Version 2015-06-12

COST Action FP1305
(Action 14/05/2014 – Action 13/05/2018)

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

PROGRESS REPORT 1
(14/05/2014 – 29/11/2015)

This report is submitted by the MC Chair on behalf of the Management Committee and is validated by the Scientific Committee of the COST Association.

Confidentiality: the document will be made available to the public via the Action page on the COST website except for Section II.D.

Executive summary of the Progress Report:

Just over a year into its existence, BioLink has laid a solid foundation for 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 significant number of experts and scientists. To date, more than 210 people actively participated in the activities organised by the Action, with 50/50 gender balance and significant contribution from researchers based in Inclusiveness countries. Each of the four WGs is working on a delivery of a number of review papers which will provide peer-reviewed evidence base for the provision of opinion and policy papers to be created later in the course of 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 in order to gain contacts to facilitate exchange and visiting positions. One of the sessions of the first meeting was dedicated to brainstorming and generation of research ideas which will continue to inform Action agenda and steer its focus on specific subjects. This stimulates continuous involvement of ECI in driving Action activities to suit their needs. To date, the Action has supported 20 STSMs and organised a well-attended training school, both of which received an excellent feedback from participating ECI. Several research collaborations have been established as a result of STSM exchange of researchers, leading to publications or to a long-term research collaboration and grant proposals.

It has to be stressed that the involvement of ECI in continuing EU-wide collaboration is one of the key outcomes of the Action. 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. This far, the Action has succeeded in informing and improving several national research and education projects and aims to generates at least two H2020 pan-European proposals. Soil biodiversity is a fast expanding topic, the Action will continue to seek to involve experts and representatives of other organisations involved in its study in order to improve competitiveness of European Research Area.

BioLink is in the process of delivering two edited monographs, one being a Handbook of Soil Biodiversity aimed at starting and established researchers and detailing current knowledge of soil biodiversity and methods used in its study. The other monograph currently in preparation is volume synthesising information on the role of belowground biodiversity in aboveground ecosystem production. This volume, together with peer-reviewed publications will be used to generate outputs aimed at less scientific audience, but with wider policy and societal impact.

Summary assessment of Progress Review by Action Rapporteur:

The COST Action FP1305 (BioLink) has done an impressive amount of work during first two grant periods. The main topic of this action is to summarise current knowledge of functional belowground biodiversity in forest ecosystems, to compare experimental and model results from natural forests and tree-crop concerning effects of soil biodiversity and to integrate new theoretical and technological advances in a form suitable for modellers, policy makers and end-users. The Action has been managed and coordinated professionally by the enthusiastic Chair, the MC and WG members.

The COST action has been very productive during two first grant period: good collaboration inside of Action, many joint papers have been published in international peer-reviewed journals or are currently under preparation or under discussion, well-structured and informative website with its own logo, many STSM's, very well evaluated Training Schools which may have a long-lasting effect on the early career investigators who attended them. The scientific interest is high, further research exchanges are planned even without a direct financial support by the Action. Important output of this Action is also well prepared and organized four international meetings with high scientific interest (two of them has been organised in inclusiveness countries). The international experts have been invited to identify new cross-disciplinary research areas. One of the most important outcomes of this Action, the monograph "Handbook of Soil Biodiversity" is in the process of publishing.

Work of the different work groups has been excellently planned: WG1 attempts to find biodiversity indicators and traits linked to ecosystem functions; WG2 is preparing an opinion paper for utilising current knowledge to build a functional framework for soil organisms etc.

Networking - BioLink is well integrated into the European scientific community working on soil biodiversity. Action is well balanced with participations from Inclusiveness Target Countries (42%). Action has been involved in preparation of at least two FP7/H2020 projects and this will be accounted as long term impact of the COST action. Gender equality is very well balanced (50% females).

Since the COST Action itself is quite multidisciplinary, they don't have expectations for interactions with other COST actions. The Action could find opportunities for cooperation with other relevant Actions. In general, experimental and modelling communities could find more common share to intensify collaboration and interaction between different parties.

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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:	13/05/2018

COST Member Countries and Cooperating State having accepted the MoU

Parties

Country	Date	Country	Date	Country	Date	Country	Date
Austria	28/11/2013	Belgium	29/01/2014	Bosnia and Herzegovina	20/11/2013	Bulgaria	05/02/2014
Croatia	17/12/2013	Czech Republic	14/01/2014	Denmark	27/11/2013	Estonia	29/11/2013
Finland	07/04/2014	France	13/12/2013	Germany	07/01/2014	Greece	11/12/2013
Iceland	25/11/2013	Ireland	21/01/2014	Israel	20/07/2015	Italy	02/04/2014
Latvia	13/02/2014	Lithuania	03/02/2014	Netherlands	19/12/2013	Norway	05/03/2014
Poland	02/12/2013	Portugal	21/01/2014	Romania	05/12/2013	Serbia	26/03/2014
Slovakia	12/01/2014	Slovenia	20/03/2014	Spain	28/11/2013	Sweden	25/02/2014
Switzerland	17/01/2014	Turkey	14/01/2014	United Kingdom	21/11/2013		

