Version 21/04/2016

COST Action number
(Action 14/05/2014 – Action 30/04/2018)

T Linking belowground biodiversity and ecosystem function in European forests (BioLink)

PROGRESS REPORT AT MONTH 30

This report is submitted by the MC Chair on behalf of the Management Committee.

Executive summary of the Progress Report:

Approximately at its half-way point, BioLink is well on its way to achieving its objectives. The main goal of the Action - to establish a forum where current knowledge on soil biodiversity can inform sustainable forest and tree crop management - is being achieved by involving a sizeable number of experts and scientists. To date, nearly 240 people actively participated in the activities organised by the Action, with 50/50 gender balance, 49% representation of Early Career Investigators and a significant contribution from researchers based in Inclusiveness countries (44%). Each of the four WGs is working on a delivery of several review papers which will provide peer-reviewed evidence base for the provision of opinion and policy papers to be created later during the Action.

There is a significant research coordination element built into Action initiatives, with a strong preference for involvement of ECI. The first Action meeting featured around 30 ECI purposefully invited to attend the meeting to gain contacts to facilitate exchange and visiting positions. This focus has continued during all subsequent activities, whether through the provision of oral session space for ECI or organisation of training schools. To date, the Action has supported 38 STSMs and organised a training school where the number of participants had to be capped due to space constraints. Further STSM calls and an additional training school are planned for the near future. As documented by the ECI feedback, BioLink has facilitated networking and collaboration activities leading to publications or to a long-term research partnership and grant proposals.

The Action aims to strengthen EU research capacity to improve our understanding of soil biodiversity and its role in ecosystem function. Research coordination is supported via invitation of international experts to Action meetings, but also via continuing discussion within and between WGs. The latter happens during Action meetings where at least two sessions are dedicated to work within WGs, but also in the interim by working on projects and publications. BioLink will organise a series of WG workshops in early 2017 to further ongoing collaboration and writing effort. The Action has succeeded in informing and improving several national research and education projects Research on soil biodiversity is an exciting and expanding topic, the Action will continue to seek to involve experts and representatives of other organisations involved in its study to improve competitiveness of European Research Area.

BioLink is in the process of delivering two edited monographs; a methodological handbook titled Soil Biodiversity aimed at starting and established researchers and detailing current knowledge of soil biodiversity and methods used in its study. The other monograph, in the final stages of preparation at the time of writing of this report, is a volume synthesising information on the role of belowground biodiversity in aboveground ecosystem production. This volume, together with peer-reviewed publications and targeted information leaflets will be used to generate outputs aimed at less scientific audience, but with wider policy and societal impact.

I. Progress Report

I.A. COST Action Profile

Objective/ Aim

To create a forum where current understanding of functional belowground biodiversity at different scales and trophic levels in European forests can guide the development of prescriptions for sustainable forest and tree crop management.

Details

MoU:	063/13	Start of Action:	14/05/2014
CSO approval date:	15/11/2013	End of Action:	30/04/2018

COST Member Countries and Cooperating State having accepted the MoU

Austria Belgium Bosnia and Herzegovina Bulgaria Croatia Czech Republic Denmark Estonia Finland France Germany Greece Hungary Iceland Ireland Israel Italy Latvia Lithuania Montenegro Netherlands Norway Poland Portugal Romania Serbia Slovakia Slovenia Spain Sweden Switzerland Turkey United Kingdom (33)

Intentions to Accept the MoU

0

Other participants:

Institution Name	Country
n.a.	

Contacts

Chair/ Vice Chair

Position	Name	Contact details	Country	Date of PhD:	Gender
Chair:	Martin Lukac	University of Reading School of Agriculture, Policy and DevelopmentRG6 6AG Reading United Kingdom **m.lukac@reading.ac.uk**	UK	2002	M
Vice Chair:	Ivika Ostonen	University of Tartu Vanemuise 4651014 Tartu Estonia **ivika.ostonen@ut.ee**	Estonia	2003	F

Working Group Leaders

WG#	WG Title	WG Leader	Country	Date of PhD:	Gender	Number of participants
1	Linking belowground biodiversity to ecosystem function.	Douglas Godbold	Austria	1983	M	45
2	Microbial and faunal functional biodiversity in belowground food-webs.	Johannes Rousk	SE	2009	M	40
3	Belowground biodiversity in plantations and tree crops.	Mauro Gamboni	IT	n.a.	M	32
4	Functional diversity in forest models.	Gaby Deckmyn	BE	n.a.	F	17

