

# COST

Domain Committee "ESSEM"

## COST Action ES 1105

Start Date 11 April 2012



*CYANOCOST - Cyanobacterial blooms and toxins in water resources: Occurrence, impacts and management.*

## MONITORING PROGRESS REPORT

**Reporting Period:** from 11 April 2012 to 31 March 2014

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):**

CYANOCOST (COST Action ES 1105) has completed its two first years. During this time the main objectives were the initial situation assessment regarding toxic cyanobacteria in Europe. Four Working Groups were formed according to the MoU. The development of four publications on best practises for monitoring, analysis, prevention, control and treatment of cyanobacteria and cyanotoxins in water has been launched. Repositories and electronic forms for collection of data to develop a pan-European database in the field have been designed. The Action's website and twitter account have been developed and are now in operation. Thirteen STSMs have been completed, most of them by ESRs. The network has expanded with inclusion of 12 additional countries since the kick-off meeting and now includes 34 countries. CYANOCOST was linked to NETLAKES and EULAKES. A one-day Workshop was dedicated to Cyanobacteria and Cyanotoxins was organized within the ICCE 2013 Conference. There were joint research proposals submitted, the major one being "CYANOHAZARD" within the water-JPI call. Dissemination of CYANOCOST activities was further realized by presentations in conferences and publications (peer-reviewed research papers and book chapters).

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



### I.A. COST Action Fact Sheet

- **COST Action ES1105 - Cyanobacterial blooms and toxins in water resources: Occurrence, impacts and management**
- **Domain ESSEM**

- **Action details:**

**CSO Approval:** 01/12/2011

**End date:** 10/04/2016

**Entry into force:** 18/01/2012

**Extension:**

- **Objectives** (from DB as in About COST)

Toxigenic cyanobacteria are one of the main health risks associated with European water resources. They produce a wide range of potent toxins with adverse health effects on humans and animals exposed to them via drinking water, aquaculture and recreation. European research in the field has generated significant risk management capability, although this is regionally unbalanced. This action aims to transfer this knowledge and know-how to all European regions: widening awareness, spreading relevant technical competence, and sharing risk management expertise. The action aims to provide tools to end-users (public authorities, water utilities, aquaculture, tourism and recreation sectors) by pooling and coordinating expertise throughout Europe and to harmonize methods and practices across Europe, thereby protecting public health, enterprises and investments. This Action arrival is extremely timely because new challenges in the field have appeared recently including emerging toxins and cyanobacterial species hitherto unknown in Europe, plus the preparation of new legislation and regulations in some European countries. Over 100 partners (scientists, other professionals and companies), from 32 European countries, one International Partner Country and one COST Near Neighbour Country, are participating in this action. The coordination and networking tools provided by COST are the most suitable and will be used to achieve the Actions goals.

- **Parties:** list of countries and date of acceptance

Austria (23/01/2012)	Greece (23/01/2012)	Poland (09/02/2012)
Belgium (06/02/2012)	Hungary (15/11/2012)	Portugal (10/05/2012)
Bulgaria (18/01/2012)	Iceland (date)	Romania (08/08/2013)
Croatia (20/04/2012)	Ireland (09/02/2012)	Serbia (29/12/2011)
Cyprus (18/12/2013)	Israel (14/01/2013)	Slovakia (23/03/2012)
Czech Rep. (08/08/2012)	Italy (01/02/2012)	Slovenia (05/01/2012)
Denmark (22/01/2013)	Latvia (date)	Spain (03/01/2012)
Estonia (18/04/2012)	Lithuania (20/03/2012)	Sweden (20/02/2012)
Finland (05/03/2012)	Luxembourg (07/08/2013)	Switzerland (24/01/2012)
FYR of Macedonia (02/07/2013)	Malta (date)	Turkey (23/03/2012)
France (10/02/2012)	Netherlands (28/02/2012)	United Kingdom (07/12/2011)
Germany (18/01/2012)	Norway (02/02/2012)	

- **Intentions to accept:**

- **Other participants:**

**COST Near Neighbour Countries**

Saint-Petersburg Scientific-Research Centre for Ecological Safety RAS, Russian Federation. (approval pending).

### **COST International Partner Countries**

- The United States Environmental Protection Agency, Cincinnati, USA.
- University of Cincinnati, Cincinnati, USA.

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- **Action Web site:** [www.cyanocost.com](http://www.cyanocost.com) **Twitter:** @CYANOCOST
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- **Working Groups** (list of WGs and names and affiliations of participants)

*Important: Lists with WG members are not finalized. They will include additional WG members that have already expressed interest to be involved in CYANOCOST activities.*

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### **WG4: End-user and outreach tools, materials and products.**

**Leader: Luc Brient**, University of Rennes, FR, e-mail: [luc.brient@univ-rennes1.fr](mailto:luc.brient@univ-rennes1.fr)

**Deputy: Antonio Quesada**, University of Madrid, ES, e-mail: [antonio.quesada@uam.es](mailto:antonio.quesada@uam.es)

### **WG4 participants**

WG4 participants are the following action participants as well as all MC and MC substitute members (see list below).

