

**COST Action number  
(19/11/2012– 18/11/2016)**

**Title**

**PROGRESS REVIEW 2  
(Action start date – Action Report date)**

**This report assessing the period stated above is submitted by the Rapporteur and is validated by the Scientific Committee of the COST Association**

**Confidentiality:** the Progress Review will be made available to the COST Association (Committee of Senior Officials, Scientific Committee, and Administration) and Action Management Committee only. The Summary assessment below will be included in the Progress Report which will be made publicly available on the Action page on the COST website.

**Summary assessment of progress (for publication):**

The COST SMARTER project was designed to investigate and propose sustainable control strategies to reduce the abundance of *Ambrosia* populations in badly infested areas in Europe and to prevent further spread into areas not yet invaded. The aim of the Action was to initiate and coordinate long-term management options to reduce ragweed in Europe by establishing an inter-disciplinary consortium that serves as a template for implementing integrated control measures against invasive alien species across Europe. The action proposed a combination of approaches and methods involving monitoring of *Ambrosia* populations, of *Ambrosia* pollen and of the allergic reaction of patients as well as testing of various control strategies involving weed management and biological control. Meeting the goals of the action requires cooperation among countries with invasive *Ambrosia* population and those threatened and among public and private sectors in a variety of fields, including agriculture, human health, ecology, monitoring, tourism, etc. I note that significant progress has been made in the areas of BioControl, land use practices, weed management, ecological considerations and modelling of population dynamics. However, there has been less progress for the human health and economic aspects of the project. Overall, the progress has been very good, with an active set up of knowledge and skills exchange, workshops and communication efforts towards a large set of different publics. The research efforts have been crowned with a number of excellent publications in high impact international journals.

**Validation by Scientific Committee**

This report was validated by the Scientific Committee on: <COST Association inserts SC validation date>



<p><b>I. Review of Progress</b></p> <p><b>MoU objectives</b></p> <p>The proposal lists 6 objectives. The progress report presents the state of progress for each of the objectives.</p> <ol style="list-style-type: none"> <li>1) The Action has established trans-national and trans-sectorial network with the goal of integrated management of <i>Ambrosia</i> in Europe.</li> <li>2) Progress has been made on biological control measures via herbivores, such as the North American leaf beetle <i>Ophraella communa</i> that is already used for biocontrol in China, and via vegetation management.</li> <li>3) A model integrating population dynamics, land-use practices and climatic factors to predict airborne <i>Ambrosia</i> pollen has been produced and published in a top scientific journal. This publication represents a collaboration with the integrated project “ATOPICA”, representing an important bridge built with other integrated projects</li> <li>4) The integrated model mentioned above, though it assesses population dynamics, land-use practices and climatic factors to predict airborne <i>Ambrosia</i> pollen, it fails to address health, societal and economic impacts. This work is in progress. Though not as yet achieved, the Action network appears to include the appropriate partners to enable the achievement of this objective.</li> <li>5) The Action provided 20 short-term scientific missions. The first summer schools were organized in summer 2015. Others are planned.</li> <li>6) As in point 2, there has been progress on implementation of new biocontrol agents for Europe.</li> </ol>
<p><b>MoU deliverables</b></p> <p>I note first that several of the listed “deliverables” are overlapping and somewhat redundant. However important progress has been made to produce these deliverables, and there have been real advances made by the project.</p> <p>A compilation of weed management techniques and their utility on the control of <i>Ambrosia</i> has been produced. This generates useful recommendations for landscape management schemes to prevent and limit <i>Ambrosia</i> establishment and spread which are in the process of being finalised into a set of recommendations for farmers and rural management.</p> <p>A rapid and easy diagnostic tool for identifying <i>Ambrosia</i> seeds in the seed bank has been produced.</p> <p>Work on the collaborative approach to BioControl of <i>Ambrosia</i> is progressing well, with tests of efficacy and safety/risk of potential insect BioControl agents well underway, and mention of a proposal to work on rust disease as a control agent.</p> <p>An integrative model of <i>Ambrosia</i> population dynamics under different conditions and management techniques is underway.</p> <p>An assessment of the health and economic impact of <i>Ambrosia</i> is in progress but as yet not very well developed.</p>
<p><b>Co-authored publications and FP7/ H2020 proposals/ projects</b></p> <p>There have been 8 publications in very good to excellent international peer reviewed journals that have appeared from this COST action. The publications deal with aspects of ecology, aerobiology and biocontrol, showing a good balance across the various working groups and topics. This is a very honourable level of productivity for this project.</p> <p>.</p> <p>An ITN proposal has been submitted. This is a very good networking tool and will contribute to the collaborations within the network, but the level of proposal submissions is quite modest. An additional</p>