Other positions if applicable (STSM Coordinator, WG Vice Leader, Task Force Leader…)

Position	Name	Country	Date of PhD:	Gender
STSM Coordinator	Miglena Zhiyanski	BG	2004	F
Financial Rapporteur	Mark R Bakker	FR	1998	M
Financial Rapporteur	Elena Vanguelova	UK	2003	F
WG1 Vice leader	Nadia Soudzilovskaia	NL	2006	M
WG2 Vice leader	Rasmus Kjøller	DE	1999	M

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WG3 Vice leader	Christos Athanassiou	GR	1999	M
WG4 Vice leader	Jorge Curiel-Yuste	ES	2004	M

Action website:	www.bio-link.eu

I.B. Progress with MoU objectives and deliverables and additional outputs

MoU objectives

MoU objective	Achieved Yes/ Partially/ No	Evidence of (partial) achievement including hyperlink to enable assessment of the achievement[1]. Justification if full achievement is not foreseen
1. To summarise current knowledge of belowground biodiversity in forest ecosystems across a management intensity gradient.	Partially	Several review papers are nearing completion by each of the WGs. Among other activities, WG1 preparing an overview of biodiversity indicators and traits linked to ecosystem function and WG3 a review of the role of soil biodiversity in tree crop ecosystem health.
2. To integrate new theoretical and technological advances in biodiversity research in the forest ecosystem research community.	Partially	WG2 is finalising an opinion paper on a novel approach to utilising current knowledge to build a functional framework of soil organisms. The paper is currently in draft stage.
3. To provide a focal point for the dissemination of information about forest biodiversity and ecosystem function.	Partially	The Action participants have identified multiple points of contact with practitioners and wider public. WG3 in particular focuses on this objective by preparing a soil biodiversity assessment guide and information leaflets.
4. To collate and exchange recent findings from experimental and observational studies of belowground biodiversity in perennial tree crops and simplified ecosystems.	Yes	Two books focusing on the material and topics covered by the Action will be published in 2017: **Soil Biodiversity** (Advances in Soil Science series) and **Soil biological communities and ecosystem resilience** (Sustainability in Plant and Crop Protection series).
5. To compare experimental and model results from natural forests and tree crops concerning effects on soil biodiversity.	Partially	WG4, in collaboration with researchers from other WGs, is testing a modelling framework which will allow for representation of belowground biodiversity in ecosystem models.
6. To identify new cross-disciplinary research areas.	Partially / Yes	International experts working in areas connected to, but not strictly focussed, on soil biodiversity have been and will continue to be invited to Action meetings.

MoU deliverables

MoU deliverable	Level of progress[1]	Evidence of (partial) delivery achievement including hyperlink to enable assessment of the delivery[1]. Justification if full achievement is not foreseen
1. provision of a platform for knowledge integration and identification of cross-cutting issues	4/5	More than 250 researchers have taken an active role within the Action. The Action and its members actively contribute to several European/global soil biodiversity initiatives.
2. creation of a European research community of forest scientists aware of the potential uses of new technologies	4/5	Purposeful involvement of invited experts and ECI in Action activities generates a collegial and positive atmosphere, as evidenced by participant feedback. New and expected technology development will be publicised via Soil Biodiversity monograph.
3. dissemination of information designed for end-users such as forest owners and managers	2/5	Content development at this stage, targeted towards tree crop systems rather than forestry. Key stakeholder

[1] The links to the outputs and deliverables will be used by the Action Rapporteur in assessing the progress.

		groups have been identified and surveyed in 6 countries. Targeted dissemination to follow.
4. expert network dedicated to the study of diversity gradients in forest ecosystems	3/5	Decent progress on identifying and categorising current knowledge, the Action focuses on identifying key elements linking the complexity of aboveground production system to belowground diversity and function.
5. development of new forest ecosystem modelling concepts	3/5	WG4 members are exploring several novel concepts with the aim of implication of existing modelling approaches in order to widen their applicability in situations with lack of data (as is the case in most soil biodiversity research).
6. review and opinion publications in peer-reviewed journals	4/5	A good number (currently 3 nearing submission, 4 in draft, more under discussion) of opinion papers are being prepared.

