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BEYOND COMPLIANCE GLOBAL ROLLING OUT SYSTEMS APPROACH GLOBALLY

# Decision Support for Systems Approach (DSSA) Manual

Jan 2021/version 1.1





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Acronyms used in this manual are:

BCG	Beyond Compliance Global, project name (see acknowledgements)
CP	control point within a Systems Approach
DSSA	Decision Support for Systems Approach
FAO	Food and Agriculture Organization of the United Nations
ISPM	International Standards for Phytosanitary Measures
IPPC	International Plant Protection Convention
NPPO	National Plant Protection Organization
PRA	Pest Risk Analysis
VBA	Visual Basic for Applications macros in Excel

# Decision Support for Systems Approach (DSSA) - Manual

## Overview

In accordance with the International Standard for Phytosanitary Measures (ISPM) 2<sup>1</sup>, Pest Risk Analysis (PRA) consists of three stages: Initiating the PRA process by scoping the pest or pathway; pest risk assessment to determine the individual pest's threat in terms of entry, establishment, spread and economic importance; and pest risk management, in which options for reducing the import risk are identified and selected in order to reach a level acceptable to the importing country. These decisions are generally made by the National Plant Protection Organization (NPPO) as the key authority for plant health in each country. A Decision Support for Systems Approach (DSSA) tool has been developed to allow users in importing or exporting countries to transparently identify, potential options for pest risk management that could help with the formulation of pest risk management plans. Specifically, the DSSA supports evaluation and development of a Systems Approach to pest risk management, as defined in ISPM 14.

The purpose of this DSSA tool is to highlight issues that may impact risk management, drawing from the PRA, and show management options in a clear fashion. Users are asked for additional information to add to the compiled case data, regarding efficacy and uncertainty as well as more details on measures. Expert judgement will normally suffice to complete these questions. By representing expert judgment as a distribution for some key variables, new data is generated by the tool. It should make the selection of pest risk management options more transparent and could assist in filling in related questions in the importing country's PRA (section on risk). Equally, it can be used to organise data for a request from the exporting country for recognition of equivalence of alternative measures and to improve understanding of the cumulative effect of combined measures.

Further background and discussion on the rationale of this tool and other aspects of the Beyond Compliance approach is presented in Quinlan *et al.* (2018). The name of the project was chosen to encourage those who have accepted any imposed risk management plan (without feeling able to negotiate) to gain confidence in questioning redundant measures and be able to propose equivalent ones, so that their country is not only complying but also going beyond compliance to a stance with a more equitable role in preventing the spread of pests.

This manual was prepared by the Beyond Compliance Global team to support use of the DSSA. A small, global cadre of plant health experts has been trained in its use. Facilitators for its application may be requested through the IPPC Secretariat.

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<sup>1</sup> The main references to consult to understand the DSSA are:

**ISPM 2.** 2019. *Framework for pest risk analysis*. Rome, IPPC Secretariat, FAO.

**ISPM 14.** 2019. *The use of integrated measures in a systems approach for pest risk management*. Rome, IPPC Secretariat, FAO.

Quinlan M., Mengerson K., Holt J., Leach A., Mumford J., Murphy R. (eds). (2016). *Beyond Compliance: a production chain framework for plant health risk management in trade*. eBook Chartridge Books, Oxford, UK. Available at: [https://standardsfacility.org/sites/default/files/Beyond\\_Compliance\\_eBook.pdf](https://standardsfacility.org/sites/default/files/Beyond_Compliance_eBook.pdf)

## Opening and Saving the DSSA file

The DSSA uses a Microsoft Windows Excel™ platform. It should operate on any Excel version 2010 or more recent, for a Windows Personal Computer (PC) and in English, French, Spanish and Chinese versions.

The DSSA tool is an Excel-based tool that uses Visual Basic for Applications (VBA) macros. You may need to edit your Excel settings to allow it to open the file with full functionality. To do this:

1. Launch Excel and click File|Options
2. In the Excel Options panel click on “Trust Center” in the left-hand list and in the opened panel click on the button labelled “Trust Center Settings...”
3. In the “Trust Center” panel click on ActiveX Settings and choose the third option labelled “Prompt me before enabling all controls with minimal restrictions” and click OK

To open the file:

1. Launch Excel on your laptop or Windows Personal Computer (PC) and use File|Open to open the “BCG DSSA Tool yyyyymmdd - Template file.xlsx” in folder “X:\XXXXXX\”
2. Click File|Save As and save the file to your local drive in a suitably named folder e.g. “C:\BCG DSSA Tool”.
3. To keep that file as your master template, resave the file under a new name, e.g. “BCG DSSA Tool yyyyymmdd – [Commodity] from [Country] to [Country] for [Pest]”, and this will be the version to enter the specific information for your trade case.
4. When saving the DSSA (and BCG related files in general), follow the file-naming protocol suggested in Appendix 1

It is very important to regularly save the file as it is being completed to prevent the loss of information (and its concomitant time and effort) in the event of unexpected computer or application error. See Appendix 1 for guidelines about iterative file naming.

## Conventions

1. Throughout the tool, only cells shaded pale blue can be added to or edited, all other cells are locked to prevent accidental overwriting.
2. Any cells with a red triangle in their corners contain comments that provide additional information that may be useful to the user. These can be read by floating the Excel cursor over the relevant cell.
3. In this manual the words “worksheet”, “sheet” and “page” are used synonymously and refer to worksheets/pages within the DSSA tool.

## Main

### Overview

The “Main” worksheet allows users to navigate to all the principle pages of the DSSA by means of macro driven buttons (Fig. 1). All the worksheets in the tool have a “Back to Main” button that allows the user to return to this page to enable quick and easy navigation to other worksheets in the DSSA. Its other chief purpose is to enable the user to choose between an Export or Import versions of the tool.

## Beyond Compliance Global - Decision Support for Systems Approach (DSSA)

Complete Part A to define the Crop, Pest and Trading Countries

Version date: 15/10/2019

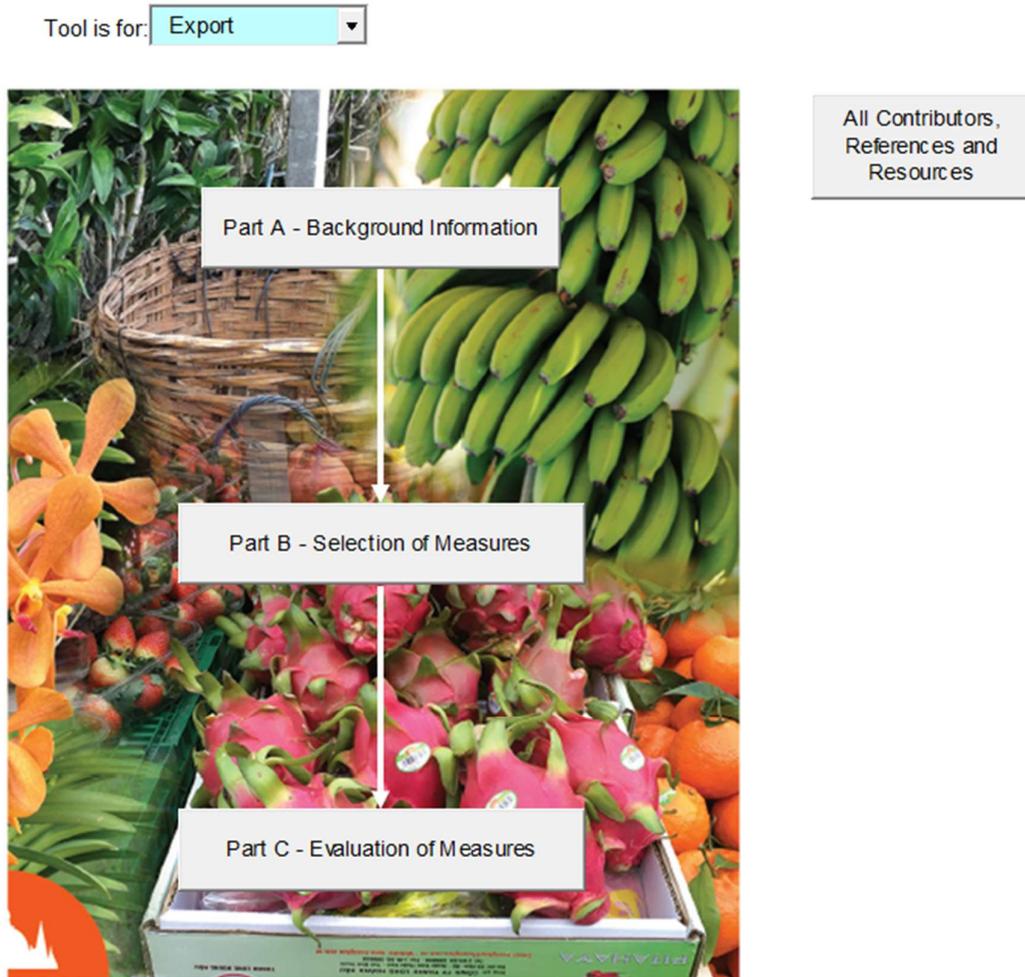


Figure 1. Screenshot of the “Main” worksheet

### “Tool is for: Export/Import” dropdown box

This dropdown box allows the user to choose whether the Systems Approach explored in this file is presented from an Exporter’s or an Importer’s perspective. The information for export and import perspectives is entered on different worksheets within the DSSA so a single file can be used to house both sets of information, if required.

*“All Contributors, References and Resources” button*

Click on this button to go to the worksheet in which it is possible to add, edit or view who contributed to each part of the DSSA and what information was used. See the “Contributors, References and Resources” in the “Additional sheets” section towards the end of this document for more information on data entry for that worksheet.

*“Part A – Background information” button*

Select this button to navigate to the “Part A” worksheet in which relevant background information regarding the Systems Approach case must be added. If the “Export” option in the “Tool is for:” dropdown is selected the user is taken to the “Part A – Export” page that requires background information for developing systems approach for export commodity/pathway; an identical worksheet is presented if the “Import” option is selected on the dropdown but information required is strictly for import commodity/pathway.