H2020 proposal is mentioned in the section of development of pathogen control of Ambrosia, but I could not find this in the list.

**Additional Outputs and achievements**  
 Assess the relevance and significance of any additional outputs and/ or achievements generated by the Action.

The COST action has contributed to exchange and collaboration at a huge international level for dealing with the threat of invasive Ambrosia in Europe. These are, however, the initial goals of the project, which was already conceived at a very large scale. Since its establishment more partners have joined, and this can be viewed as additional benefits, but extending the original scale of the project.

<b>General assessment of progress</b>					
To make the overall assessment of progress:					
<ol style="list-style-type: none"> <li>Select the overall level of risk that best corresponds to that of the MoU objectives and deliverables<sup>1</sup> (high/ moderate/ low) at the time the Action was approved and</li> <li>Select the statement that corresponds to the level of progress with achievement of these objectives, delivery of deliverables and any additional outputs. Policy as well as scientific/ technological outputs and impacts must be addressed.</li> </ol>					
Correlate the selected options in order to arrive at the overall assessment (which is a result of the combination of achievement level and risk/ ambition level).					
	Level of MoU objective achievement, MoU deliverable delivery and additional outputs		General risk/ ambition level of Action MoU objectives and/ or deliverables (at the time of submission)		
			X High	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low
Scientific/ technological and policy outcomes and impact	<input type="checkbox"/>	Action is progressing appropriately with achievement of MoU objectives and delivery of MoU deliverables and delivery of multiple valid additional outputs, contributing to the COST mission of "COST enables break-through scientific developments leading to new concepts and products and thereby contributes to strengthen Europe's research and innovation capacities."	Excellent	Excellent	Very Good
	<input type="checkbox"/>	Action is progressing appropriately with achievement of MoU objectives and delivery of MoU deliverables and delivery of at least one valid additional output	Excellent	Excellent	Very Good
	<input type="checkbox"/>	Action is progressing appropriately with achievement of all MoU objectives and delivery of all MoU deliverables OR Action is progressing appropriately with achievement of most MoU objectives and delivery of most MoU deliverables AND delivery of at least one valid additional output	Excellent	Very Good]	Good
	X	The Action is progressing appropriately with achievement of the majority of MoU objectives and delivery of the majority of MoU deliverables and no valid additional outputs	Very Good	Good	Fair

<sup>1</sup> When assessing achievement of MoU objectives and delivery of MoU deliverables any changes approved by the (Scientific Committee/ CSO) must be considered the base against which the assessment is made.

<input type="checkbox"/>	The Action is progressing appropriately with achievement of half of the MoU objectives and delivery of half of the MoU deliverables.	Good	Fair	Poor
<input type="checkbox"/>	The Action is progressing appropriately with achieving few if any of the MoU objectives and delivering few if any of the MoU deliverables although there is progress with some other valid outputs	Fair	Poor	Fail
<input type="checkbox"/>	The Action is not progressing appropriately with the achievement of any MoU objectives, or delivery of any MoU deliverables or any valid additional outcomes	Poor	Fail	Fail