Co-authored publications and FP7/ H2020 proposals

The co-authored publications and FP7/ H2020 proposals/ projects resulting from the Action are listed on the page following the "Additional outputs and achievements" section.

Additional outputs and achievements

BioLink is purposefully focusing its resources at ECI personnel, with the view that new and breakthrough ideas are most likely to be generated by researchers at the beginning of their scientific career. Research shows that this cohort of researchers disproportionately contributes to innovation and generation of ground-breaking ideas. BioLink aims to foster the personal and professional development of ECI by providing significant space to ECI to enhance their skill base, network with starting and established researchers and to support ECI mobility.

Teaming up with EUFORINNO project, BioLink has organised a training school aimed at developing analytical and modelling skill base in the community of scientists studying aspects of soil biodiversity. The School was originally planned for 15 participants, but had to be enlarged to accommodate significant demand and was eventually attended by 26 ECIs. The School and the trainers received excellent feedback from participants and is likely to generate several publications originating from work carried out during the School.

Thus far, BioLink has supported 38 STSMs. As indicated in the list of publications below, many of the STSMs have resulted in peer-reviewed manuscripts already submitted or in prep. The list of STSMs carried out so far is as follows:

Grant Period 1:

Name	Gender	ECI	Inclusiveness	From	To
Martina Di Lenola	F	Yes	Yes	Italy	Portugal
Carla Cruz Paredes	F	Yes	No	Denmark	Sweden
Isabella Pentimone	F	Yes	No	Italy	Spain
Tereza Polacikova	F	Yes	Yes	Czech Rep	Portugal
Jovana Devetakovic	F	Yes	Yes	Serbia	Poland
Diogo Proenca	M	Yes	Yes	Portugal	Denmark
Lieven Michelsen	M	Yes	No	Belgium	Germany
Jose Francisco Cobo Diaz	M	Yes	No	Spain	France
Zhun Mao	M	Yes	No	France	UK
Marina Katanic	F	Yes	Yes	Serbia	Slovenia
Maria Sakka	F	Yes	No	Greece	Italy
Yasmine Pinuela	F	Yes	Yes	Slovenia	Spain
Nadia Soudzilovskaia	F	Yes	No	Netherlands	Sweden
Edith Hammer	F	Yes	No	Sweden	Netherlands

Grant Period 2:

Name	Gender	ECI	Inclusiveness	From	To
Dominika Thiem	F	Yes	Yes	Poland	Slovenia
Romina Lorenzetti	F	Yes	No	Italy	Greece
Natasa Sibanc	F	Yes	Yes	Slovenia	UK
Antonio Fernandez-Gonzales	M	Yes	Yes	Spain	Czech Rep
Nadia Soudzilovskaia	F	Yes	No	Netherlands	Sweden
Gergely Boros	M	Yes	Yes	Hungary	Switzerland
Sandrine Malchair	F	Yes	Yes	Belgium	Czech Rep
Antonio F-Gonzales	M	Yes	Yes	Spain	Czech Rep
Lyudmila Lozanova	F	Yes	Yes	Bulgaria	UK
Raluca-Elena Enescu	F	Yes	Yes	Romania	Spain
Johanna Donhauser	F	Yes	No	Switzerland	Sweden

Grant Period 3:

Name	Gender	ECI	Inclusiveness	From	To
Jonathan Bonfanti	M	Yes	No	France	Denmark
Christoph Rosinger	M	Yes	No	Austria	Sweden
Emira Hukic	F	Yes	Yes	Bosnia	Slovenia
Jelena Lazarevic	F	Yes	Yes	Montenegro	Sweden
Isabella Pentimone	F	Yes	No	Italy	Spain
Mauro Lanfranchi	M	Yes	No	UK	Spain
Diogo Proenca	M	Yes	Yes	Portugal	Germany
Natasha Sibanc	F	Yes	Yes	Slovenia	UK
Yasmine Pinuela	F	Yes	Yes	Slovenia	France
Diogo Pinho	M	Yes	Yes	Portugal	UK
Diana Navratilova	F	Yes	Yes	Czech Rep	Sweden