*“Part B – Selection of Measures” button*

This button navigates the user to the “Part B” worksheet in which measures to be considered for the Systems Approach can be added and then short listed. If the “Export” option in the “Tool is for:” dropdown is selected the user is taken to the “Part B – Export” page. This page requires the user to input and select all the possible measures that should be applied while developing a systems approach for export; if the “Import” option is selected then the “Part B – Import” worksheet will be opened.

*“Part C – Evaluation of Measures” button*

This button navigates the user to the “Part C” worksheet in which the measures shortlisted in Part B can be evaluated to elicit and analyse the performance of individual measures and the expected result of the systems approach. As indicated in part A and part B above, if the “Export” option in the “Tool is for:” dropdown is selected the user is taken to the “Part C – Export” page; if the “Import” option is selected then the “Part C – Import” worksheet will be opened.

*Cell B2 explanation*

Before any data is added to either the “Part A – Export” or “Part B – Import” worksheets, cell B2 will read “Complete Part A to define the Crop, Pest and Trading Countries”. Once the cells D7, D9, D10 and D11 of Part A are completed, the name of the commodity, the exporting country, the importing country and the regulated pest(s) will be shown in this cell.

## Part A Export and/or Import

### Overview

This worksheet provides important background information relevant to the case described in the file. This information is entered into two tables (A1 and A2)<sup>2</sup>. The inputs required are a mixture of free-text and selections from drop-down boxes. Currently, the Part A worksheets for Import and/or Export are identical; with time and use it may become necessary for the “Part A – Export” and “Part A – Import” pages to diverge to reflect the different information required for each.

## Beyond Compliance Global - Decision Support for Systems Approach (DSSA)

Part A: Background information for developing a Systems Approach

EXPORT VERSION

Contributors, References and Resources

TABLE A1. Basic information	
A.1.01	Identify the commodity or pathway addressed by this management plan
A.1.02	Intended use of the commodity/pathway
A.1.03	Original exporting country (country of origin)
A.1.04	Importing country/countries
A.1.05	Regulated pest(s) identified by the importing country that is/are addressed in this management plan
A.1.06	Means of entry considered in the PRA (Commercial trade [air, sea, land, post]; Informal trade; Natural spread ...)
A.1.07	Declared means of transport covered in this management plan
A.1.08	What part of the importing country is covered by this plan? (Entire country or a defined area?)
A.1.09	Key host plants in the area covered by this plan
A.1.10	Does the PRA indicate a specific time period for the pest risk assessed?
A.1.11	Describe any restriction on the production area for export (see dropdown menu).
A.1.12	Is there useful information from similar existing trade?
A.1.13	What is the initiating driver for this plan?

Figure 2. Screenshot of the top part of Part A worksheet including Table A1. Note that cells with red triangles in their top-right hand corners contain clarifying comments that can be read by floating the Excel cursor over them. See also Figure 15 in Appendix 1 for a completed version of this table for a hypothetical example.

<sup>2</sup> Some data in this section, for example PRA information, can be pre-loaded by the facilitator to save time during the elicitation. If this is done, the facilitator must allow the stakeholders to read through any pre-loaded information and discuss, edit, add or remove any preloaded inputs.

*“Contributors, References and Resources” button*

Click here to go to the worksheet that allows the user to list personnel that have contributed to the “Part A” worksheet and to add references to documents and online resources that were used to complete it (Figure 2). See the “Contributors, References and Resources” section towards the end of this document for more information on data entry for that worksheet.

*“Back to Main” button*

This button hides the current worksheet (no information is lost) and takes the user back to the Main worksheet (Figure 2). To unhide this worksheet it is necessary to click on the “Part A – Background information” button on the “Main” page.

*“Part B – Selection of Measures” button*

Use this button to navigate to the Part B worksheet (Main page, shown in Figure 1) once Part A is complete (Figure 2). Unlike the “Back to Main” button, clicking this button does not hide the Part A worksheet

*“Table A1. Basic information”*

This table is a list of 13 questions and cells for required responses to give important background information about the case being described in this DSSA file (Figure 2). Questions A1.01 to A1.09 require free-text inputs while questions A1.10 to A1.13 take the form of dropdown boxes that constrain the user’s responses to a list of options. Additional comments, to clarify the information required, can be read by floating the Excel cursor over any cells containing a red triangle in their top-right corners.

*“Table A2. Key factors to consider based on the proposed commodity/pathway”*

This table contains nine questions relating to a Pest Risk Analysis (PRA) of the pest in question (Figure 3). Where a PRA is not available then questions A2.01 to A2.04 may be left blank though expert judgement could also be used to complete these questions. The Comment cells of this table can be used to explain any responses and could point to resources and references used in the “Contributors, References and Resources” worksheet accessible at the top of the Part A page (Figure 2). Questions A2.05 to A2.07 are dropdown boxes and the others require free-text inputs.

The final row of the Table A.2 requires a conclusion to be drawn on all key factors relating to pest risk management measures.

TABLE A2. Key factors to consider based on the proposed commodity / pathway			
Key Factors	Rating	Uncertainty	Comment
A2.01	Rating - Entry		
A2.02	Rating - Establishment		
A2.03	Rating - Spread		
A2.04	Rating - Impact		
Description		Comment	
A2.05	How easy is it to detect the key organism(s) on the commodity / pathway? For example can you recognise the symptoms or signs on the sample?		
A2.06	How easy is it to identify the key organism(s)? For example, is there an available, reliable, accurate technique that has been agreed?		
A2.07	How well organised is the sector at risk in the importing country?		
A2.08	Is there a way (current, feasible measures) to control or eradicate the regulated pest if it were to enter the importing country?		
A2.09	Are there mechanisms to help put in place measures across the sector?		
A2. Conclusions on key factors relating to risk management measures:			

Figure 3. Screenshot of the bottom part of Part A worksheet including Table A2. Note that cells with red triangles in their top-right hand corners contain clarifying comments that can be read by floating the Excel cursor over them. See also Figure 16 in Appendix 1 for a completed version of this table for a hypothetical example.

## **Part B Export and/or Import**

### *Overview*

In this worksheet, three tables are presented. The first requires the user to list all the possible measures<sup>3</sup> for developing a Systems Approach along a production chain. The second requires the user to shortlist those measures for more detailed evaluation in Part C. The third table is the short list of measures presented as a column to which the user must add the Objective of each measure.

### *“Contributors, References and Resources” button*

Click here to go to the worksheet that allows the user to list personnel that have contributed to the “Part B” worksheet and to add references to documents and online resources that were used to complete (Figure 4) it. See the “Contributors, References and Resources” section towards the end of this document for more information on data entry for that worksheet.

### *“Back To Main” button*

This button hides the current worksheet (no information is lost) and takes the user back to the Main worksheet (Figure 4). To unhide this worksheet it is necessary to click on the “Part B – Selection of Measures” button on the “Main” page.

### *“Back to Part A” button*

Clicking this button allows the user to navigate back to the Part A worksheet (Figure 4). Unlike the “Back to Main” button, clicking this button does not hide the Part B worksheet.

### *“Part C – Evaluation of Measures” button*

Use this button to navigate to the Part C worksheet when Part B is complete (Figure 4). Clicking this button does not hide the Part B worksheet

### *Table B1. List of all possible measures that could be used in the production chain*

Information for input in this table could be collected from stakeholder interviews, meetings and workshops that include growers, other industry members and NPPO personnel (Figure 4). The purpose is to include all measures that could feasibly be used in a Systems Approach at each of the points in the production chain. This list can be discussed and then shortlisted in the following table (B2) into the measures that will actually be included in the suggested Systems Approach. Data input takes the form of free text.

### *Table B2. Table of shortlisted measures for evaluation in the DSSA*

The data listed in Table B1 is available in dropdown boxes within Table B2 (Figure 4). Measures can be included by selecting the measure from the list provided in the dropdown box which is shown when the cell is selected.

### *“Number of all measures in Table B1” text explanation*

Cells D48:E48 show how many measures have been listed in Table B1.

---

<sup>3</sup> Some data in this section, for well-established known measures, can be pre-loaded to Table B1 by the facilitator to save time during the elicitation. If this is done the facilitator must allow the stakeholders to read through any pre-loaded information and discuss, edit, add or remove any preloaded inputs.

*“Number of all shortlisted measures in Table B2” text explanation*

Cells D49:E49 provides the user(s) with information about how many measures have been included in table B2. This is important because the system only permits the use of a maximum of 20 measures in a systems approach. If the 20 measures maximum is exceeded, then the following note is displayed in cell F48: “The max no.[number] of measures that can be evaluated in the DSSA = 20. Reduce the number of measures by collapsing related measures in Table B1 and reselecting them in Table B2. For example, do not list individual pesticides but aggregate them into a single term like 'Pesticide regime' that can be described in detail in the Comments box for that measure in Part C.”.

*“When you have selected the measures for evaluation (max=20) CLICK here to make a list that will be read into Table C1 and C2 of Part C.” button.*

This button runs a macro that makes a list of all the measures in order along the production chain which are then automatically loaded into Tables C1 and C2 of the Part C worksheet.