<b>II. Review of the Networking</b>	
<b>Added value of the networking</b>	
1. Comment on the Action's description of the added value of the networking	
The Action has carried out and stimulated a lot of networking activities that have contributed to its success in producing integrated management strategies for Ambrosia at a European level and have led to joint scientific publications among the associated groups.	
2. Assess the validity of the Action's statement regarding the necessity of the added value of the Action networking for the Action co-authored publications:	
X	Action statement is valid
<input type="checkbox"/>	Action statement is not valid for the following publications for the following reasons
	(specify which publications and justify/ explain)

<b>III. Review of Impacts<sup>2</sup></b>	
1. With reference to the definition of impacts in Annex 1 comment on the validity, relevance and significance (in particular importance and timeliness) of the impacts (Scientific/ technological, Economic, Societal) claimed by the Action (in Section I.D of the Achievement Report).	
2. Indicate any additional possible impacts not considered by the Action.	
Enter comment addressing points 1 and 2 here.	
<b>Overall assessment of impacts</b>	
Select the statement that best describes the Action's impacts:	
X	Multiple highly significant impacts are reasonably foreseen, at least one of which is already observed [Excellent]
<input type="checkbox"/>	Multiple highly significant impacts are reasonably foreseen for the future OR one highly or moderately significant impact is already observed [Very Good]
<input type="checkbox"/>	One highly significant or multiple moderately significant impacts are reasonably foreseen for the future [Good]
<input type="checkbox"/>	One moderately significant impact or multiple impacts of low significance is/ are reasonably foreseen for the future OR one impact of low significant is already observed [Fair]
<input type="checkbox"/>	At least one impact of low significance may occur in the future [Poor]
<input type="checkbox"/>	No impacts have occurred or can be foreseen to occur in the future [Fail]

<sup>2</sup> Scientific/ technological, Economic, Societal

#### IV. Review of Dissemination and exploitation of Action results

1. Assess the effectiveness of the Action's dissemination and exploitation approach.				
The Action has an aggressive approach to communicating its findings and its purpose to a wide variety of publics – general public, teachers, students, stakeholders and scientists. This includes press communications via television, radio, internet and the printed press. The				
2. Indicate whether each initiative implemented by the Action was effective and added value or not.				
Item/ activity	Target audience	Result	Hyperlink	Effective and added value Y/N
The ENGAGE project, a 1-hour class about <i>Ambrosia</i> and <i>Ophraella</i>	Teachers and students	Several downloads of the instructions	<a href="#">ENGAGE</a>	I think good
SMARTER <i>Ophraella</i> recognition card	General public, stakeholders	Not known yet	<a href="#">Ophraella cards</a>	We will see
SMARTER Conference & Workshop: "Invasive plants management success & regulation" (Jan 2015)	Stakeholders, mainly at the European level, but also national authorities, and scientists	Draft outline of regulation of biological control of invasive plants in Europe developed; follow-up meeting under the lead of the European and Mediterranean Plant Protection Organization (EPPO) in autumn 2015	<a href="#">Conference &amp; Workshop</a>	This was a good conference
<i>Ophraella</i> and <i>Ambrosia</i> pollen flying on TV	General public	General public informed about the topic of the action (general problem and work of 2 groups)	<a href="#">TV programme</a>	Y
SMARTER@Neobiota Conference on invasive species	Scientists	More scientists familiar with SMARTER, and the ragweed problem	<a href="#">SMARTER@Neobiota</a>	This was a good conference
SMARTER <i>Ambrosia</i> survey meeting (Nov 2011)	Experts and stakeholders of NL	Intention to collaborate on data collection	<a href="#">Ambrosia survey meeting</a>	Y
Press release - Biocontrol breakthrough could defeat allergenic ragweed in EU	General public, scientists, stakeholders	Many journal articles (see below)	<a href="#">Press release</a>	Y
SMARTER poster translated into several languages	General public, scientists, stakeholders	Higher visibility of the Action and the ragweed problem	<a href="#">SMARTER poster</a>	Y
Video about SMARTER on Youtube	General public, scientists, stakeholders	Higher visibility of the Action and the ragweed problem	<a href="#">Youtube video</a>	Y