BioLink aims to publish at least two edited monographs to reach an audience beyond the scope of most scientific journals. In collaboration with Palgrave-MacMillan and with Springer, the Action is in the process of publishing a Handbook of Soil Biodiversity, as well as an edited volume focusing on

Please describe any additional outputs and achievements from the Action

Version 21/04/2016

Co-authored publications and FP7/ H2020 proposals

Co-authored publications

Enter in the table below only publications on the topic of the Action, co-authored by at least two Action participants from two different countries participating in the Action and for which the Action networking added value. A maximum of ten publications may be entered. If the Action has more than ten such publications the Core Group should select the ten most significant ones to include in the table below.

NO.	Bibliographic data (including: Title, Authors, Title of the periodical or the series, Issue number or volume, Publisher, Year of publication, Relevant pages)	Main author	Number of authors	Action participants listed among the authors (Name, country and role[2])	WGs involved in publication	Date of submission (must be after Action start date)	Expected date of publication (if not already published)	Persistent link to publicly available version of the paper (if available) or the abstract	Is/Will open access[3] provided to this publication?	Is/ will COST be cited/ acknowledged in the publication?	Are/ will COST funds (be) implicated in this publication	Relevance to H2020 Societal Challenges[4]?	Is it peer-reviewed?	Was the added value of the Action Networking necessary for the publication	Impact Factor (if applicable)
1	Dimitrova, V., Lyubenova, M., Zhiyanski, M. and Vanguelova, E. 2015. Roots biomass and carbon in representative Forest ecosystems in Bulgaria. Journal of Chemical, Biological and Physical Sciences, 5 (2), 2090-2108	Vlada Dimitrova (ECI)	4	3	1	Dec 2014	2015	*www.jcbsc.org/admin/ get_fileenv.php?id=213*	Yes	no	no	Climate action	Yes	Yes	1.0
2	*Shefferson R. P., Roy M., Puttsepp Ule., Selosse M-A. Demographic shifts related to mycoheterotrophy and their fitness impacts in two Cephalanthera species.*	*Shefferson*	*4*	*2*	*1*	*2016*	*2016*	*http://onlinelibrary.wiley.com/ doi/10.1890/15-1336.1/full*	*No*	*no*	*no*	Climate action	*Yes*	*Yes*	*6.1*
3	*Daugaviete, M., Bambe, B., Lazdins, A. and Lazdina D. Growth and productivity of plantation forests and impact to environment. Monograph. LFRI Silava. 420 p. (in press)*	*Daugaviete, M*	*4*	*2*	*2*	*2016*	*2016*	*LFRI Silava*	*Yes*	*Yes*	*no*	Climate action	*No*	*Yes*	*n.a.*
4	Masinova T,Pontes A, Carvalho C, Sampaio JP, Baldrian P	Masinova T (ECI)	*5*	*4*	*1,3*	*2015*	*2016*	*manuscript under revision in Int. J. Syst. and Evol. Microbiol.*	*n.a.*	*Yes*	*no*	Climate action	*Yes*	*Yes*	*n.a.*
5	*Navratiliva et al. Spatial heterogeneity of cellulolytic activity and fungal communities within individual decomposing Quercus petraea leaves*	*Navratilova Diana (ECI)*	*3*	*2*	*1,3*	*2015*	*2016*	*http://www.sciencedirect.com/ science/article/pii/S1754504816301027*	*No*	*Yes*	*no*	Climate action	*Yes*	*Yes*	
6	*Bakker MR, Delerue F, Andreasson F, Ngao J, Dannoura M, Zeller B and D Epron. Hyphal growth in ingrowth mesh bags in Fagus sylvatica, Quercus petraea and Pinus pinaster stands in France.*	*Bakker MR*	*7*	*2*	*1*	*2015*	*2015*	*http://www.sciencedirect.com/ science/article/pii/S116455631530025X*	*No*	*Yes*	*no*	Climate action	*Yes*	*Yes*	
7	Soudzilovskaia, Olsson, Tedersoo. Abundance of arbuscular mycorhizal fungal mycelium in soil constitutes a good predictor of soil carbon turnover rate. (in prep)	Nadia Soudzilovskaia (ECI)	3	2	1	tbc	tbc	tbc	tbc	Yes	Yes (STSM)	Climate action	Yes	Yes	tbc
8	Marina Katanić, Saša Orlović, Tine Greben[2], Marko Bajc, Hojka Kraigher. Ectomycorrhizal communities of different spruce stands in Serbia. (in prep)	Marina Katanić (ECI)	5	2	2	tbc	tbc	tbc	tbc	Yes	Yes (STSM)	Food security	Yes	Yes	tbc
9	I. Pentimone, R. Lebrón, M. Hackeberg, L. Rosso, M. Colagiero. F. Nigro, A. Ciancio. Comprehensive Expression Profile of Non-Coding Small RNAs in tomato roots during Pochonia chlamydosporia endophytism. (in prep).	Isabella Pentimone (ECI)	7	4	3	tbc	tbc	tbc	tbc	Yes	Yes (STSM)	Food security	Yes	Yes	tbc
10	Šunje E, Hackenberger B., Jelić D, Muller M, Helfer, V. Registered environmental impact in expressing higher variation in morphological characters of isolated Salamandra atra prenjensis (Bosnia and Herzegovina).(in prep)	Emina Sunje (ECI)	5	2	1	tbc	tbc	tbc	tbc	Yes	Yes (STSM)	Climate action	Yes	Yes	tbc

