

COST

Domain Committee "Forests, their Products and Services (FPS)"

COST Action FP0902

Start Date 28.9.2009

*Development and Harmonization of New Operational
Research and Assessment Procedures for
Sustainable Forest Biomass Supply*

MONITORING PROGRESS REPORT

Reporting Period: from 1 January 2010 – 31 December 2010

This Report is presented to the relevant Domain Committee.
It contains three parts:

- I. Management Report*** prepared by the COST Office/Grant Holder
- II. Scientific Report*** prepared by the Chair of the Management Committee of the Action
- III. Previous versions of the Scientific Report;*** i.e., part II of past reporting periods

The report is a "cumulative" report, i.e. it is updated annually and covers the entire period of the Action.

Confidentiality: the documents will be made available to the public via the COST Action web page except for chapter *II.D. Self evaluation*.

Based on the monitoring results, the COST Office will decide on the following year's budget allocation.

Executive summary (max.250 words):

The Action has now been running for 15 months and after the start-up and get to know each other phase the switch to the actual Action work has been done. Work is progressing well in all of the 4 working groups. During the project period the Action organized two meetings. The Action kick-off meeting was organized in Berlin, Germany in January 2010 and the second meeting was held in Trento, Italy in October 2010. The Trento meeting included an international conference in which Action participants presented their experiences and research results. The conference drew a large audience with more than 300 registered participants from around the globe.

The Action organized a Training School in Vienna in June 2010 in which 30 people participated and most trainers (4/5) were COST Action participants.

The Action also provided the opportunity for 12 individuals to participate in an STSM in 2010 and included two RSTSMs with one going to South Africa and one to Australia.

The first year of the Action was also marked by the establishment of an online Portal that included the Action website with.

- An **Online Wiki tool**
- An **expert database**
- A **company register**
- A **database on harvesting guidelines**
- A online database of publications and presentations called the **Forest Energy Observer**.
- The **Forest Energy Blog**
- A **video platform**
- A social networking site called **Logger's camp**
- The **Journal of Forest Energy**, a peer reviewed online

I. Management Report prepared by the COST Office/Grant Holder

Action FP0902 Fact Sheet

Title
Development and harmonisation of new operational research and assessment procedures for sustainable forest biomass supply

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Details	
Draft Mou:	Mou: 223/09
Start of Action: 29/09/2009	Entry into force: 26/06/2009
End of Action: 28/09/2013	CSO approval date: 26/05/2009

Objectives
The main objective is to harmonise forest energy terminology and methodologies of forest operations research and biomass availability calculations thereby building the scientific capacity within forest energy research and supporting the technology transfer of the forest biomass procurement chain and sustainable forest management. At present the use of forest biomass for energy is an increasingly important topic particularly in light of the debate on climate change. Forest biomass offers the largest potential as a renewable fuel. In order to ensure the reliable and sustainable supply of forest fuel new technological solutions to procure forest biomass are needed. By harmonising research methodologies in forest biomass operations research it is anticipated that more solid conclusions can be drawn from research results since the Action enables more comparable repetitions of the same studies across Europe. Furthermore, research results will be more comparable and the generalisation of research results will be improved. The Action will provide an original synthesis of multidisciplinary research efforts and an innovative European wide reference for forest biomass for energy terminology, sampling methods, standard measurements, and research methodologies. This synthesis will promote the increase in the use of forest biomass for energy as laid out in the EU strategies. Through the possibilities of the networking concept, the most suitable research methods can be identified, harmonised and standardised throughout the EU. The Action contributes to provide a more solid basis for the decision making on national and EU levels on biomass supply.