**WARNING NOTE ABOUT THIS MACRO BUTTON**

It is very important that the shortlist in Table B2 is complete before running this *macro*. Any data entered on Sheet C is deleted when re-running this macro which may mean that time and effort could be lost if new measures are added to Table B1 and B2 retrospectively. If the *macro* detects that data is present on Sheet C, it will warn the user with the following message:

“There are 'X' data entries on Part C. This information will be deleted when you re-run this *macro*. If this is OK then click 'Yes' to proceed and the data can be erased. If you do not wish to lose this data click 'No' and save the file with an appropriate name. If necessary, this saved file can be used as a reference for repopulating Part C in the new version of the file”

**If you find it necessary to add new measures after Part C has been already filled-out, then save this version BEFORE running the macro. Once it is saved then rename the file with a new iteration of the filename, for example if the filename was appended with the date “YYYYMMDD a” then call the new file “YYYYMMDD b” (see Appendix A for file naming guidelines). Add the new measure(s) to Table B1 then select all the required measures in Table B2. Carefully check that all the measures have been added then run the macro again. Use a printout of Part C of the previous version of the file so that any previously data can be quickly re-added to Part C before adding data for the new measures.**

*Table B3. Add objectives of each measure*

When the macro has finished running, the list of measures shortlisted in Table B2 are presented in Table B3 in the first column of a two-column table (Figure 5). The user should add the objective of each measure in the second column by selecting them from the proposed options in the Objective drop down box. From the options presented, select the objective that best describes the primary objective of the measure. Sometimes measures have multiple objectives such as trapping, e.g. for monitoring and for pest reduction, choose the option that most closely matches the *primary* objective of the measure. If the user wishes to add an objective that is not included in the dropdown-list then this can be typed as custom text. **Note: the objective should be specific to the individual measure and not the objective of the entire Systems Approach!**





## Part C Export and/or Import

### Overview

In Part C, each of the shortlisted measures and their objectives from Table B3 can be evaluated for their performance in six different indicator dimensions. The indicators are:

- 1. Contribution to pest risk reduction of infestation in exported consignment**  
This is the maximum achievable effect under ideal conditions
- 2. Implementation standard**  
In practical use the maximum contribution to risk reduction cannot always be achieved because of implementation constraints or natural variation under field conditions.
- 3. Ability to verify effect of measures to that Control Point (CP)**  
This indicator concerns the ease/effectiveness that the Control Point measure has to inform subsequent management actions.
- 4. Producer acceptability**  
Ease of use, direct cost, labour required, independence from area-wide implementation, etc.
- 5. Sector acceptability**  
Includes industry (excluding producers), technology developers and policy/regulatory bodies. Industry includes packers, processors, wholesalers, retailers and commodity transporters.
- 6. Societal acceptability**  
Includes consumers, general public, Non-Governmental Organisations (e.g. environmental advocacy groups) and other bodies not included in the "producer" or "sector" categories.

Evaluation of the measures in each indicator dimension must be added by experts. The main criteria for the selection of experts (to provide inputs into this page) should include: 1) an extensive knowledge of local agronomy of the crop and specific knowledge of pest management in the region in which a Systems Approach is intended, 2) detailed knowledge of the performance of current and novel measures. The ratings and associated uncertainty should be based on their personal experience and, where possible, evidence from referenceable scientific documents.

Expert ratings are based on a five-point scale (Very low, Low, Medium, High and Very high) which reflects the contribution the measure has in relation to risks associated with that indicator; so a "Very low" rating reflects a very low contribution of the measure in that indicator (poor performance) whereas "very high" indicates a very high contribution (good performance) of the measure in relation for that indicator.

The expert is also expected to express their uncertainty in the rating they have provided. The uncertainty score is expressed on a four-point scale (Very low, Low, Medium and High). The definitions of uncertainty broadly follow internationally recognized guidelines from other sectors (e.g. IPCC, 2010)<sup>4</sup> and indicate the proportion of the actual distribution that will be in the expert's selected rating (Table 1). The system converts the rating and uncertainty scores into a discretised Beta distribution following these rules (see examples in Figure 6).

---

<sup>4</sup> IPCC (Intergovernmental Panel on Climate Change), 2010. Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties. IPCC Cross-Working Group Meeting on Consistent Treatment of Uncertainties, Jasper Ridge, CA, USA. 6-7 July 2010

Table 1. Uncertainty score definitions.

Uncertainty score	% of distribution in expert's selected rating
Very low	90%
Low	80%
Medium	50%
High	35%

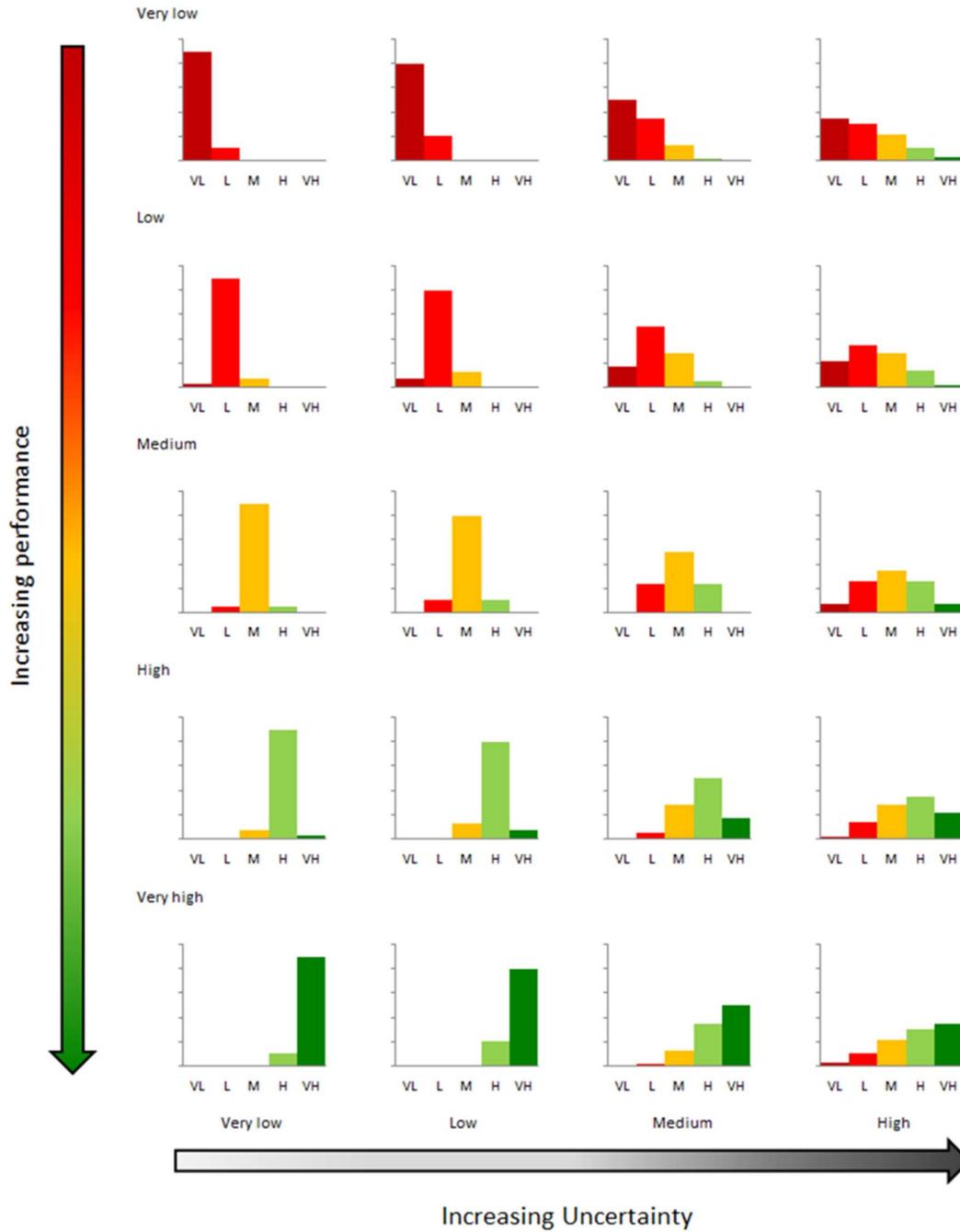


Figure 6. Discrete Beta distributions of all twenty combinations of five ratings combined with four uncertainty scores.

At the beginning of each elicitation exercise, the rating and uncertainty score definitions must be clearly explained before each elicitation and regularly reviewed during the exercise to ensure that the experts are mindful of the definitions and implications of their uncertainty choices. Ratings and uncertainty scores should be assigned for each measure separately, independent of other measures. Any potential interactions between measures should be reflected in the uncertainty associated with these measures.

Once the measures are evaluated in Table C1 and C2, the required measures can be assembled into a final systems approach in Table C3 and assessed as a whole in Table C4.

*“Contributors, References and Resources” button*

Click here to go to the worksheet that allows the user to list personnel that have contributed to the “Part C” worksheet and to add references to documents and online resources that were used to complete it (Figure 7). See the “Contributors, References and Resources” section towards the end of this document for more information on data entry for that worksheet.

*“Back to Main” button*

This button hides the current worksheet (no information is lost) and takes the user back to the Main worksheet (Figure 7). To unhide this worksheet it is necessary to click on the “Part C – Evaluation of Measures” button on the “Main” page.

*“Back to Part B – Selection of Measures” button*

Clicking this button allows the user to navigate back to the Part B worksheet (Figure 7). Unlike the “Back to Main” button, clicking this button does not hide the Part C worksheet

*“Part C – Additional Comments” button*

It may be necessary to add further, more detailed information about the expert’s ratings and uncertainties or any caveats that may be relevant to the elicited responses. This can be done by navigating to the “Part C - Additional Comments” worksheet by clicking on this button (Figure 7). A fuller description of this worksheet is provided towards the end of this document in the “Additional Sheets” section.

*Table C1. Indicators of Measures*

In Column B of this table is the list of all the shortlisted measures from Table B2; these only appear once the button “When you have selected the measures ... of Part C.” button on the Part B worksheet has been activated (see Fig. 4). Table C1 takes information for the first two indicators; the other four indicators are covered in Table C2.

Columns C:E regard the first indicator “Contribution to pest risk reduction of infestation in the exported<sup>5</sup> consignment”. The ‘Rating’ column and the ‘Uncertainty’ column of this table are dropdown lists that are available from the down arrow when the cell is selected. When the user has entered a rating and an uncertainty score for that measure in this indicator then the graphic is shown in column E giving a visualisation of the combined rating/uncertainty in the form of a discrete probability distribution. **IMPORTANT: Only those measures that have a pest risk reduction action**

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<sup>5</sup> In the ‘Part C – Importing’ worksheet this is ‘Imported’ consignment

should be rated here. Some measures, such as monitoring, do not usually have a risk reduction impact and should not be rated here and those cells should be left blank. Measures that act as a verification of the effect of measures at a Control Point should be rated in column C:D of Table C2. For some monitoring methods there is a (small) impact on pest populations, for example blue sticky traps for *Thrips* in protected crops, in which case a rating and an uncertainty score can be added here as well as in the 'Ability to verify effect of measures to that CP' indicator of Table C2 (see example in Appendix 1, Figures 20 and 21).