Half day session on ragweed @ 4th International Symposium on Weeds and Invasive Plants	Scientists	Higher visibility of the Action and the ragweed problem	<a href="#">Symposium</a>	Y
SMARTER poster on life-cycle of common ragweed	General public, stakeholders	Higher visibility of the Action and the ragweed problem	<a href="#">life-cycle poster</a>	Y
SMARTER @ German Ambrosia meeting Berlin	Stakeholders	Higher visibility of the Action, led to participants for the TF Population Dynamics	<a href="#">status and control of <i>Ambrosia artemisiifolia</i> in Germany</a>	Y
Over 60 journal articles about the appearance of <i>Ophraella</i> in Europe in several countries (NL, CH, IT, FR), including 1 in Freiburger Nachrichten	General public, stakeholders	Higher visibility of the Action and the ragweed problem	<a href="#">Article</a>	Y
IRS meeting at Rho (Italy, Apr 2014)	Scientists	Higher visibility of the Action and the ragweed problem	Presentations and posters <a href="http://irc.aslmi1.mi.it/">http://irc.aslmi1.mi.it/</a>	Y
SMARTER 2012 Project Poster	General public, scientists, stakeholders	Higher visibility of the Action and the ragweed problem	<a href="#">Project poster</a>	Y
Folder: European Ambrosia species	Experts and stakeholders	Now known yet. Aim: better identification of ragweed species	Folder/Cards of single species and a comparative folder	Y
SMARTER website	General public, scientists, stakeholders	Higher visibility of the Action and the ragweed problem	<a href="#">Homepage</a>	Y
Leaflets on <i>Ambrosia</i> management	Stakeholder	Not known yet. Aim: better and more effective control of ragweed.	Homepage	Y

3. Select which of the following statements best describes the Action

- X There were many highly effective Action activities focusing on dissemination<sup>3</sup> and exploitation of Action results [Excellent]
- All Action activities focusing on dissemination and exploitation of Action results were effective [Very Good]
- Most Action activities focusing on dissemination and exploitation of Action results were effective [Good]
- A few Action activities focusing on dissemination and exploitation of Action results were effective [Fair]
- The activities undertaken focusing on dissemination and exploitation were ineffective [Poor]
- The Action did not undertake any valid activities focusing on dissemination and exploitation of Action results [Fail]

<sup>3</sup> Dissemination activities could include: Action website, co-authored publications listed at Section I.B of Action's Progress Report, other Action publications, attendance at Dissemination Meetings listed at Section II.B.2 of Action's Progress Report.

<b>V. Review of Action Success(s)</b>									
<p>COST regularly communicates the successes of Actions. Please comment on the validity of the aspect(s) identified by this Action as its greatest successes (see Final Achievement Report Section I.G). Enter comment here</p> <p>This Action, still running, has made important contributions to attacking the problem of a noxious invasive weed at the level of Europe. The problem crosses international borders, particularly the allergenic Ambrosia pollen, and this action is bringing together the appropriate partners to address the problem at the appropriate scale, especially with the extension to central Asia and Asia.</p> <p>If you believe that another aspect(s) (outcomes and/ or impacts, rather than activities) of the Action should be considered its greatest success(es) please define these below (maximum two).</p>									
<table border="1"> <thead> <tr> <th>Description of the success story</th> <th>Dimension of the success Breakthrough: scientific, technological or socioeconomic Policy implementation (specify which policy) Capacity building)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Description of the success story	Dimension of the success Breakthrough: scientific, technological or socioeconomic Policy implementation (specify which policy) Capacity building)							
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<b>VI. Review of the management of the Action budget</b>
<p><b>Funds spent outside of the COST countries</b></p> <p>1. If the Action spent funds on STSMs to approved institutions in International Partner Countries (IPC) or Near Neighbour Countries (NNC) and/ or STSMs from an approved institution in a NNC please assess the value of these activities to the Action.</p> <p>Add comment here</p> <p>2. If the Action spent funds on any "Invited Speakers" for meetings and/ or Training Schools or on Dissemination meetings please assess the value these added to the Action</p> <p>Add comment here</p> <p><b>General comments on Action management</b></p> <p>Add any general comments on the effectiveness of the Action management</p>

