraph six).

Both the FSC Pesticide Policy and FSC Guide discuss the need for **on-going** monitoring and research to fill any knowledge gaps. In accordance with the FSC Pesticide Policy (4.13) *“Organisations may collaborate with research institutions and other organisations on research programmes”*, while this was mentioned in relation to identifying less hazardous alternatives, it should be equally applicable to identifying the problem.

Step Two: Consideration of control options

The TIPWG Framework closely follows the FSC IPM Guide, the only point of difference is that it stops prior to deciding whether a non-chemical or chemical approach should be taken. This is a result of FSC Pesticide Policy and ESRA requirements that have come after the FSC Guide.

Consideration of control options (Blue Box Two, Figure Two)

Legal Obligations: As national legislative requirements supersede FSC requirements, if regulatory requirements dictate a specific control action is required (e.g. remedial action is legally required in the control of Alien Invasive Species or the preparation of Fire Breaks) then the decision-making process is automatically bypassed, and this action selected without the need to evaluate the economic, environmental and social costs of both the problem and the control.

Decision-making process (Blue Box Three, Figure Two)

With problems where there are no legal obligations superseding FSC requirements, Certificate Holders need to demonstrate that an evaluation of both the problem and the control have been undertaken. This should include the economic, environmental and social impacts.

NOTE: The FSC Guide stipulates: *“with familiar problems and situations, once the pest, disease or weed is identified, it may be sufficient to refer to existing guidance or historic management records to evaluate the likely future consequences for the forest if no further action is taken.”* (FSC Guide, page 11, paragraph one).

Preventative measures (Blue Box Five a, Figure Two)

TIPWG Framework views preventative measures as more than simply a solution. It is an ongoing aspect of Standard Operating Practices (SOP) in South African forestry and therefore an evaluation of what is already being undertaken will inform whether preventative measures are a valid option. For example, if a Certificate Holder’s SOP means the preventative measures listed are all being applied then this no longer becomes a viable control option, likewise, if a gap is identified in the current SOP, then implementing this becomes a valid control option.

Step Three: Remedial Action

When considering control methods, both the FSC Pesticide Policy and FSC Guide stipulate that, “*non-chemical control measures should be considered first and only discounted if there is justifiable reason to do so.*” (FSC Guide, page 12, paragraph two).

Non-chemical

No guidance is given as to how non-chemical control methods should be evaluated. They are exempt from ESRA requirements, although this brings into question how any comparative assessment of non-chemical and chemical control measures could be conducted.

Non-chemical control methods mentioned in the FSC Guide and Pesticide Policy include, but are not limited to:

- Cultivation
- Mulches
- Hand weeding
- Sanitation felling
- Natural enemies/biological control

TIPWG Framework suggest using these as the minimum required values for consideration.

The TIPWG Framework therefore does not want to be too prescriptive in this matter, however, we do urge Members that however they do this the conclusion drawn from the evaluation needs to link into the justifying reasons for not selecting a non-chemical control method outlined below.

Justifiable reasons outlined by the FSC Guide (page 12, paragraph two) include:

- Impractical
- Ineffective
- Excessively costly
- Carry this risk of causing more harm to the environment, operators, neighbouring communities and forest users.

NOTE: When chemical control is required, the IPM guide advocates “*a combined approach of non-chemicals and chemicals is preferred, as this lowers the potential risk of relying on the repeat use of a single pesticide.*” (FSC Guide, page 12, paragraph five).

Chemical

The FSC Pesticide Policy and Guide identify the need to determine the range of potential suitable chemicals first. This will be country specific (available under South African Legislation) and then available for use by FSC Certificate Holders (removal of any on the prohibited list).

When comparing the chemical control option, the FSC Guide stipulates that “*consideration of the application method and timing (pattern) is as important as pesticide selection when aiming to minimise the risk of non-target impacts.*” (FSC Guide, page 14, paragraph one).

Any comparison of control methods therefore needs to factor in both the chemicals/active ingredients available but also the method of application and application patterns available.

FSC Pesticide Policy stipulates a minimum list of values for evaluating chemical control option, (FSC Pesticide Policy p41-42). These should form the basis of the evaluation. The FSC Guide directs

certificate holders towards pesticide labels and Safety Data Sheets. These form the basis of the TIPWG ESRA, which can be used to provide the required information.

While the TIPWG Guide does not want to be too prescriptive in how this evaluation should be conducted, TIPWG has produced a comparative template (Figure Three). PLEASE NOTE: As the FSC Pesticide Policy offers no prescribed way of doing this, other than the requirements stated above – FSA Members should not feel obligated to use the FSA template.

Once all the information required to make the comparison is obtained – **Note:** this includes monitoring and mitigation requirements of each - Certificate Holders should identify the options, methods and patterns that are effective, economical but pose the least risk to humans and the environment through the full period of usage.