The same method is used for 'Implementation standard' in columns F:H. See the 'Overview' above for a description of the rating, uncertainty and graphics used in Tables C1 and C2.

In Column I:J the user can describe any positive or negative interactions that this measure may have with other measures short listed for the Systems Approach. For example, insecticide applications may have negative interactions with Sterile Insect Technique or Biocontrol programmes; in which case the expert can specify any actions that should be taken to mitigate negative interactions by for example, timing of applications and/or the use of softer/more selective plant protection products.

In the cells in Columns K:L the expert can add any general comments. Additionally, more detailed comments about the selection of ratings and uncertainties can be added to the blue boxes in 'Part C – Additional Comments' worksheet accessible by clicking the button at the top of the Part C page. A fuller description of this worksheet is provided towards the end of this document in the "Additional Sheets" section.

Note that the Objective of each measure is automatically brought through to Column H of Table C1 from Table B3 in the Part B worksheet.

#### *Table C2 Indicators of Measures*

Table C2 broadly follows the format of Table C1 requiring the expert to provide ratings and uncertainty scores for the four remaining indicators: 'Ability to verify effect of measures to that CP', 'Producer acceptability', 'Sector acceptability' and 'Societal acceptability' (Figure 8). Any comments required to explain expert selections or caveats (a warning or proviso of specific stipulations, conditions, or limitations) to those can be added to the blue boxes in 'Part C – Additional Comments' worksheet accessible by clicking the button at the top of the Part C page.

**Important: In the "Ability to verify effect of measures to that CP" indicator (in columns C:D of Table C2), only those measures that are relevant should be rated. Pure risk reduction measures, for example pesticide applications or cultural controls, should be left blank as they do not contribute to the verification of the effect.**

#### *Table C3. Assemble Systems Approach measures*

In Table C3 the expert(s) can compile those measures that, following evaluation in Tables C1 and C2, will be included in the proposed Systems Approach. This table can be filled by using the dropdown menus accessible by clicking the down arrow in each selected cell (Figure 9). As each measure is selected, the objective of the measure and the ratings and uncertainty for each measure in each indicator are automatically loaded into the table below each selected measure. This to aid the user in

assessing how all the measures may combine to perform collectively in a Systems Approach. The overall performance should be entered in Table C4 described below.

*Table C4. Expected overall performance of the Systems Approach plan*

This table allows the expert(s) to rate the overall expected performance of the proposed Systems Approach using the rating and uncertainty methods described above. The summary of each individual measure provided in rows 68:79 of Table C3 will be helpful in discussion related to the expected overall performance of the proposed Systems Approach. Comments to justify ratings can be written in columns F:G of Table C4 and in the blue boxes in 'Part C – Additional Comments' worksheet accessible by clicking the button at the top of the Part C page (Figure 10).

# Beyond Compliance Global - Decision Support for Systems Approach (DSSA)

## Part C: Evaluation of measures for developing a Systems Approach

EXPORT VERSION

Contributors, References and Resources

Back To Main

Back to Part B - Selection of Measures

Part C - Additional Comments

TABLE C1. Indicators of Measures (Pest risk reduction and Implementation standard)							Optional comments		
Systems Approach measures available (from Part B)	Contribution to pest risk reduction of infestation in exported consignment			Implementation standard			Interactions with other measures	Any additional comments	Objective of measure
	Maximum contribution to pest risk reduction achievable by the measure is:			Implementation standard of the measure in the field is:					
	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic			
i									
ii									
iii									
iv									
v									
vi									

Figure 7. Screenshot of the top section of the Part C worksheet including the first six rows (of 20) of Table C1. See also Figure 20 in Appendix 1 for a completed version of this table for a hypothetical example.

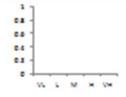
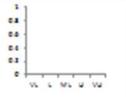
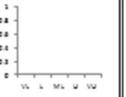
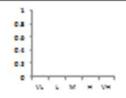
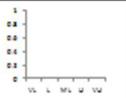
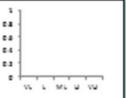
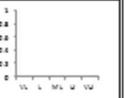
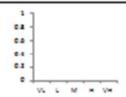
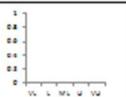
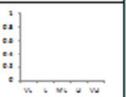
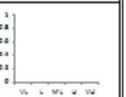
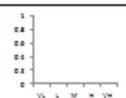
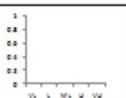
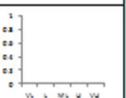
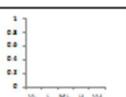
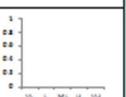
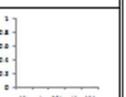
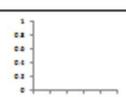
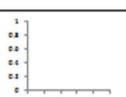
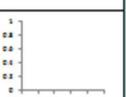
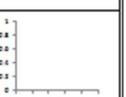
TABLE C2. Indicators of Measures (Ability to verify effect of measures to that CP, Producer Acceptability, Sector acceptability, Societal acceptability)												
Systems Approach measures available (from Part B)	Ability to verify effect of measures to that CP			Producer acceptability			Sector acceptability			Societal acceptability		
	Ability to use the Control Point to adjust system is:			Acceptability of the measure to producers is:			Acceptability of the measure to the sector is:			Acceptability of the measure to society is:		
	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic
i												
ii												
iii												
iv												
v												
vi												

Figure 8. Partial screenshot of the Table C2 showing the first six rows (of 20). See also Figure 21 in Appendix 1 for a completed version of this table for a hypothetical example.

TABLE C3. Assemble SA measures												
Reference name of proposed SA packages		Measure 1	Measure 2	Measure 3	Measure 4	Measure 5	Measure 6	Measure 7	Measure 8	Measure 9	Measure 10	
<b>SYSTEMS APPROACH</b>												
Objective		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
Indicator	Contribution to pest risk reduction of infestation in imported consignment	Rating:	#N/A									
		Uncertainty:	#N/A									
	Implementation standard	Rating:	#N/A	#N/A								
		Uncertainty:	#N/A	#N/A								
	Ability to verify effect of measures to that CP	Rating:	#N/A	#N/A								
		Uncertainty:	#N/A	#N/A								
	Producer acceptability	Rating:	#N/A	#N/A								
		Uncertainty:	#N/A	#N/A								
	Sector acceptability	Rating:	#N/A	#N/A								
		Uncertainty:	#N/A	#N/A								
	Societal acceptability	Rating:	#N/A	#N/A								
		Uncertainty:	#N/A	#N/A								

Figure 9. Partial screenshot of Table C3 (showing only 10 of the 20 potential measures available). See also Figure 22 in Appendix 1 for a completed version of this table for a hypothetical example.

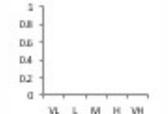
TABLE C4. Expected overall performance of SA				
SA package	Rate the expected overall performance of the SA			Any additional comments
	Rating	Uncertainty	Graphic	
SYSTEMS APPROACH				

Figure 10. Screenshot of Table C4. See also Figure 23 in Appendix 1 for a completed version of this table for a hypothetical example.

## **Additional Sheets**

### *Contributors, References and Resources*

This worksheet allows users to document who has contributed to each section of the DSSA and to provide references and online (and other) resources relevant to each worksheet (Figure 11). The entire list of all contributors, references and resources for the file is visible from the 'Main' worksheet; however, when the button is activated from Part A, B and C worksheets, only information relevant to that worksheet is shown. In the case where stakeholder meetings are used to elicit information then use the Comment field to specify the place and date of the meeting

This worksheet is self-explanatory. Only 'Stakeholder type' is constrained to a list selectable from a dropdown box, all the others are free-text.

It may be the case that there is not enough space to include all contributors, references and resources for each section. If this is the case, then simply add more information to each cell. For example, if multiple meetings are held to elicit information for Part C and each meeting was attended by multiple stakeholders then add all the stakeholders present at each meeting to the Names cell. For the other fields (Job description and Institute/Body/Company) add information to these boxes respectively to the names added to the Name box. The Stakeholder type box is constrained to a drop down list so for situations in which multiple names are added to a single record then, alongside the place and date of the meeting, put the stakeholder types in the Comment box respectively to the names provided in the Names field.

### *Part C – Add Comms Export and/or Import*

For the Part C worksheets, the user can activate on a button on the top of the page to navigate to the Additional Comments worksheet (Figure 12). The worksheet takes the form of a facsimile of the Part C page and contains all the data entered on Part C up to that point. The main difference is that the cells where the graphic was situated (for each measure in each indicator) is removed and a place for additional Comments is made in its place, as indicated by light-blue input cells.

Any explanations or caveats for the rating and uncertainty score choice made by the expert(s) can be added here. Any references and resources cited in these cells should also be added to the 'Contributors, References and Resources' worksheet.

## Contributors, References and Resources

Facilitator Name(s):

National Co-ordinator for case:

Date of meeting:

Place of meeting:

Back to Last Worksheet

### Part C - Export Version

#### Contributors

Name	Job description/Role	Institute/Body/Company	Stakeholder type	Comment

#### References (Scientific literature, PRAs, grey literature, etc.)

Full Reference	Short name (used in the Tool)	URL/doi	Comment

#### Additional Resources (web sites, tools, personal communication, elicitations, etc.)

Description	Short name (used in the Tool)	URL/doi	Comment

Figure 11. Example screen shot of the 'Contributors, References and Resources' worksheet for the 'Part C – Exporting' worksheet.