Parties							
Country	Date	Country	Date	Country	Date	Country	Date
Austria	29/07/2009	Bulgaria	04/03/2010	Czech Republic	31/07/2009	Denmark	03/12/2009
Estonia	10/09/2009	Finland	10/09/2009	Former Yugoslav Republic of Macedonia	31/07/2009	France	23/10/2009
Germany	26/06/2009	Greece	04/08/2009	Iceland	30/09/2010	Ireland	26/06/2009
Italy	26/06/2009	Latvia	09/07/2009	Lithuania	07/01/2010	Netherlands	25/09/2009
Norway	15/09/2009	Poland	26/06/2009	Portugal	29/07/2009	Slovak Republic	25/11/2009
Slovenia	17/03/2010	Spain	25/09/2009	Sweden	03/12/2009	Turkey	05/03/2010
United Kingdom	26/06/2009						

Total: 25

Intentions to accept the MoU

Country	Date	Country	Date	Country	Date	Country	Date
Serbia	N/A						

Total: 1

Participating Institutions from non-COST countries

Japan	Forestry and Forest Products Research Institute
Australia	CRC Forestry Ltd.
New Zealand	University of Canterbury
United States	University of California
South Africa	Stellenbosch University
Canada	FPInnovations-Feric Division
Canada	Natural Resources Canada - Canadian Forest Service

Working Groups

None

Website

<http://www.forestenergy.org/>

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Grant Holder		
Executive	Finance Officer	Legal Representative
Finnish forest Research Institute		

I.C. Overview activities and expenditure

2009/2010 Budget

Total Action Budget: 164 079,51

Remaining Action Commitment: 0

Meetings

Meeting Type	Date	Place					Cost	Total
Management Committee Meeting, Working group Meeting	27-01-2010	Berlin, Germany						38736,44
Working group meeting, Workshops/Conferences, Management Committee Meeting	06-10-2010	Trento, Italy						57396,58

STSM

Beneficiary	Date	Place	To				Cost	Total
Johannes Windisch	10-04-2010	Finland	Canada					3000
Dr. Francesco Neri	23-05-2010	Italy	Ireland					2150
Ivailo Markoff	14-06-2010	Bulgaria	Germany					1500
Prof. Sotir Glushkov	14-06-2010	Bulgaria	Austria					2100
Dr. Martin Döllner	13-09-2010	Germany	Finland					1400
Dr. Carla Nati	23-10-2010	Italy	Sweden					1520
Augusto Uasuf	24-10-2010	Germany	Finland					1490
Laura Ivorra	01-11-2010	Spain	Italy					2000
Dr. Kaspars Liepins	06-12-2010	Latvia	Italy					750
Martins Zeps	06-12-2010	Latvia	Italy					750

Workshops

Title						Cost	Total
							0

General Support Grants

Beneficiary	Date					Cost	Total
							0

Schools

Title	Date	Place					Cost	Total
System Analysis in biomass Utilization	06-06-2010	Vienna						27136,49

Dissemination

Title	Date	Place					Cost	Total
forestenergy.org website production	14-12-2010							2150
Logger's Camp social networking site	16-12-2010							1000

Others

FSAC								21000
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Total 164 079,51

II. Scientific Report prepared by the Chair of the Management Committee of the Action, describing results achieved during the Action operation in this period, in no more than 3 pages (the report is "cumulative"). All items listed in Sections A, B, and C, below, must be addressed.

The Action has now been running for 15 month and work to reach the set objectives is well under way. The Action's tasks are divided into 4 different Working Groups. The progress in the separate WGs is as follows:

WG 1 Forest biomass terminology and units

Milestone 1 of the Action has been accomplished with a web based database with the most relevant terms and units. This list has been combined into a Wiki tool that incorporates an online discussion forum that lists more than 200 relevant terms that are now open for internal discussion among members of WG 1. The collection of these terms has been the most time consuming task in the first year of the Action and has taken longer than originally expected. The checking and relevance of these terms and definitions is still ongoing and special task force teams have been established in the Trento meeting in October 2010 that deal with a certain topic group. Furthermore, the collected terms and definitions are now being compared to existing literature originating from, for example, FAO and IUFRO. The work in these taskforces will continue in 2011 and a separate WG1 meeting is anticipated in the spring of 2011 where the list of terms and definitions will be completed. Furthermore, the links to the other WGs have been established but there is a clear need to strengthen them in 2011. The WG has also decided to refer to report results in presentations and reports as €/ odt and €/ MWh.