Total: 31

Intentions to accept the MoU

Country	Date	Country	Date	Country	Date	Country	Date
Hungary	N/A	Montenegro	N/A				

Total: 2

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	40

2	Microbial and faunal functional biodiversity in belowground food-webs.	Johannes Rousk	SE	2009	M	36
3	Belowground biodiversity in plantations and tree crops.	Mauro Gamboni	IT	n.a.	M	21
4	Functional diversity in forest models.	Gaby Deckmyn	BE	n.a.	F	15

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
WG3 Vice leader	Christos Athanassiou	GR	1999	M
WG4 Vice leader				

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 forseen
1. To summarise current knowledge of belowground biodiversity in forest ecosystems across a management intensity gradient.	Partially	Several review papers are currently being prepared by each of the WGs. WG1 is preparing an overview of biodiversity indicators and traits linked to ecosystem function.
2. To integrate new theoretical and technological advances in biodiversity research in the forest ecosystem research community.	Partially	WG2 is preparing 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.	No	The Action participants have identified multiple points of contact with practicioners and wider public. The content to be communicated will be spun off from the publications currently in prep, focusing on the salient points identified as critical by WGs.
4. To collate and exchange recent findings from experimental and observational studies of belowground biodiversity in perennial tree crops and simplified ecosystems.	Partially	Action Chair is currently negotiating a publishing contract with Palgrave to produce a Handbook of Soil Biodiversity. Contributions from Action participants will review current knowledge and outline possibilities for future progress.
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 designing a modelling framework which will address the relationship between aboveground system performance and belowground biodiversity.

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

6. To identify new cross-disciplinary research areas.	Partially	International experts working in areas connected to, but not strictly focussed, on soil diodiversity 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	3/5	Good progress, the Action has achieved fairly good name recognition this far, evidenced by the number of membership queries received weekly. 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	3/5	Purposeful involvement of invited experts and ECI in Action activities generates a collegial and positive atmosphere. New technology development an application will be publicised via the Handbook of Soil Biodiversity monograph.
3. dissemination of information designed for end-users such as forest owners and managers	1/5	Content development at this stage. Once that step is complete, we will disseminate via website and press.
4. expert network dedicated to the study of diversity gradients in forest ecosystems	1/5	Some progress on identifying and categorising current knowledge, the Action will focus on identifying key elements linking the complexity of aboveground production system to belowground diversity and function.
5. development of new forest ecosystem modelling concepts	2/5	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	2/5	A good number (currently 5 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

Please describe any other outputs and achievements that have resulted or are in progress, focusing in particular on those that contribute 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.”
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 initiation of novel and groundbreaking 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.

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Thus far, BioLink has supported 14 STSMs in its first grant period, 6 in the second grant period, with one call for STSM currently open to offer support for missions at the beginning of 2016. Many of the STSMs have resulted in 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

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.

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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	Andrey Yurkov, Oliver Röhl, Ana Pontes, Cláudia Carvalho, Cristina Maldonado & José Paulo Sampaio. 2015. Local climatic conditions constrain soil yeast diversity patterns in Mediterranean forests, woodlands and scrub biome. FEMS Yeast Research (in press).	Andrey Yurkov (ECI)	6	3	2	Apr 2015	2015	http://dx.doi.org/10.1093/femsyr/fov103	no	no	no	Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy	Yes	Yes	2.8
2	Douglas L.G., Vašutová M., Wilkinson A., Edwards-Jonášová M., Bambrick M., Smith A.R., Pavelka M., Cudlin P. 2015: Elevated atmospheric CO2 affects ectomycorrhizal species abundance and increases sporocarp production under field conditions. Forests-04/2015, 6:1256-1273	Douglas L. Godbold	8	4	1,3	Dec 2014	2015	doi: 10.3390/f6041256	Yes	no	no	Climate action, environment, resource efficiency and raw materials	Yes	Yes	1.5
3	Proença DN, Francisco R, Schloter M, Morais PV. 2015.Endophytic Microbiome of Pine Trees in Affected Areas with Pine Wilt Disease. (in Submission to Environmental Microbiology).	Diogo Proenca (ECI)	4	2	3	tbc	tbc	tbc	tbc	Yes	Yes (STSM)	Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy	Yes	Yes	tbc
4	Poláčková T., Sampaio JP., Baldrian P. Description of four novel basidiomycetous yeast species frequent in temperate forest topsoil" (in prep)	Tereza Polackova (ECI)	3	3	1	tbc	tbc	tbc	tbc	Yes	Yes (STSM)	Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy	Yes	Yes	tbc
5	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, environment, resource efficiency and raw materials	Yes	Yes	1.0
6	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, environment, resource efficiency and raw materials	Yes	Yes	tbc
7	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, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy	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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8	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, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy	Yes	Yes	tbc
9	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) populations restricted to high mountanious areas, compared to continuous forested population of Salamandra atra atra (Austria). (in prep)	Emina Sunje (ECI)	5	2	1	tbc	tbc	tbc	tbc	Yes	Yes (STSM)	Climate action, environment, resource efficiency and raw materials	Yes	Yes	tbc
10	Zhun Mao, Mark Bakker, Alexia Stokes, Martin Lukac. Plant root traits drive terrestrial biodiversity in multiple scales. (in prep)	Zhun Mao (ECI)	4	3	1,2	tbc	tbc	tbc	tbc	Yes	Yes (STSM)	Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy	Yes	Yes	tbc