**Beyond Compliance Global - Decision Support for Systems Approach (DSSA)**

Part C Comments: Evaluation of measures for developing a Systems Approach

**IMPORT VERSION**

Back to Part C - Comparison of measures

TABLE C1. Indicators of Measures (Pest risk reduction and Implementation standard)							Optional comments		
Systems Approach measures available (from Part B)	Contribution to pest risk reduction of infestation in exported consignment			Implementation standard			Interactions with other measures	Any additional comments	Objective of measure
	Maximum contribution to pest risk reduction achievable by the measure is:			Implementation standard of the measure in the field is:					
	Rating	Uncertainty	Comment	Rating	Uncertainty	Comment			
i									
ii									
iii									
iv									
v									

Figure 12. Example partial screen shot of the 'Part C – Add Comms Importing' worksheet for the 'Part C – Importing' worksheet.

## Using the DSSA

### *Scope*

The Beyond Compliance Global Project's Decision Support for Systems Approach (DSSA) is a tool to collate, elicit and visualise available information about pest-crop systems that could introduce or spread regulated pests through international trade. It was developed to support the more complex pest risk management plans that rely on more than one independent measure to achieve the required risk reduction, but it can be used to consider a management plan that is not a Systems Approach. As explained in the manual, the tool can be set for export or import examples. Some considerations are interactive, and others are simply highlighted by questions, to alert the user to these factors that could change management choices (Section A aims).

The tool has been tested for horticultural trade examples including cut flowers, with associated arthropod and pathogen pests. It is not worded to accommodate plants for planting that could become invasive, or some other non-horticultural pathways, although the concepts would be similar.

The tool has to be 're-run' for each pest-crop system, or at least by the type of pest. For example, it may be possible to consider measures against a group of surface feeders, fruit flies or other groups with similar behaviour but there are variations in the biology and the resistance of different species to various treatments or conditions, or of host status of different varieties of the same crop, so one should be careful trying to extend a single run of the DSSA too far. On the other hand, if one applied the tool to the primary pest concern, it will be easy to see whether the resulting system or plan would be effective against other secondary pests as well.

### *Data required*

The tool allows entry of information from a variety of sources, with varying confidence or reliability (shown as certainty) and with a consistent structure that can be compared with other cases or updated as new information is obtained.

Published, peer reviewed research results could be used for one question, such as efficacy, while the same source of data may say nothing about feasibility. Information taken directly from a PRA can be considered along with other sources. Expert judgement will normally suffice to answer these questions. Producers may have a better idea of what works in the field than researchers. Representing expert judgement for some key variables as a distribution (rather than a single value such as a mean or average) means new data are generated. This representation of variations in data or opinion can improve understanding and communication even further. This aspect may be used in market access negotiations if there is disagreement on the value entered. Using a framework means that it is a matter of minutes to show whether differing opinions alter the outcome significantly. That said, this is a simple tool without the level of precision and relational influences that could be seen in more sophisticated tools such as by building a Bayesian Network.

In addition to publications or expert knowledge, information elicited in the Beyond Compliance Global Production Chain tool and/or with a broader range of stakeholders can provide a shortlist of measures whose efficacy and feasibility can be semi-quantified from these various data sources and added to the DSSA to design and evaluate a system.

The tool requires each management measure to be rated in two dimensions: (i) on five-point scales of efficacy and feasibility, and (ii) by a four-point scale of the uncertainty that the expert has in assigning those ratings to each measure. Separating these indicators prevents the participant from altering scores inconsistently when uncertainty is present. Visualisation of the resulting distributions (as a histogram) for the efficacy and feasibility ratings and associated uncertainty scores allows users to

check that the distributions derived from the inputs match their internal perceptions. Users can add explanatory comments and citations of relevant references.

### *Value*

The purpose of the DSSA is to draw on and highlight the factors captured in an exporting country's pest-crop dossier or the importing country's PRA that may impact on pest risk management. This can, in fact, be repetitious of a PRA but by putting measures into a management-oriented structure and showing the objective of each option clearly, the stakeholders may be able to understand, contribute to and communicate the information more effectively.

The DSSA should make management decision making more transparent and be a resource for answering related questions in the importing country's PRA (specifically the section on risk). Equally, it can be used to organise data to support a request from the exporting country for recognition of equivalence of alternative measures.

The principal value of the Beyond Compliance Global DSSA is to increase the ability of the users to analyse and evaluate pest risk management. This is accomplished with a user-friendly method to collate, document, evaluate and visualise pest risk management information relevant to the development of a novel or improved systems approach for an exporting and/or importing country or region. The value of the DSSA comes through when it is filled in to:

1. assemble background information relevant to the proposed System Approach in Part A
2. shortlist potential measures for inclusion in the DSSA for further evaluation (Part B)
3. evaluate each shortlisted measure in six key indicator categories and assemble those evaluated measures into a proposed table (Part C)<sup>6</sup>. This step is crucial for reaching agreement among stakeholders.
4. contributors, references and resources can be documented for each part of the DSSA so that the process is transparent, consistent and defensible

Like most tools, the user's understanding the subject matter is key to selecting reliable information. Poor information does not result in good conclusions. Furthermore, the DSSA will not indicate a single answer to the question of what risk management plan is best. Instead it facilitates comparison of plans and trains the user what to take into consideration.

### *How to use the tool*

The navigation and flow of information with the DSSA is shown in Figure 13. The DSSA is designed to represent input from a group, but that could be from within the NPPO, among public sector researchers and regulators, or with private sector producers, exporters, and shippers or buyers, importers, consumers. An individual might enter information to one or more sections to prepare for a targeted discussion. The entire DSSA may be filled in by different groups to compare the outcomes. The original concept of the tool was to use it in market access negotiations between two countries' trade teams.

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<sup>6</sup> Visualisation aspects in Part C allow users to review their ratings and uncertainties about the performance of each measure under each indicator.

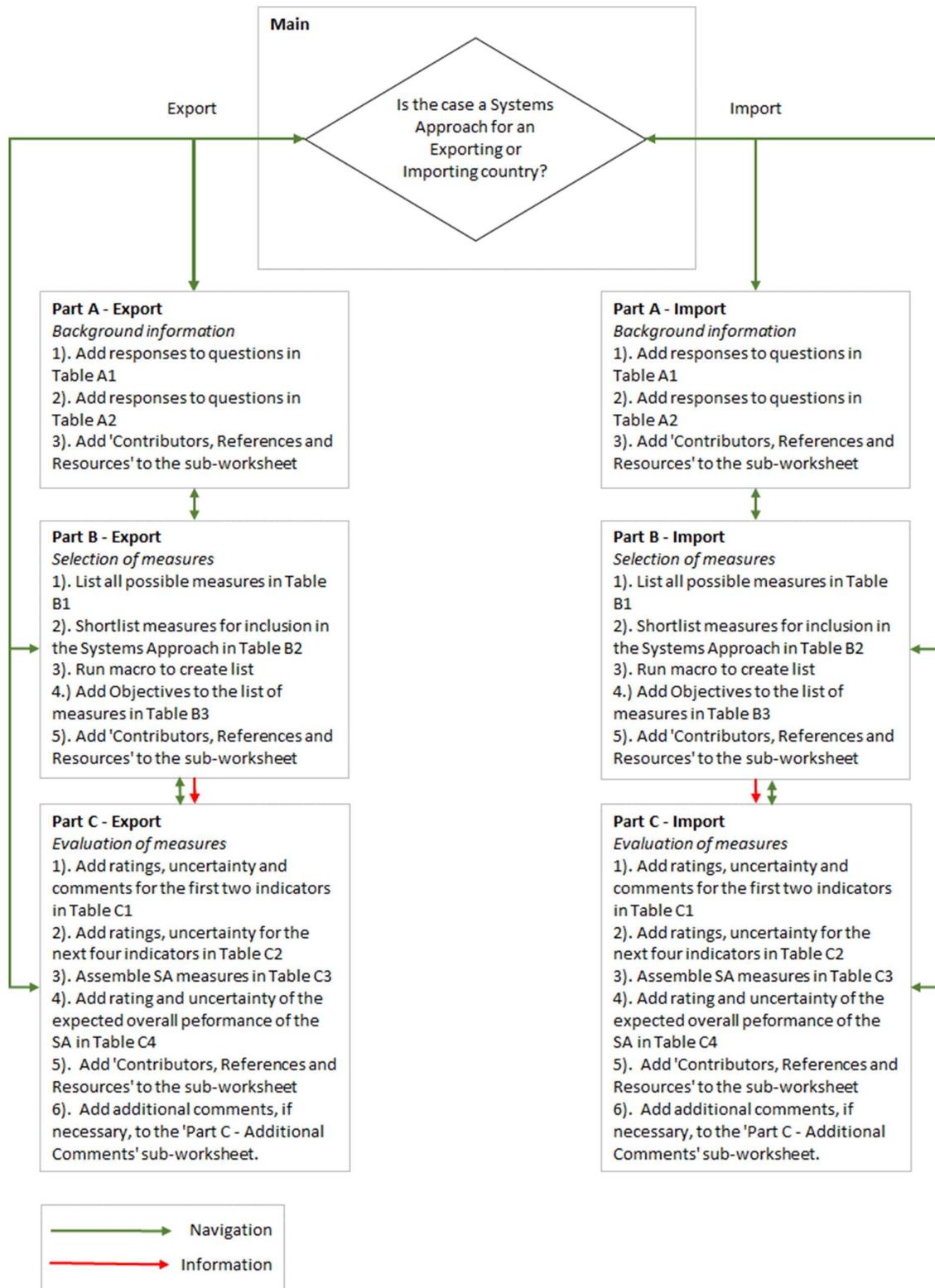


Figure 13. Flow diagram summarising required inputs in each section of the DSSA. Outputs from Part B are used as initial inputs for Part C (red arrows) and green arrows indicate how the user can navigate between the different parts of the tool.