WG 2 Operations research and measurement methodologies

During the first meeting in Berlin a template was produced in order to have a common base for conducting a general survey of work study methods used by WG member institutions and countries. This document was then sent to the WG members, asking them to provide representative data for their countries. After two mail solicitations and a few more verbal solicitations on occasion of the international FORMEC conference in the first week of July, 10 templates out of 20 were received by mid-August.

On this basis, a BPG draft was prepared to be used as a common reference document to work on at the next meeting in October.

The idea was to produce a very simple manual, which would stick to the essentials and would be structured as a main text, with small boxes dealing into more detail with specific issues.

An essential bibliography was also compiled, to support the statements in the BPG and also to provide a reference to BPG readers who may eventually wish to explore specific topics more deeply. Many of these references were sourced or transformed in pdf format, and WG members were asked if they can provide other relevant material in the same format. This way, the final version of the BPG could be linked to an on-line library containing the essential bibliography.

The first BPG draft was circulated to a small number of experts within the Action, in order to get a first general screening and feedback (among them Karl Stampfer, Bruce Hartsough and Rien Visser)

After receiving some feedback and making the necessary amendments, the draft was circulated to all WG members in September. Both the contents and the structure of the document were the main subjects of WG2 discussions in Trento. The participation of the WG members was very active, with many comments and suggestions to the draft. All of them agreed about the content with small revisions: change of the structure and order of the paragraphs and add some aspects in order to complete the BPG. Seven experts volunteered to work on the revision, by sending new chapters, paragraphs, tables or structural improvements. After receiving 5 out of the 7 contributions originally offered, the BPG draft was edited and circulated in revised form on January 5th, 2011.

WG 3 Machine cost calculation and data analysis methodologies

The main focus of WG 3 during 2010 has been to develop a harmonized cost calculation model. In order to get a better overview of the different calculation procedures and tools a survey among Action participants was carried out and a first draft has been compiled. Now the WG has some examples of calculation that are sent out as a discussion base and for comments. This will encourage more and lively discussions at the next meeting in Vienna in 2011. The calculations themselves were found to be rather straightforward however, the challenge in the WG is to make a transparent calculation model where the effects of country based influences such as subsidies and tax systems are clear.

WG 4 System Analysis and modelling in forest operations

The focus of WG 4 has been on the compilation of national reports about existing system analysis methodologies in participating COST countries. Furthermore, contacts have been established with the BEE project which is part of FP7 and was aiming to harmonize forest biomass assessment procedures. The aim of the cooperation is to utilize the newly developed tool of the BEE project and also disseminate them to the COST participants. WG 4 is on track for the objectives it has, particularly with the progress made around the national reports in the discussion at the Trento meeting. The current challenge of the WG is that so far the methods used in different countries have been simply identified and after a quick review there is not a real common thread through them. In 2012 the working group will need to sort through the current national reports we have and generate a set of base definitions for two or three different levels of modelling to recognise the range of needs/interests.

Another important output of the WG 4 is the work that was started in one of the STSMs. During the STSM practical, simple to use, instructions on how to properly carry out simulation studies of forest operations were initiated and introduced to the WG at the Trento meeting. These instructions will be further elaborated and then published in one of the publication outlets of the Action. Finally, WG 4 participants have been responsible for the very successful Training School in Vienna in June 2010.

Meetings

During the project period the Action organized two meetings. The Action kick-off meeting was organized in Berlin, Germany in January 2010 where Action participants got to know each other and the workplan for the coming years was established. The second MC meeting was also held in conjunction with the meeting in Berlin. The meeting included one day of excursions in which a heating plants using forest chips and a harvesting site in the forest were visited. Day 2 was started with a plenary session where the Action participants got to know each other and the Action was introduced to all participants. The afternoon of day 2 was reserved for WG meetings. On day 3 a plenary session in which the work in the WG was presented to the whole group marked the end of the meeting. The MC meeting was held in the afternoon of day 3. The meeting was very successful and provided a good start of the entire Action and provided the opportunity to network with existing and new colleagues in the field. The meeting schedule can be found in Annex I.