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	Not submitted at present, at least two in preparation.										
Proposals											
	List FP7/ H2020 proposals submitted as a result of the Action in this section of the table										

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. The Action got off to a very good start at the first meeting in Reading where, alongside the formal grouping in WGs, 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. All STSM participants report that this activity significantly advanced their career due to offering access to expert researches across Europe. Majority of STSM reports 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 but also globally. We have active participation from Japan, Mongolia, China and Nepal. Biolink was and continues to be advertised to global researcher community, with dedicated presentations or posters. Some of the venues are listed below: "IUFRO – Sixth International Symposium on Dynamics of Physiological Processes in Roots of Woody Plants" in Nagoya, Japan, September 2014 XXIV International Union of Forest Research Organizations World Congress, 6.-11.10.2014 in Salt Lake City, USA. First Global Soil Biodiversity Conference - Assessing soil biodiversity and its role for ecosystem services 2-5 December 2014 | Palais des Congrès, Dijon, France XLVII meeting of The Organization of Nematologists of Tropical America (*ONTA*), Varadero, Cuba. May 2015. Ecology of soil Microorganisms 2015 Microbes as Important Drivers of Soil Processes. 29.11. - 3.12. 2015, Prague, Czech Republic.
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, early feedback indicates that participants do find the Action supportive and encouraging with regards to networking. Time and space is provided at every meeting of the Action to allow participants to exchange ideas and discuss collaboration. Early Career Investigators are well integrated into the Action, ECI participation at the time of writing was 47% out of the total of 213 people involved with the Action since its start. Apart from the very first, each meeting of the Action features 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. The Action is very well balanced with regards to gender (50% female) and participation from Inclusiveness countries (42%). This far, two out of four Action meetings have been organised in inclusiveness countries (Poland, Bulgaria in spring 2016), with more planned in the future (Estonia, possibly Portugal).

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	Scientific/technological	2015/2016

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

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Biodiversity Atlas prepared by the global soil biodiversity initiative (https://globalsoilbiodiversity.org/		
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
Several thematic outcomes of BioLink presented and discussed with forest stakeholders from the Krkonose National park: "The influence of human activities on the ecosystem functions and services in the Krkonose Mts. under climate change" in Vrchlabi, Czech Republic .	Societal	2015
BSSS (British Society of Soil Science) members of BioLink utilised some of the materials presented at BioLink meetings in talks and presentations in a number of primary schools in the UK to coincide with the International Year of Soils.	Societal	2015

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

No specific dissemination or exploitation activity took place during the first reporting period. Activity of the Action is focused on synthesising current knowledge at the present. The Action will make full use of its outputs at later stages when concise and coherent blocks of information can be presented to targeted audiences. The Action will make use of its website, but also of monograph publications, opinion pieces in trade and industry journals and by using participant organisations' press offices.

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
na	

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)	(01/06/2015-31/05/2016)	(dd/mm/yyyy-dd/mm/yyyy)	
Grant Holder institution	University of Reading (UK)	University of Reading (UK)	GH institution name (country code)	
Meetings	EUR 132,153.25	EUR 114,850.00	-	-
Training Schools	EUR -	EUR 19,160.00	-	-
STSMs	EUR 27,280.00	EUR 20,000.00	-	-
Dissemination	EUR 2,000.00	EUR 1,500.00	-	-
OERSA[1]	EUR 489.52	EUR 1,000.00	-	-
Total Scientific Expenditure	EUR 161,922.77	EUR 156,510.00	-	-
FSAC[2]	EUR 24,288.42	EUR 23,476.50	-	-
TOTAL	EUR 186,211.19	EUR 179,986.50	-	-

[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.		n.a.		n.a.	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.	n.a.	n.a.	n.a.	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.	n.a.	n.a.	n.a.	n.a.	n.a.

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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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