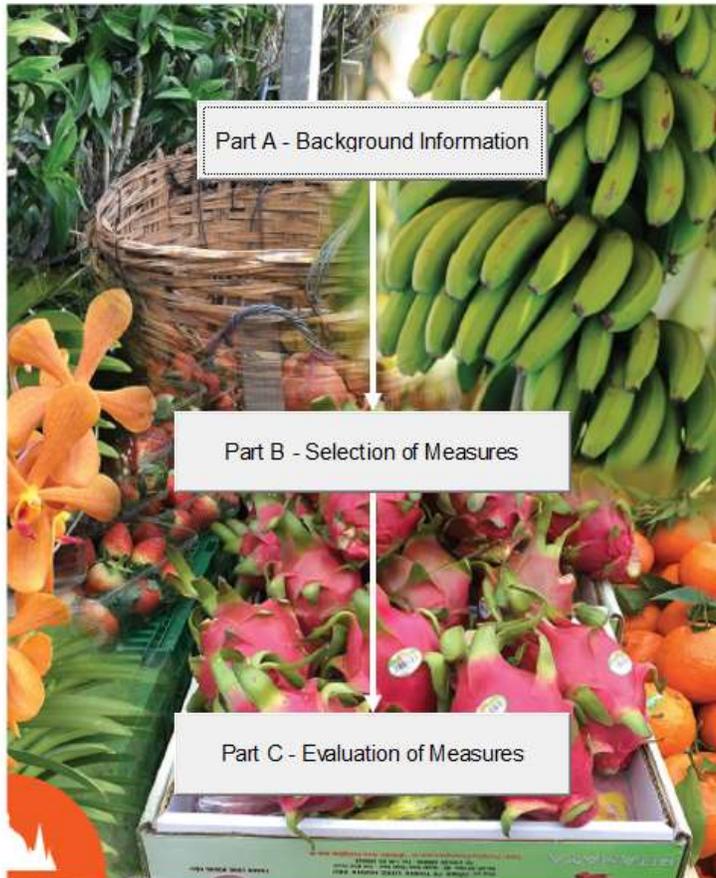
**Appendix 1: Screenshots of a hypothetical example for *Thrips palmi* on Orchids exported from 'Orchidland' to the European Union (EU)**

**Beyond Compliance Global - Decision Support for Systems Approach (DSSA)**

Developing a Systems Approach for trade of Orchids from Orchidland to EU - targeted at Thrips palmi

Version date: 21/05/2020

Tool is for:



All Contributors,  
References and  
Resources

Figure 14. Screenshot of Main page for a hypothetical example.

TABLE A1. Basic information		
A.1.01	Identify the commodity or pathway addressed by this management plan	Orchids
A.1.02	Intended use of the commodity/ pathway	Cut flowers
A.1.03	Original exporting country (country of origin)	Orchidland
A.1.04	Importing country/countries	EU
A.1.05	Regulated pest(s) identified by the importing country that is/are addressed in this management plan	Thrips palmi
A.1.06	Means of entry considered in the PRA (Commercial trade [air, sea, land, post]; Informal trade; Natural spread ...)	Commercial trade
A.1.07	Declared means of transport covered in this management plan	Air
A.1.08	What part of the importing country is covered by this plan? (Entire country or a defined area?)	All
A.1.09	Key host plants in the area covered by this plan	Various including Cucurbitae and Solanaceae
A.1.10	Does the PRA indicate a specific time period for the pest risk assessed?	No
A.1.11	Describe any restriction on the production area for export (see dropdown menu).	No restriction
A.1.12	Is there useful information from similar existing trade?	Yes
A.1.13	What is the initiating driver for this plan?	Maintaining trade

Figure 15. Table A1 of Part A for a hypothetical example.

TABLE A2. Key factors to consider based on the proposed commodity / pathway			
Key Factors	Rating	Uncertainty	Comment
A2.01	Rating - Entry		No PRA available
A2.02	Rating - Establishment		No PRA available
A2.03	Rating - Spread		No PRA available
A2.04	Rating - Impact		No PRA available
Description		Comment	
A2.05	How easy is it to detect the key organism(s) on the commodity / pathway? For example can you recognise the symptoms or signs on the sample?	Very easy	Add supporting comments here.
A2.06	How easy is it to identify the key organism(s)? For example, is there an available, reliable, accurate technique that has been agreed?	Difficult	Add supporting comments here.
A2.07	How well organised is the sector at risk in the importing country?	Very well organised	Add supporting comments here.
A2.08	Is there a way (current, feasible measures) to control or eradicate the regulated pest if it were to enter the importing country?	Yes	Add supporting comments here.
A2.09	Are there mechanisms to help put in place measures across the sector?	Yes	Add supporting comments here.
A2. Conclusions on key factors relating to risk management measures:			
Conclusions for risk management measures should be added here.			

Figure 16. Table B2 of Part B for a hypothetical example.





**Table B3. Add objectives of each Measure  
Shortlisted Measures for use in Part C**

Measure	Objective
Avoid cultivating host plants of Thrips palmi around planting area	Reduces pest challenge
Dipping of stem cuttings against Thrips palmi	Reduces pest infestation
Sanitation both inside and surroundings of farm or green house	Reduces pest challenge
Provide area to dispose of damaged orchids due to pests and planting materials which may be the host of Thrips palmi and insecticides should be applied to them	Reduces pest challenge
Pest monitoring on flowering stage either by eye or using berlese funnel	Indicates level of pest challenge/infestation
Use Blue sticky traps	Indicates level of pest challenge/infestation
Foliar and flower sprays programs (see Part C for details):	Reduces pest challenge
Field sanitation	Reduces pest challenge
Holding and collecting areas of cut flowers shall be cleaned and be far from green house	Reduces pest challenge
Soak cut flower stems in water container to remove Thrips palmi and store in a separate area	Reduces pest infestation
Select export quality stems by selecting defective cut orchid flowers with pests or signs of pests and dispose in the assigned area.	Reduces pest infestation
Packaging box or container for export shall be new, clean and strong.	Prevents re-infestation
Quarantine inspection / interception (Phytosanitary certificate) - Export	Verifying implementation performance
Quarantine inspection / interception (Phytosanitary certificate) - Import	Verifying implementation performance

Figure 19. Table B3 of Part B for a hypothetical example.

TABLE C1. Indicators of Measures (Pest risk reduction and implementation standard)							
	Systems Approach measures available (from Part B)	Contribution to pest risk reduction of infestation in exported consignment			Implementation standard		
		Maximum contribution to pest risk reduction achievable by the measure is:			Implementation standard of the measure in the field is:		
		Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic
i	Avoid cultivating host plants of Thrips palmi around planting area	Medium	Low		Medium	Medium	
ii	Dipping of stem cuttings against Thrips palmi	High	Low		High	Low	
iii	Sanitation both inside and surroundings of farm or green house	High	Low		Medium	Medium	
iv	Provide area to dispose of damaged orchids due to pests and planting materials which may be the host of Thrips palmi and insecticides should be applied to them	High	Very low		High	Low	
v	Pest monitoring on flowering stage either by eye or using berlese funnel				Very high	Medium	
vi	Use Blue sticky traps	Low	Medium		Very high	Very low	
vii	Foliar and flower sprays programs (see Part C for details):	Very high	Low		High	Low	
viii	Field sanitation	High	Medium		Medium	Medium	
ix	Holding and collecting areas of cut flowers shall be cleaned and be far from green house	Low	High		Medium	Medium	
x	Soak cut flower stems in water container to remove Thrips palmi and store in a separate area	Medium	Low		High	Medium	

Figure 20. Partial screenshot of Table C1 (showing the top 10 rows) for the hypothetical example. Note that the rating and uncertainty cells for the pest monitoring measure are left blank in this indicator because they do not directly contribute to risk reduction. Additionally, note that although the blue sticky traps are principally used for monitoring, they do make a small contribution to risk reduction and so a rating and uncertainty is provided here.

TABLE C2. Indicators of Measures (Ability to verify effect of measures to that CP, Producer Acceptability, Sector acceptability, Societal acceptability)													
Systems Approach measures available (from Part B)	Ability to verify effect of measures to that CP			Producer acceptability			Sector acceptability			Societal acceptability			
	Ability to use the Control Point to adjust system is:			Acceptability of the measure to producers is:			Acceptability of the measure to the sector is:			Acceptability of the measure to society is:			
	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic	
i	Avoid cultivating host plants of Thrips palmi around planting area			Medium	Medium		High	Low		High	Low		
ii	Dipping of stem cuttings against Thrips palmi			High	Low		High	Low		High	Low		
iii	Sanitation both inside and surroundings of farm or green house			Medium	Medium		High	Low		Very high	Very low		
iv	Provide area to dispose of damaged orchids due to pests and planting materials which may be the host of Thrips palmi and insecticides should be applied to them			High	Low		High	Low		Medium	Medium		
v	Pest monitoring on flowering stage either by eye or using berlese funnel	High	Low		High	Low		High	Low		Very high	Very low	
vi	Use Blue sticky traps	Low	Low		High	Low		High	Low		High	Low	
vii	Foliar and flower sprays programs (see Part C for details):			Medium	Low		Medium	Medium		Medium	Medium		
viii	Field sanitation			Medium	Medium		High	Low		High	Low		
ix	Holding and collecting areas of cut flowers shall be cleaned and be far from green house			Medium	High		Medium	High		Very high	Very low		
x	Soak cut flower stems in water container to remove Thrips palmi and store in a separate area			High	High		High	High		Very high	Very low		

Figure 21. Partial screenshot of Table C2 (showing the top 10 rows) for the hypothetical example. Note that the rating and uncertainty cells for the pest many of the measures are left blank in the first indicator because they have no ability to verify the effect of measures up to a control point. Additionally, note that though the blue sticky traps are mainly used for monitoring, but they also make a (small) contribution to risk reduction and so a rating and uncertainty is provided both here and in the risk reduction indicator in Table C1 (Figure 17).