NOTE: The FSC Guide also states, “*an approach that uses one or more pesticides at optimum timings may prove more effective and have lower risk of negative impacts than relying on a repeated use of a single pesticide.*” (FSC Guide, page 12, paragraph five).

Incorporation into Site Operational Plans

Certificate Holders need to show how “National Level” TIPWG ESRA requirements have been **adapted** and **adopted** into Site Operational Plans. Essentially considering how the Management Unit context (the environmental, social and economic factors specific to that Management Unit) may impact exposure and therefore risk. For example, if the Management Unit contains a conservation area but is in the centre of the plantation and has no nearby neighbours or other forest users accessing the Management Unit, then chemical control methods that minimise the environmental risk would be deemed preferable over those that minimise social impact.

Likewise, when it comes to minimising risk through mitigation steps that reduce Exposure, Scale and Intensity within the Management Unit context need to be applied and the ESRA mitigation steps adapted and adopted appropriately.

Management Units can be grouped so long as the following prevailing conditions remain consistent:

- Site type
- Site location
- Nature of the problem
- Control technology
- Climate

These need to be considered carefully when justifying the grouping of sites under a single ESRA or IPM Framework.

Note: In several places the FSC Guide notes that, “*when dealing with familiar problems/situations it may not always prove necessary to operate every step of the process in detail and complete a record form for every individual operational site*”, stating, “*it may instead be sufficient to use the framework at the commencement of proposed annual control programme to determine the best approach for a group of very similar sites facing the same pest problem.*” (FSC Guide, page nine, paragraph six).

Monitoring and Recording

The FSC Pesticide Policy places greater emphasis on Monitoring and Recording requirements, these must be reflected in the IPM framework.

Monitoring must include

- The impact of the problem.
- The impact of the control method.
- The success of mitigation measures.

Records must include:

- The process and rationale for selecting the control method utilised.
- Specific information about the control option and application methods.

Note: The FSC Guide states, *“it may not always be necessary to use this form (Record Sheet) for every individual control operation. It may instead be sufficient to record the decision process for a group of similar sites at the commencement of a proposed annual control programme assuming no significant change to site, pest or control technology occur during the proposed period of operation.”* (FSC Guide, page 15, paragraph two).

Figure Three: TIPWG’s Comparative Template for Chemical Control Option – where you would have Active Ingredient Y (depicted below) next to Active Ingredients X to Z.

Product’s Trade Name	Product X		
Active Ingredient	Active Ingredient Y		
TIPWG ESRA	ESRA Number		
Application method*	Manual	Mechanical	
	Spot	Boom	Lance
Application pattern*	Single	Single	Double
Soil			
Erosion			
Degradation			
Biota			
Carbon storage			
Water			
Ground water			
Surface waters			
Water supplies			
Non-target species			
Vegetation			
Wildlife			
Bees/pollinators			
Pets			
Non-timber forest products			
Ref FSC STD-01-001 v5-2 Criterion 5.1)			
High conservation values			
HCV 1			
HCV 2			
HVC 3			
HCV 4			

Landscapes			
Aesthetics			
Cumulative impacts			
Ecosystem services			
Water			
Soil			
Carbon sequestration			
Tourism			
High conservation value			
HCV 5			
HCV 6			
Health			
Fertility			
Reproductive health			
Respiratory health			
Dermatologic problems			
Neurologic problems			
Gastrointestinal problems			
Cancer			
Hormonal balance			
Welfare			
Food and water			
Social infrastructure			
Schools and hospitals			
Recreational infrastructure			
Infrastructure adjacent to the MU			
Economic viability			
Agriculture			

Livestock			
Tourism			
Rights			
Legal			
Custodial			

Steps:

1. Check the list of minimum required values and remove any that are not applicable to the site(s) – remembering to justify their removal.
2. Using the TIPWG ESRA as a guide, remove items from the list of minimum required values that are not applicable to the active ingredient – remembering to justify their removal.
3. Using TIPWG ESRA, apply the relevant active ingredient information for each of the remaining minimum required values – bearing in mind any differences that could arise because of **application method** or **application pattern**.
4. Highlight any active ingredient, application method or pattern where the exposure is deemed too high.
5. Prioritise the remaining active ingredients, application methods and patterns based on minimising site-specific risks at a Management Unit level (i.e. prioritising those that pose the lowest aquatic risk in Management Units where water bodies are present but are minimal forest users or neighbours).
6. Finally, select the *“most selective, least hazardous product and application method/pattern to ensure the least risk to human health and non-target organisms. While noting the choice should be consistent with achieving effective control of the pest.”* (FSC Pesticide Policy, page 13, paragraph three).