The second meeting was held in Trento, Italy in October 2010. The meeting started again with a field tour to visit several sites in the Italian Alps including a chipping operation, a cable yarder operation and a heating plant using wood chips. Day 2 of the meeting was marked by work in WGs and concluded with a plenary session to exchange the progress in the WGs. The MC meeting took place in the late afternoon on Day 2. The 3rd day was reserved for an international conference in which Action participants presented their experiences in the use of wood for energy. Furthermore, research results were also presented. The conference drew a large audience with more than 300 registered participants mainly from Italy but also with a large share of participants from around the globe. The conference was an ideal platform to present the work of the Action to a very large audience and also provide some dissemination and extension of the large body of experience in the Action. It was an excellent opportunity for the Action stakeholders to see that much research efforts are ongoing in the field. There was also a lively discussion in which the future research trends and needs have been identified. The overall program for the Trento conference can be found in Annex II and the program of the international conference in Annex III.

Training School

The Action organized a Training School in Vienna in June 2010 in which 30 people participated and most trainers (4/5) were COST Action participants. The program of the Training School can be found in Annex IV.

Short Term Scientific Missions

The Action also provided the opportunity for 12 individuals to participate in an STSM in 2010 and included two RSTSMs with one going to South Africa and one to Australia. An overview of the STSMs is given in Annex V.

Dissemination / Publications

The first year of the Action was also marked by the establishment of an online Portal that included the Action website. The “Forest Energy Portal” can be found at www.forestenergy.org and includes:

- An **Online Wiki tool** to establish the terms, definitions and units database
- An **expert database** for individuals working in the field of the Action
- A **company register** for the Action stakeholders
- A **database on harvesting guidelines** for forest biomass for energy
- An online database of publications and presentations called the **Forest Energy Observer**. This database also provides a mechanism to disseminate the Action outputs such as the STSM reports, Study reports, etc but also serves the research community and other stakeholders as a unique place to find multidisciplinary information regarding the use of forest biomass for energy
- The **Forest Energy Blog** that is maintained by several experts and gives insights into ongoing research efforts and other interesting stories related to forest energy
- A **video platform** where forest energy harvesting can be seen first hand
- A social networking site called **Logger’s camp** for researchers in the field to better and quicker exchange and share information

- The **Journal of Forest Energy**, a peer reviewed online journal to fill the gap of a fast peer reviewed publication outlet for the research work related to the use of forest biomass for energy.

II.A. Innovative networking

The beginning of the Action has been marked by the establishment and extension of networks among Action participants. There has been lively discussion at all Action events which have strengthened the network. The first year has also been marked by getting to know each other in plenary sessions and the WGs itself. The Action has also benefited from the large range of experience level in the Action. There is a very good mix of experienced scientists and ESR in the Action. The Action has provided an excellent platform to foster the networking with established experts in the field for ESR in the Action meetings, Training School (Vienna) and in the STSM's.