[2] MC Member/ MC Substitute/ MC Observer/ WG Member/ Training School Trainee/ STSM Recipient/ Other Action Participant

[3] Open Access is defined as free of charge access for anyone via Internet. Please answer "yes" if the open access to the publication is already established and also if the embargo period for open access is not yet over but you intend to establish open access afterwards.

[4] H2020 Societal Challenges are “Health, demographic change and wellbeing”; “Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy”; “Secure, clean and efficient energy”; “Smart, green and integrated transport”; “Climate action, environment, resource efficiency and raw materials”; “Europe in a changing world - inclusive, innovative and reflective societies”; “Secure societies - protecting freedom and security of Europe and its citizens”

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FP7/ H2020 Proposals and projects

This table contains FP7/ H2020 proposals/ projects spinning off from Action activities and including in the proposing consortium at least three Action participants from at least three different countries participating in the Action.

NO.	Title	Name and country of main proposer	Number of proposers	Action participants listed among the proposers (Name, country, role[3] in the Action)	Funding agency submitted to	Date submitted	Date results expected	Result	Call identifier	Relevance to H2020 Societal Challenges[4]?	Was the added value of the Action Networking necessary for the proposal / project?
Projects											
1	Break down to build up: the functional ecology of carbon fate from litter to soil	Weedon JT	1	Members of WG1 contributed to study design	NWO - The Netherlands	2016	2016	Funded	016.Veni.171.089	Climate action	Y
2											
Proposals											
	List FP7/ H2020 proposals submitted as a result of the Action in this section of the table										
1	Effect of climate conditions on belowground carbon turnover and soil biodiversity in European forests (BaCkBOnE)	Borja Isabella	7	Manuel Fernandez-Lopez, Paola Grenni, Douglas L. Godbold, Markus Gorfer	ERA-NET	2016	2017	submitted	SFS-25-2016	Climate action	Y
2	Calcium mobilisation by fungal symbionts	Luis Gonzaga	11	Lukac M, Kunca V	H2020	2017	2017	submitted	TOPIC SFS-232	Climate action	Y