Appendix A - FSC Guide to Integrated Pest, Disease and Weed Management in FSC Certified Forests and Plantations (2009)

Figure One: FSC Guide Core Decision Key

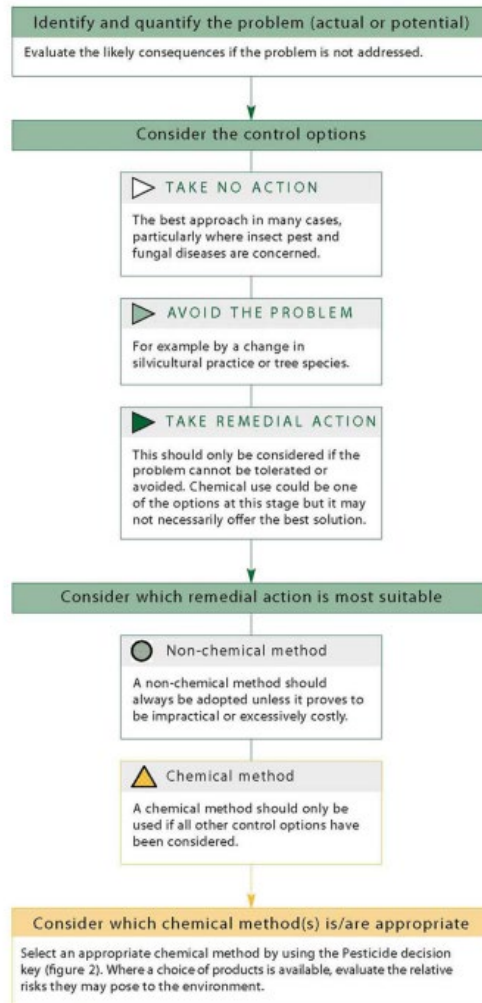


Figure Two: FSC Guide Integrated Pest Management Pesticide Decision Key

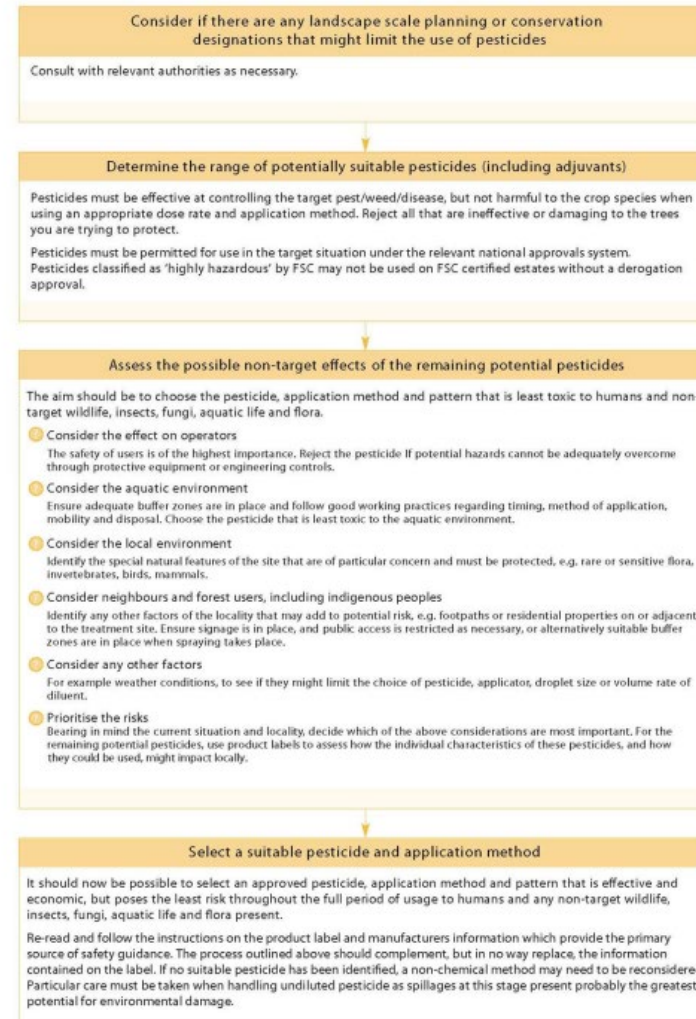


Figure Three: FSC Guide Integrated Pest Management Decision Record

Figure 3: Decision recording sheet Completed by: Date:

Site name: Compartment name/no.:

STAGE 1: use Core decision key

What is the problem and what are the likely consequences if the problem is not addressed?

Which control option is most suitable?

TAKE NO ACTION
 AVOID THE PROBLEM
 TAKE REMEDIAL ACTION(S)

Continue to next step

Tick as appropriate and note reason for choice.

Which remedial action(s) is most suitable?

Non-chemical method(s)
 Chemical method(s)

Continue to Stage 2

Tick as appropriate and note reason for choice. Record why a non-chemical method is unsuitable. Often a combination of methods will be the most appropriate solution.

STAGE 2: use Pesticide decision key

Which chemical method(s) is most suitable?

Note reason for choice.

If no suitable pesticide can be identified, a non-chemical method may need to be reconsidered.

Archive this sheet in a safe place for future reference.