- *Innovative knowledge resulting from COST networking through the Action. (Specific examples of Results vs. Objectives)*
 - The establishment of the online wiki tool in WG1 is an innovative way to produce the term and unit glossary for a research discipline since it allows easy and real time access and offers a discussion platform for all Action participants from around the globe. This would have not been possible without the support from the COST Office and the participation of scientist from around Europe and the rest of the world.
 - Furthermore, also the other web tools provide a new innovative way to communicate with each other in the new era of communication using web 2.0 tools and thereby build new knowledge. Especially for ESR this will be a very effective way to communicate with each other in the future.
 - The Forest Energy Observer is another innovative knowledge tool to a) generate a common platform for research results and b) built a common dissemination tool for all involved stakeholders.
 - The company register is another form of innovative knowledge building and sharing. The company register provides a link between the research community and all other relevant industrial partners.
 - By having established the "**Forest Energy Portal**" a common platform for the scientific and industrial communities was created and it is expected that information flows will improve significantly in the future. The initial databases to provide these services would have not been established without the support of the COST Action.
- *Significant scientific breakthroughs as part of the COST Action. (Specific examples)*
 - The creation of the **Journal of Forest Energy** can be considered as a significant scientific breakthrough since it provides an fast peer review process and offers a publication platform for all issues related to forest biomass for energy.
 - Furthermore, the compilation of country reports and/or surveys in WGs 2,3 and 4 represent a significant data collection and will serve the Action and consequently the entire scientific community for many years to come
- *Tangible medium term socio-economic impacts achieved or expected. (Specific examples)*
 - All results and products mentioned above are expected to have a tangible medium and long term socio-economic impact through improved networking and improved availability of information and data, improved understanding and most of all improved scientific results.
- *Spin off of new EC RTD Framework Programme proposals/projects. (List)*

- The Action participants have formed several consortiums (at least 4) under the recent joint call of the WoodWisdomNet and Era-Net call for applications.
- Several Action participants also participated in 2 project proposal to Intelligent Energy Europe called LogIn20 and BioLocal
- Other networks with links to COST Action FP0902 are the OSCAR network, CAR-ES network and IEA Bioenergy Task 43 “Biomass Feedstocks for Energy Markets”
- At least 2 proposals to the COST Open call in September 2010 were prepared by several Action members
- *Spin off of new National Programme proposals/projects. (List)*
Many projects are currently going on in each of the participating countries and a comprehensive list cannot be presented. As an example 4 projects are mentioned:
 - The Finnish Forest Research Institute just approved the project: “Sustainable and Competitive Forest Biomass for Energy in Developing Markets – Opportunities for the Finnish Forest Biomass Sector” managed by Dominik Röser
 - TÜBİTAK - The Scientific and Technological Research Council of Turkey supports the project “Investigation on supply possibilities of logging residues in forestry” managed by Asst. Prof. Dr.Mehmet EKER
 - The European Regional Development Fund in Latvia supports the project “Elaboration of stump extraction head and forest regeneration technology for combined harvesting and soil preparation in spruce stands on mineral soils” managed by Andis Lazdins
 - The Cluster Holz & Technik, 39100 Bozen, Italy; Interreg IV is supporting the „Development of a cost calculation tool for timber harvesting operations” which is managed by Karl Stampfer, Austria

II.B. Inter-disciplinary networking

- *Additional knowledge obtained from working with other disciplines within the COST framework. (Specific examples)*
- *Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide scientific impacts. (Specific examples)*
- *Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide socio-economic impacts. (Specific examples)*
 - One of the greatest benefits of COST Actions is the facilitation of inter-disciplinary networking. This is also true for this Action. Despite the fact the Action has more of an operational aspect many other disciplines can be found among Action participants. Therefore, the Action can produce additional knowledge that could otherwise not be achieved. A good example of that is the **Journal of Forest Energy** with is a true multidisciplinary effort. The Journal is also having clear scientific impacts as well as socio-economic impacts. The same can be said for all other web services created by the COST Action. The Forest Energy Portal in itself is an inter-disciplinary effort providing information from a multi disciplinary group for a multidisciplinary group.
 - The glossary of WG 1 is another interdisciplinary result that could not be established with just one single discipline since it would never be accepted by all otherwise.
 - WG 4 is also aiming to find interdisciplinary solutions for the multifaceted challenges of our scientific field.
 - The level of inter-disciplinary networking is sufficient from a scientific and socio-economic point of view. It could always be improved however, when increasing inter-disciplinary even further is could lead to more problems rather than benefits and therefore the current state is seen as sufficient.