<b>Action Rapporteur details and procedures</b>
<p>Action Rapporteur name Jacqui SHYKOFF Affiliation CNRS Country France Telephone ++33 (0)1 69 15 56 66 Email address Jacqui.shykoff@u-psud.fr</p> <p>In completing the Assessment Report the Action Rapporteur</p> <ul style="list-style-type: none"> <li>■ reviewed the following documents: <ul style="list-style-type: none"> <li>■ Action MoU (insert hyperlink)</li> <li>■ Draft Action Achievement Report</li> <li>■ XXXXXXXX</li> </ul> </li> <li>■ used the following methodology: XXXXXXXX.</li> </ul>

Please remember to write a summary assessment of progress on the first page of this report. This summary will be made public, while the rest of this report will not.

## Annex 1

### Definitions:

<b>COST Action Challenge (main aim)</b>	"The research question addressed by the COST Action targeting scientific, technological, and / or socioeconomic problems"
<b>COST Action Innovation</b>	"The creation and / or development of new or improved concepts, products, processes, services, and / or technologies that are made available to markets, governments and society"
<b>COST Action objectives</b>	"COST Action objectives are the results that an Action needs to achieve in order to respond to meet its challenge. These are SMART (Specific, Measurable, Achievable, Relevant, Timely) and twofold: research coordination objectives and capacity building objectives."
<b>COST Action research coordination objectives</b>	"Achieving these objectives turns COST Actions from initially scattered teams into one transnational team and leverages the existing funded research. These objectives entail the distribution of tasks, sharing of knowledge and know-how, and the creation of synergies among Action participants to achieve specific outputs."
<b>COST Action capacity building objectives</b>	"Achieving these objectives entail building critical mass to drive scientific progress, thereby strengthening the European Research Area. They can be achieved by the delivery of specific outputs and / or through network features or types and levels of participation."
<b>COST Action networking activities</b>	"any activities organised by the COST Action (whether or not directly funded by COST) in order to achieve research coordination and capacity building objectives."
<b>COST Action networking tools</b>	"instruments through which eligible activities can be funded"
<b>COST Action outputs</b>	"direct results from the COST Action activities. These can be codified knowledge, tacit knowledge, technology, and societal applications."
<b>COST Action impact</b>	"the short- to long-term scientific, technological, and / or socioeconomic changes produced by a COST Action, directly or indirectly, intended or unintended."
<b>COST Action deliverable</b>	"a distinct, expected and tangible output of the Action, meaningful in terms of the Action's overall objectives such as a report, a document, a technical diagram, a software etc. Action deliverables are used to measure its progress and success."
<b>COST Action milestones</b>	"Control points in the Action that help to chart progress. They are also needed at intermediary points so that, if problems have arisen, corrective measures can be taken. A milestone may be a critical decision point in the Action where, for example, the MC must decide which of several technologies to adopt for further development (e.g. core group and MC meetings, mid-term reviews)"
<b>Inclusiveness Target Country (ITC):</b>	Current COST Member Countries targeted by the COST inclusiveness Policy ("Inclusiveness Target Countries" (ITC)): EU 13 (Bulgaria, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Lithuania, Latvia, Malta, Poland, Romania, Slovenia, Slovakia), EU candidate countries (the former Yugoslav Republic of Macedonia, Montenegro, Republic of Serbia, Turkey) and potential EU candidate countries (Bosnia and Herzegovina). In addition, to comply with the EC criteria for 'Spreading Excellence and Widening Participation', Portugal and Luxemburg are included.