TABLE C3. Assemble SA measures for Thrips palmi on/in Orchids from Thailand												
Reference name of proposed SA packages		Measure 1	Measure 2	Measure 3	Measure 4	Measure 5	Measure 6	Measure 7	Measure 8	Measure 9	Measure 10	
<b>SYSTEMS APPROACH</b>		Avoid cultivating host plants of Thrips palmi around planting area	Dipping of stem cuttings against Thrips palmi	Sanitation both inside and surroundings of farm or green house	Provide area to dispose of damaged orchids due to pests and planting materials which may be the host of Thrips palmi and insecticides should be applied to them	Pest monitoring on flowering stage either by eye or using berlese funnel	Use Blue sticky traps	Foliar and flower sprays programs (see Part C for details):	Field sanitation	Holding and collecting areas of cut flowers shall be cleaned and be far from green house	Soak cut flower stems in water container to remove Thrips palmi and store in a separate area	
Objective		Reduces pest challenge	Reduces pest infestation	Reduces pest challenge	Reduces pest challenge	Indicates level of pest challenge/infestation	Indicates level of pest challenge/infestation	Reduces pest challenge	Reduces pest challenge	Reduces pest challenge	Reduces pest infestation	
Indicator	Contribution to pest risk reduction of infestation in exported consignment	Rating:	Medium	High	High	High	-	Low	Very high	High	Low	Medium
		Uncertainty:	Low	Low	Low	Very low	-	Medium	Low	Medium	High	Low
	Implementation standard	Rating:	Medium	High	Medium	High	Very high	Very high	High	Medium	Medium	High
		Uncertainty:	Medium	Low	Medium	Low	Medium	Very low	Low	Medium	Medium	Medium
	Ability to verify effect of measures to that CP	Rating:	-	-	-	-	High	Low	-	-	-	-
		Uncertainty:	-	-	-	-	Low	Low	-	-	-	-
	Producer acceptability	Rating:	Medium	High	Medium	High	High	High	Medium	Medium	Medium	High
		Uncertainty:	Medium	Low	Medium	Low	Low	Low	Low	Medium	High	High
	Sector acceptability	Rating:	High	High	High	High	High	High	Medium	High	Medium	High
		Uncertainty:	Low	Low	Low	Low	Low	Low	Medium	Low	High	High
	Societal acceptability	Rating:	High	High	Very high	Medium	Very high	High	Medium	High	Very high	Very high
		Uncertainty:	Low	Low	Very low	Medium	Very low	Low	Medium	Low	Very low	Very low

Figure 22. Partial screenshot of Table C3 for the hypothetical example.

TABLE C4. Expected overall performance of SA for Thrips palmi on/in Orchids from Thailand																
SA package	Rate the expected overall performance of the SA			Any additional comments												
	Rating	Uncertainty	Graphic													
SYSTEMS APPROACH	Very high	Low	<table border="1"> <caption>Performance Distribution Data</caption> <thead> <tr> <th>Rating</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>VL</td> <td>0.0</td> </tr> <tr> <td>L</td> <td>0.0</td> </tr> <tr> <td>M</td> <td>0.0</td> </tr> <tr> <td>H</td> <td>0.2</td> </tr> <tr> <td>VH</td> <td>0.8</td> </tr> </tbody> </table>	Rating	Value	VL	0.0	L	0.0	M	0.0	H	0.2	VH	0.8	
Rating	Value															
VL	0.0															
L	0.0															
M	0.0															
H	0.2															
VH	0.8															

Figure 23. Screenshot of Table C4 for the hypothetical example.

## Appendix 2: BCG file naming conventions for version management

### Naming electronic files

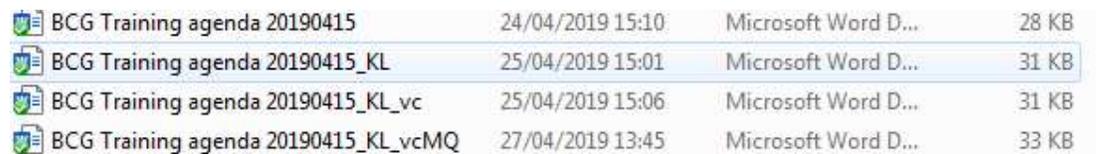
The Centre for Environmental Policy has developed a convention for naming files consistently. This is essential for maintaining good records and is important to apply for shared documents, particularly when various versions or iterations are anticipated. Good file naming and folder/file organisation prevents loss of valuable information and increases our ability find the correct files efficiently.

It is good to give a file a name with some relevant descriptive information followed by the date in an appropriate format (YYYYMMDD).

So, for example: TunisiaProdChain\_20190815 or DSSAtemplate\_20190327 (the file name may be either with or without a space before the date, as long as the series is consistent). Underscoring between the file descriptive name and the date also makes for a consistent line up when multiple files are saved.

Version management may be supported as follows, within a day, each time a file is updated significantly a letter will be added at the end of the date to show it is a new version on the same date, for example: ProdChain Practical\_20190608a, ProdChain Practical\_20190608b. If someone then comments on or edits another person's file, without substantively changing it, he or she may add initials to the end to indicate this review. It is also a way to show that each person to be consulted has read and 'signed off' on that version.

For example: ProdChain Practical\_20190608aMQ (for Megan Quinlan to show she read it but did not substantively change it). In the example below, you cannot rely on the date/time saved because some things are saved from emails or other sites at a different date/time than when they are actually written (Figure 24):



BCG Training agenda 20190415	24/04/2019 15:10	Microsoft Word D...	28 KB
BCG Training agenda 20190415_KL	25/04/2019 15:01	Microsoft Word D...	31 KB
BCG Training agenda 20190415_KL_vc	25/04/2019 15:06	Microsoft Word D...	31 KB
BCG Training agenda 20190415_KL_vcMQ	27/04/2019 13:45	Microsoft Word D...	33 KB

Figure 24. Example file names showing progressive versions of the file after editing by different authors.

The final part of the file name will always have the date on which a person is resaving a new version. It will NOT have the date of the event or the data collection or when the file was first saved as the final part of the file name. **The date at the end of the file name always reflects the date a file is saved, for the purpose of maintaining a clear record of versions.** If it is important to you to have the date of the event, put it before the final date and separate it by a hyphen or underscore. This will make the file name rather long, however.

For working documents, avoid putting the word, FINAL, in case it is altered later that becomes confusing. On the other hand, if it is a template or something that is not changing over time it may have the file name with date and then: FINAL, V1, V2 or other things to indicate the version.

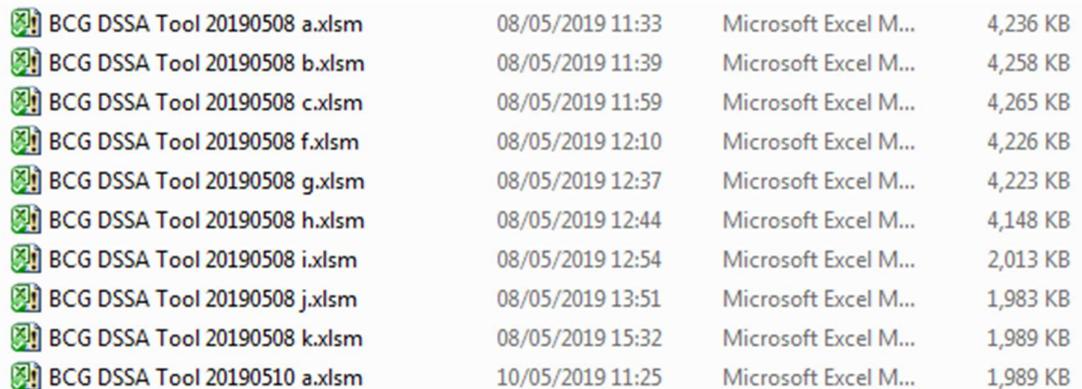
For example, BCG Glossary v1.0 is used as a file name when the document is completed, then if a minor change is made, the file might become v1.1. More significant changes will become v2.0. This is the preferred approach for 'official' documents (possibly something that would appear in a report, for example) but is not recommended for working documents.

Why is this important?

You will be managing confidential information and multiple copies of your own documents. It is essential to avoid mistakes in version management and to avoid saving confidential files into a place where others may see them.

Therefore, whenever you use a template document, you should immediately rename it with the specific file name to avoid the file automatically or accidentally replacing the template when in fact it is a completed or partially completed file for a specific case.

This method allows you to quickly see versions, as well (Figure 25). They will always line up according to the date, if you put the year first and day last. When there are too many versions and you do not need to go back to old ones, you may either save into a subfolder called archive or create an archive file to occupy less space.



File Name	Date	File Type	Size
BCG DSSA Tool 20190508 a.xlsm	08/05/2019 11:33	Microsoft Excel M...	4,236 KB
BCG DSSA Tool 20190508 b.xlsm	08/05/2019 11:39	Microsoft Excel M...	4,258 KB
BCG DSSA Tool 20190508 c.xlsm	08/05/2019 11:59	Microsoft Excel M...	4,265 KB
BCG DSSA Tool 20190508 f.xlsm	08/05/2019 12:10	Microsoft Excel M...	4,226 KB
BCG DSSA Tool 20190508 g.xlsm	08/05/2019 12:37	Microsoft Excel M...	4,223 KB
BCG DSSA Tool 20190508 h.xlsm	08/05/2019 12:44	Microsoft Excel M...	4,148 KB
BCG DSSA Tool 20190508 i.xlsm	08/05/2019 12:54	Microsoft Excel M...	2,013 KB
BCG DSSA Tool 20190508 j.xlsm	08/05/2019 13:51	Microsoft Excel M...	1,983 KB
BCG DSSA Tool 20190508 k.xlsm	08/05/2019 15:32	Microsoft Excel M...	1,989 KB
BCG DSSA Tool 20190510 a.xlsm	10/05/2019 11:25	Microsoft Excel M...	1,989 KB

Figure 25. Example screenshot of a well-organised folder

To do that from Window's File Explorer first select the files in a folder that you wish to archive. Right-click on the selected files, left-click on "7-Zip" and left-click "Add to archive..." (Figure 26).