II.C. New networking

- *Additional new members joining the Action during its life.*
 - In 2010, Slovenia, Lithuania, Bulgaria, Turkey, Russia, Ukraine and Iceland joined the Action and Serbia has also the intention to sign the MOU
- *Total number of individual participants involved in the Action work. (Number of participants. Give % of female and of Early Stage Researcher participants)*
 - In 2010, approximately 165 individuals were involved or asked to be informed about Action activities. The share of females is approximately 20% and the share of ESR is at least 40%.
 - To the international conference in Trento, Italy in October 2010 more than 300 people registered to learn more about the COST Action its activities and ongoing research efforts in the participating countries.
- *Involvement of Early Stage Researchers in the Action, in particular with respect to STSMs, networking activities, and Training Schools. In addition, justification should be provided if fewer than 4 STSMs were carried out during the year.*
 - Early Stage Researchers are very well represented in the COST Action. This is represented in the fact that of the 12 STSMs granted in 2010 7 were granted to ESRs. Furthermore, the Training School during June 2010 that was organized in Vienna, Austria provided the opportunity for at least 25 ESRs (out of a total number of 30) to meet and network with some of the most respected scientists in the field of forest operations research. The Training School was an excellent tool to produce new ideas for research collaborations and establish new networks among ESRs.
- *Involvement of researchers from outside of COST Countries. (Number of participants from non-COST Countries approved by the CSO. Give % of such participants from countries with reciprocal agreements. Specify their contribution)*
 - As of January 2011 8 non-Cost countries have either joined the Action or are in the process of joining. The share of countries with a reciprocal agreement is 38% from the total number. 2 applications are from the near neighbour countries Russian and the Ukraine.
 - The contribution of participants from non-Cost countries has been significant and essential for the Action. Mark Brown from Australia has been nominated as a WG leader of WG 4 and is also acting as a Section Editor in the Journal of Forest Energy. Mark Ryans, Canada has taken a lead role in the creation of the glossary in WG 1 based on his extensive experience. Mark Ryans, Canada, Bruce Hartshough, USA, Pierre Ackerman, South Africa and Mark Brown, Australia have all contributed to the Trento International Conference (Annex III). Rien Visser, New Zealand has been a trainer in the Training School in Vienna (Annex IV). Furthermore the contributions to the ongoing work in each of the WGs by all of the non-Cost country participants have been outstanding.
- *Advancement and promotion of scientific knowledge through publications and other outreach activities. (Number of publications and other outreach activities that resulted from COST networking through the Action. Complete list should be given in an annex)*
 - The most important promotion of scientific knowledge of the Action has been the international conference organized in Trento, Italy (Annex III) that drew a very large audience from Italy and the rest of the world with more than 300 registered participants. Furthermore, the creation of the Forest Energy Observer, the Journal of Forest Energy and the Database on Harvesting Guidelines are all tools to promote the advancement of the latest scientific knowledge to all stakeholders. For example, all presentations given at the conference are now available in the Forest Energy Observer.
 - All STSM reports will also be published in the Forest Energy Observer
 - Knowledge gained in the different WG's (surveys, country reports, study reports, Best practice guidelines) will be published.
- *Activities and projects with COST network colleagues.*
 - The first year of the Action has shown that there is a very high level of collaboration and interaction among COST Action participants. During the conference in Trento several

consortiums were formed to plan new projects and to strengthen collaboration which is a good indication of the high level of cooperation among action participants. A complete list of these activities is not possible to provide at this point.

- *The capacity of the Action members to raise research funds*
- *The capacity to raise research funds of Action members is large. This is very well represented by the fact that at least 4 consortiums were formed to submit applications to the recent Era-Net/WoodWisdomNet call. The contacts, relationships and networks formed as part of this Action have definitely a positive effect on future project applications and more proposals can be expected in the future.*

III. Previous scientific report(s)

II. Scientific Report prepared by the Chair of the Management Committee of the Action, describing results achieved during the Action operation in this period, in no more than 3 pages (the report is “cumulative”). All items listed in Sections A, B, and C, below, must be addressed.