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I.C. Networking

Added value of the Networking

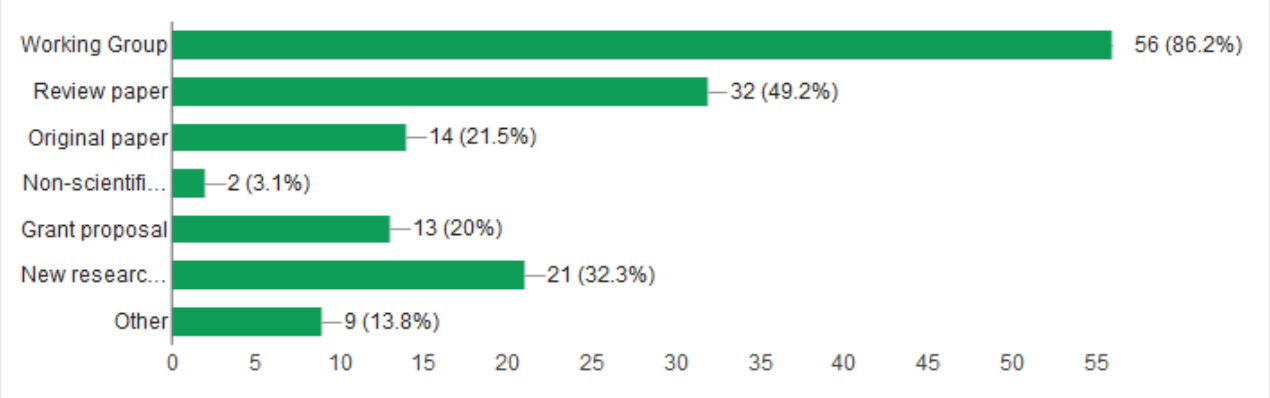
Participant feedback received so far indicated that the level of networking offered and supported by the Action is one of the key benefits generated. Several sub-groups initiated collaboration on spin-off projects. These range from involvement in teaching activities, research student supervision and design of teaching materials to research project proposals and researcher exchange. A participant questionnaire has been used to gather feedback on BioLink, the word cloud on the left indicates the main motivation for researchers to participate in the Action. They have subsequently given the Action an average score of 4.6 / 5 to describe the success of BioLink in helping them to achieve the goals ascribed to participation.

All STSM participants report that this activity significantly advanced their career due to offering access to expert researchers across Europe. Most STSM participants indicate that research collaboration will continue in the future and further researcher exchanges are planned even without a direct financial support by the Action.
Biolink is well integrated into the European scientific community working on soil biodiversity and has achieved a reasonable impact globally. We have active participation from Japan, Mongolia, China, Nepal, USA and Jordan. Biolink continues to be advertised to global researcher community, with dedicated presentations and posters.

Extent of the networking

No distinction is made between the participants with regards to access to networking and resources provided by the Action. Whilst it is not possible to encouraged all participants to contribute to all activities, current feedback (November 2016) indicates that participants do find the Action supportive and encouraging with regards to networking and find the balance of Action activities just about right.

Early Career Investigators are well integrated into the Action, ECI participation at the time of writing was 49% out of the total of 238 people involved with the Action since the start. Apart from the very first, each meeting of the Action featured presentations and talks by ECI. There is a concerted effort to involve ECI in the collaboration which will result in the publication of opinion and review paper. In numerous occasions, an ECI is leading this activity. BioLink is effective is supporting a wide range of scientific activities, as evidenced by involvement of participants in various efforts (out of 67 responses):



The Action is very well balanced with regards to gender (50% female, 119/238) and participation from Inclusiveness countries (44%, 105/238). Three out of five Action meetings have been organised in inclusiveness countries (Poland, Bulgaria and Czech Republic), with one more planned in Estonia in June 2017.

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I.D. Impacts

The impacts that have resulted, or might result from the Action are described in the following table.

Description of the impact	Type of impact[5]	Timing of impact[6]
Maps of global drivers of intensity of root colonization (Soudzilovskaia et al GEB 2015), are included in The Soil Biodiversity Atlas prepared by the global soil biodiversity initiative (https://globalsoilbiodiversity.org/	Scientific/technological	2016
Interim outputs of BioLink were incorporated into the syllabus of the "Interactions in the soil-plant-microbe system" course (University of Szeged, Hungary	Societal	2015
Key findings from WG3 activities will be used to generate some of the teaching and support material for 'Climate Smart Agriculture' MOOC .	Societal	2017
BSSS (British Society of Soil Science) members of BioLink utilised some of the materials presented at BioLink meetings in talks and presentations at regional meetings of the Society.	Societal	2016

I.E Dissemination and exploitation of Action results

Describe the Action's dissemination and exploitation approach as well as all activities undertaken to ensure dissemination and exploitation of Action results and the effectiveness of these activities.			
Add description here			
Item/ activity	Target audience	Result	Hyperlink

I.F. Action success(es)

COST regularly communicates the successes of Actions. At this point in time what aspect(s) (outcomes and/ or impacts, rather than activities) of this Action is/ are the most suitable for communication?