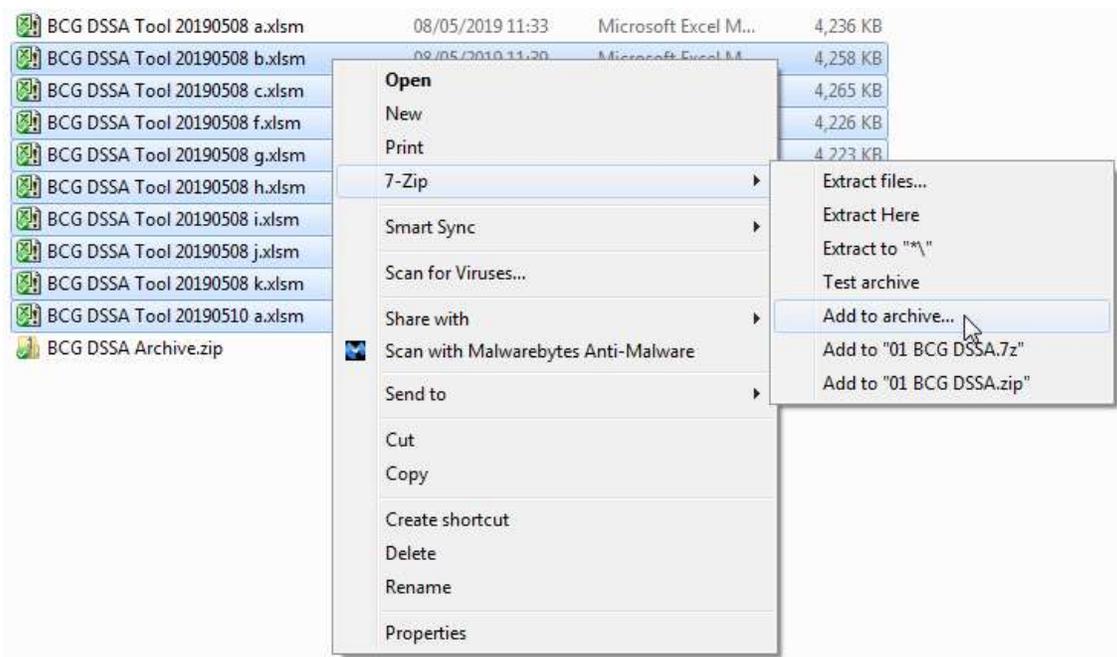


Figure 26. Example screenshot for adding files to a new archive.

In the top box of the “Add to Archive” screen is a suggested name for the archive based on the folder name. You can keep that or change it to something more relevant e.g. BCG DSSA Archive (Figure 27). Keep the defaults, though if you want to password-protect the archive because it contains confidential information then a password can be added (if you use this option then keep a record of the password!). Then click OK.

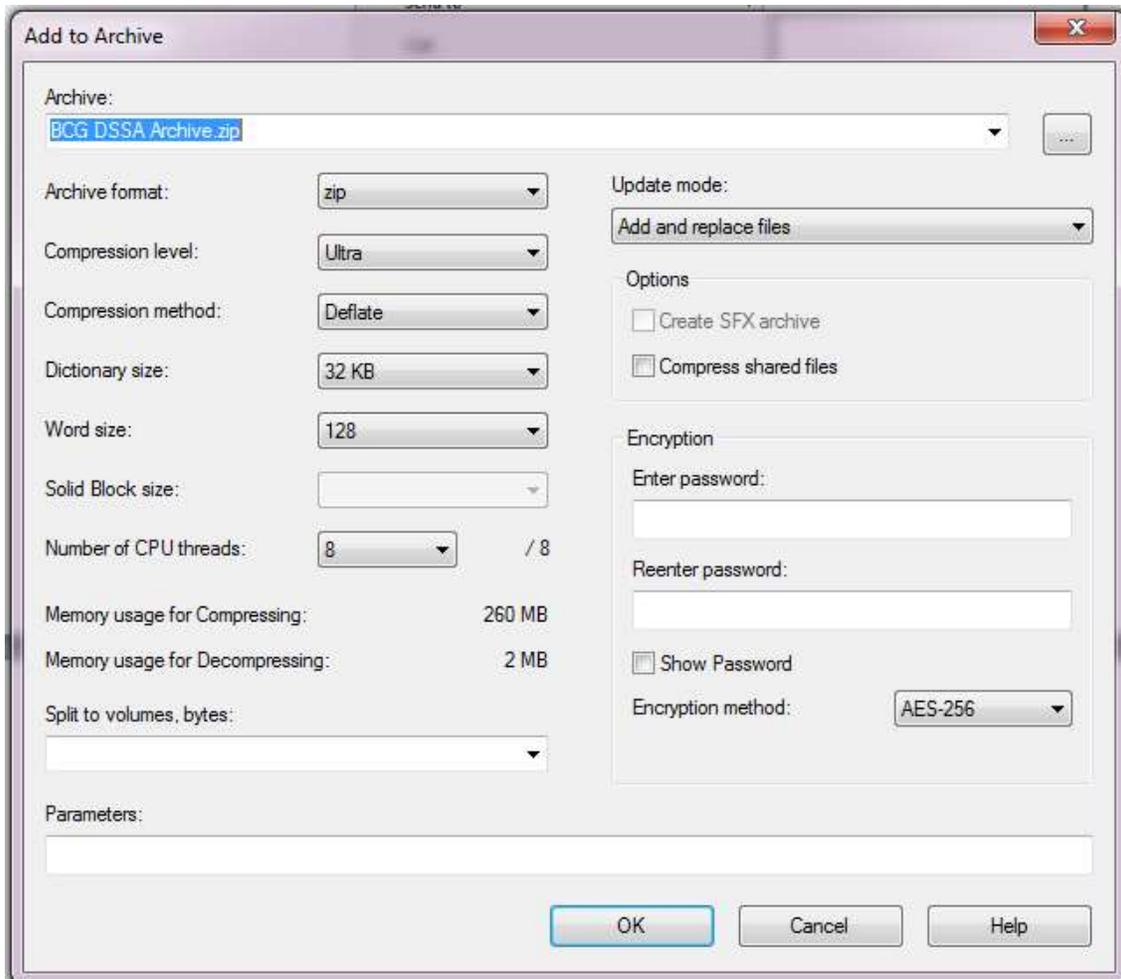


Figure 27. Examples screenshot of the “Add to Archive” screen.

All the files are then added to the Archive, but they still remain in the folder (Figure 28). Check that the files have been added to the archive by double-clicking and reviewing the contents then close the archive. The files remaining in the working folder need to be deleted to “clear it up”. Make sure that you delete ONLY the intended files. If you find you have made a mistake and deleted a file or files that you had NOT intended, then these files can be restored from the Recycle Bin on your Desktop. Once the files are archived then the working folder will look something like Figure 29 where only the latest version of the file remains alongside the archive file of previous versions.

 BCG DSSA Tool 20190508 a.xlsm	08/05/2019 11:33	Microsoft Excel M...	4,236 KB
 BCG DSSA Tool 20190508 b.xlsm	08/05/2019 11:39	Microsoft Excel M...	4,258 KB
 BCG DSSA Tool 20190508 c.xlsm	08/05/2019 11:59	Microsoft Excel M...	4,265 KB
 BCG DSSA Tool 20190508 f.xlsm	08/05/2019 12:10	Microsoft Excel M...	4,226 KB
 BCG DSSA Tool 20190508 g.xlsm	08/05/2019 12:37	Microsoft Excel M...	4,223 KB
 BCG DSSA Tool 20190508 h.xlsm	08/05/2019 12:44	Microsoft Excel M...	4,148 KB
 BCG DSSA Tool 20190508 i.xlsm	08/05/2019 12:54	Microsoft Excel M...	2,013 KB
 BCG DSSA Tool 20190508 j.xlsm	08/05/2019 13:51	Microsoft Excel M...	1,983 KB
 BCG DSSA Tool 20190508 k.xlsm	08/05/2019 15:32	Microsoft Excel M...	1,989 KB
 BCG DSSA Tool 20190510 a.xlsm	10/05/2019 11:25	Microsoft Excel M...	1,989 KB
 BCG DSSA Archive.zip	13/05/2019 10:46	Compressed (zipp...	144,955 KB

Figure 28. Example screenshot of folder in which an archive file has been created but archived files not yet deleted from the working folder.

 BCG DSSA Tool 20190510 a.xlsm	10/05/2019 11:25	Microsoft Excel M...	1,989 KB
 BCG DSSA Archive.zip	13/05/2019 11:49	Compressed (zipp...	175,428 KB

Figure 29. Example screenshot of folder with latest version of the file remaining alongside the archive file and all archived files deleted from the working folder (see body text about checks required before deletion).

To retrieve a file from an archive simply double-click the archive, double-click the file from the list to open it then resave it to an appropriate folder OR drag and drop the file to copy it to another folder (both methods create a copy so that they original remains in the archive).

We recommend keeping old versions until an entire program or project is completed, in case something removed earlier becomes relevant later. You can go back to when you think it was edited out and recover it from an earlier version.

#### Maintaining confidential files

If you have files that are related to a specific trade case, you are obligated to delete those when the exercise of facilitation and support is completed.

You are also obligated to keep those files in a safe place, where others at work will not see them. This could be a Dropbox™ folder or other online system that is signed out each day, or your own computer if it requires a password and your password is not shared with others.



## IPPC

The International Plant Protection Convention (IPPC) is an international plant health agreement that aims to protect global plant resources and facilitate safe trade. The IPPC vision is that all countries have the capacity to implement harmonized measures to prevent pest introductions and spread, and minimize the impacts of pests on food security, trade, economic growth, and the environment.

## Organization

- » There are over 180 IPPC contracting parties.
- » Each contracting party has a national plant protection organization (NPPO) and an Official IPPC contact point.
- » 10 regional plant protection organizations (RPPOs) have been established to coordinate NPPOs in various regions of the world.
- » IPPC liaises with relevant international organizations to help build regional and national capacities.
- » The Secretariat is provided by the Food and Agriculture Organization of the United Nations (FAO)

## International Plant Production Convention Secretariat

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## Food and Agriculture Organization of the United Nations

Rome, Italy



Funded by the Standards and Development Trade Facility