Additional documentation such as extended scientific reports, proceedings of workshops, seminars or conferences may be provided separately as an annex to this report, and should be referenced in the report.

II.A. Innovative networking

- *Innovative knowledge resulting from COST networking through the Action. (Specific examples of Results vs. Objectives)*
 - The first joint meeting has already shown clear advantages of the COST networking. Usually it is not possible to get so many scientists to discuss about challenges in the field and trying to find solutions. This was already very visible in the outcome of the WG meetings and the subsequent discussions. One very specific example is that it was decided that drying experiments of forest biomass should definitely be included in the scope of the Action since it is an essential part of the supply chain.
- *Significant scientific breakthroughs as part of the COST Action. (Specific examples)*
 - Since the Action has been operational for only 4 month this section is not yet applicable
- *Tangible medium term socio-economic impacts achieved or expected. (Specific examples)*
 - Since the Action has been operational for only 4 month this section is not yet applicable
- *Spin off of new EC RTD Framework Programme proposals/projects. (List)*
 - Since the Action has been operational for only 4 month this section is not yet applicable
- *Spin off of new National Programme proposals/projects. (List)*
 - Since the Action has been operational for only 4 month this section is not yet applicable

II.B. Inter-disciplinary networking

- *Additional knowledge obtained from working with other disciplines within the COST framework. (Specific examples)*
 - Since the Action has been operational for only 4 month this section is not yet applicable
- *Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide scientific impacts. (Specific examples)*

- Since the Action has been operational for only 4 month this section is not yet applicable
- *Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide socio-economic impacts. (Specific examples)*
 - Since the Action has been operational for only 4 month this section is not yet applicable

II.C. New networking

- *Additional new members joining the Action during its life.*
 - In the 2nd MC meeting it was decided to accept applications from Russia, Ukraine and Brazil to join the Action. Furthermore, Switzerland and Turkey are in the National processes to join the Action.
- *Total number of individual participants involved in the Action work. (Number of participants. Give % of female and of Early Stage Researcher participants)*
 - The total number of participants is estimated to be about 90. Nearly 50% of the participants are ESRs and the share of females is approximately 10%.
- *Involvement of Early Stage Researchers in the Action, in particular with respect to STSMs, networking activities, and Training Schools. In addition, justification should be provided if less than 4 STSMs were carried out during the year.*
 - *ESRs play an important role in the Action. Approximately half of the Action participants are ESRs. Furthermore, ESRs also play a key role in the management of the Action. Each Working Group has two leaders that manage the activities of the WG. The leadership of the WG's was set up so that an ESR and a more experienced scientist are jointly leading the WGs (except in WG). The MC committee decided to put a special emphasis for ESR's in both the announcement for STSM and the Training School.*
- *Involvement of researchers from outside of COST Countries. (Number of participants from non-COST Countries approved by the CSO. Give % of such participants from countries with reciprocal agreements. Specify their contribution)*
 - *The involvement of researchers from outside COST countries has been very successful. There are approximately 5 participants from countries without a reciprocal agreement. Furthermore, there are 3 active participants from Australia, 2-4 from South Africa and 1-3 from New Zealand. At the first meeting 2 representatives from South Africa and 1 each from Australia and Canada were present. Participants from the USA, Japan and New Zealand have not been able to participate in the meeting but have participated in the planning process of the meeting and are actively following the Action activities. Members from non-Cost countries have been very active in the WGs and have had valuable input in the discussions.*
- *Advancement and promotion of scientific knowledge through publications and other outreach activities. (Number of publications and other outreach activities that resulted from COST networking through the Action. Complete list should be given in an annex)*
 - Since the Action has been operational for only 4 month this section is not yet applicable
- *Activities and projects with COST network colleagues.*
 - *A survey about forest biomass activities has been sent to all COST participants and will be published in 2010.*
- *The capacity of the Action members to raise research funds.*
 - Since the Action has been operational for only 4 month this section is not yet applicable