Description of the success story	Dimension of the success ■ Breakthrough: scientific, technological or socioeconomic ■ Policy implementation (specify which policy) ■ Capacity building
Action participants are preparing two bids for H2020 funds, making use of the fact that Action members focus on different aspects of soil biota and function, as well as different types of tree ecosystems.	Capacity building
The Action aims to produce policy briefing materials detailing the role of soil biodiversity in ecosystem productivity (WG1), the need for its conservation and utilisation in managed ecosystems (WG3).	Policy implementation: CAP, conservation.

[5] Scientific/ technological, Economic, Societal
[6] Achieved/ Foreseen within 2 years/ Foreseen 2-5 years/ Foreseen 5-10 years/ Foreseen 10+ years

II. Management Report

II.A. Overview of expenditure

Insert below in the yellow cells the summary of figures from the Yearly Financial Reports (YFRs) of completed Grant Periods and an IFR of any incomplete Grant Period – the Totals (non-yellow cells) will automatically sum.

	Grant Period 1	Grant Period 2	Grant Period 3	TOTAL
GP start and end dates	(01/06/2014-31/05/2015)	(01/06/2015-30/04/2016)	(01/05/2016 - 30/04/2017)	
Grant Holder institution	University of Reading (UK)	University of Reading (UK)	University of Reading (UK)	
Meetings	EUR 132,153.25	EUR 115,366.96	EUR 44,369.00	EUR 291,889.21
Training Schools	EUR -	EUR 16,848.00	EUR -	EUR 16,848.00
STSMs	EUR 27,280.00	EUR 13,080.00	EUR 9,900.00	EUR 50,260.00
Dissemination	EUR 2,000.00	EUR 1,500.00	EUR -	EUR 3,500.00
OERSA[1]	EUR 489.52	EUR 1,000.00	EUR -	EUR 1,489.52
Total Scientific Expenditure	EUR 161,922.77	EUR 147,794.96	EUR 54,269.00	EUR 363,986.73
FSAC[2]	EUR 24,288.42	EUR 22,169.24	EUR 8,140.35	EUR 54,598.01
TOTAL	EUR 186,211.19	EUR 169,964.20	EUR 62,409.35	EUR 418,584.74

[1] OERSA = Other Expenses Related to Scientific Expenditure (e.g. bank charges)
[2] FSAC = Amount received by Grant Holder for Financial Scientific and Administrative Coordination

II.B. Budget and Participation management

II.B.1 Budget spent in relation to individuals/ institutions outside participating COST countries

STSMs from or to institutions from countries other than Participating COST countries

The table below describes the added value STSMs to approved institutions in IPC or NNC or Specific Organisations and any STSMs from an approved institution in an NNC to a participating COST country.

Grantee		Host		Date	Topic and value added to the Action
Institution	Country	Institution	Country		
n.a.					

Invited Speakers

The table below highlights the added value of Invited Speakers from COST countries that have not accepted the MoU and/ or non-participating NNC, IPC or Specific Organisations whose participation at a meeting or Training School was reimbursed by the Action.

Participant name	Institution	Country	Event date	Topic and added value to the Action
n.a.				

Dissemination meetings

The table below highlights the added value of Dissemination Meetings financed from Action funds.

Participant name	Role	Country	Date	Location	Topic and added value to the Action
n.a.					

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II.C. Participants

Management Committee		
Name	Country	Email address
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Annex 1

Definitions:

COST Action Challenge (main aim)	"The research question addressed by the COST Action targeting scientific, technological, and / or socioeconomic problems"
COST Action Innovation	"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"
COST Action objectives	"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."
COST Action research coordination objectives	"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."
COST Action capacity building objectives	"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."
COST Action networking activities	"any activities organised by the COST Action (whether or not directly funded by COST) in order to achieve research coordination and capacity building objectives."
COST Action networking tools	"instruments through which eligible activities can be funded"
COST Action outputs	"direct results from the COST Action activities. These can be codified knowledge, tacit knowledge, technology, and societal applications."
COST Action impact	"the short- to long-term scientific, technological, and / or socioeconomic changes produced by a COST Action, directly or indirectly, intended or unintended."
COST Action deliverable	"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."
COST Action milestones	"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)"
Inclusiveness Target Country (ITC):	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.

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