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<b>Institution Name</b>	<b>MC Observer</b>	
Saint-Petersburg Scientific-Research Centre for Ecological Safety RAS	Dr Zoya Zhakovskaya	
<b>COST International Partner Countries</b>		
<b>Institution Name</b>	<b>MC Observer</b>	
The United States Environmental Protection Agency	Dr Armah de la Cruz	
University of Cincinnati	Dr Dionysios (Dion) Dionysiou	

## I.C. Overview activities and expenditure

### 2012-2013 Budget

Action Total : 139568.33

### 2013-2014 Budget (updated 1/4/2014)

Total Action Budget: 173913,04 (200000 with FSAC max 15%)

Remaining Action Commitment: 76587.21

Meeting Type	Date		Place	Cost	Total
	From	To			
Joint WG-MC meetings	2013-11-12	2013-11-15	Sofia, Bulgaria	62674.31	61874.30
Joint WG-MC meetings	2014-04-10	2014-04-11	Budapest, Hungary	56000 (estimation)	
Editorial Meeting "In-lake measures for prevention and control" (WG4)	2013-07-04	2013-07-04	Paris, France	1029.37	1029.37
Working Group 4 "Dissemination" Meeting	2014-02-21	2014-02-21	Rennes, France	2000 (estimation)	
Editorial Meeting "Molecular methods" – WG2	2014-02-24	2014-02-24	Brussels, Belgium	6000 (estimation)	

**WG-MC Meetings Total (already paid): 62903.67**

### STSM

Beneficiary	Date		Place	Cost	Total
	From	To			
Katharina Makower	2013-06-13	2013-05-30	University van Amsterdam, Amsterdam (NL)	2000	2000
Veronika Ostermaier	2013-06-02	2013-07-31	Norwegian Institute for Water Research (NIVA), Oslo (NO)	1650	1650
Mafalda Baptista	2013-07-03	2013-08-05	University of Stockholm, Stockholm (SE)	1800	1800
Maria G. Antoniou	2013-07-06	2013-08-02	National Center for Scientific Research "DEMOKRITOS", Athens (GR)	2000	2000
Tamara Dulic	2013-09-01	2013-10-31	National Center for Scientific Research "DEMOKRITOS", Athens, (GR)	2500	2500
Mafalda Baptista	2013-10-12	2013-11-30	University of Stockholm, Stockholm, (SE)	700	700
Agnieszka Budzyńska	2013-10-14	2013-11-04	Israel Oceanographic & Limnological Research, Kinneret Limnological	2000	2000

			Laboratory, (IL)		
Latife Koker	2013-10-14	2013-12-14	University of Potsdam, Potsdam, (DE)	2500	2500
Kerstin Häggqvist	2014-03-01	2014-03-31	Institute of Oceanography, Department of Marine Biology and Ecology, University of Gdansk, Gdynia, (PL)	1970	
María Ángeles Lezcano Vega	2014-04-01	2014-04-01	Åbo Akademi University, Department of Biosciences, Turku, (FL)	2500	
Eliska Sychrova	2014-04-30	2014-05-30	University of Helsinki, Helsinki, (FL)	2500	
Agata Błaszczuk	2014-05-07	2014-05-25	Åbo Akademi University, Department of Biosciences, Turku, (FL)	1700	

**STSMs Total (already paid): 15150**

### Workshops

Title	Date		Place	Cost	Total
	From	To			
ICCE 2013 Satellite Event "Cyanobacteria and Cyanotoxins"	2013-06-25	2013-06-25	Barcelona, Spain	14081.86	14081.87
Dissemination Meeting: "9th International Conference on Toxic Cyanobacteria"	2013-08-11	2013-08-16	Pilanesberg National Park, South Africa	1324.07	1324.07
Dissemination Meeting: "INQUA Loess Focus Group Workshop"	2013-09-10	2013-09-12	Leicester, UK	1432.38	1432.38
Other COST relevant meeting: "Editorial Meeting Handbook #4"	2013-09-25	2013-09-25	Portoroz, Slovenia	2433.84	2433.84
III Iberian Congress on Cyanotoxins and Vth meeting of the Spanish Network on Cyanotoxins	2013-07-10	2013-07-12	Girona, Spain	700	

**Workshops and other meetings Total (already paid): 19272.16**

### General Support Grants

Beneficiary	Date									Cost	Total
											<b>0</b>

### Schools

Title	Date	Place								Cost	Total
											<b>0</b>

### Dissemination

Title	Date	Place	Cost	Total
Webpage expansion			2000	
Printed – Published materials			3000	

**Others**

Bank charges			1212.21	

**Action Total : 97325.83**

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**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 main objective of CYANOCOST during its two first years of operation was the “Initial Situation Assessment” in the field of cyanobacteria – cyanotoxins in Europe. To achieve this, an extensive network was developed that now encompasses 33 European countries plus USA with 86 nominated Management Committee (MC) and MC substitute members. Most of those nominated participants come from academia and research, health organizations, water institutes and utilities with diverse backgrounds, e.g. biology, ecology, limnology, environmental toxicology, analytical chemistry, molecular biology, water treatment. This core group has been constantly expanding with inclusion of experts from many countries and currently about 150 individuals have been involved in CYANOCOST activities.

Four Working Groups have been developed to plan and carry out work in order to realize the objectives of CYANOCOST: WG1 – occurrence of cyanobacteria and cyanotoxins, including methods for monitoring and analysis; WG2 – fates, impacts and effects of cyanobacteria and cyanotoxins; WG3 – prevention and control measures and WG4 – end-user and outreach tools, materials and products.

The main achievements during the first year of operation are:

- The launching of four different publications (handbooks/special issues) that address the identification and harmonization of best practises in monitoring, analysis, prevention, control and treatment of cyanobacteria and cyanotoxins in water. These publications will be completed in the third year of the Action. The titles – editors are:
  1. Handbook of analysis of cyanobacteria and cyanotoxins (Meriluoto, Codd, Spoof).
  2. Handbook on molecular methods (Sivonen, Kurmayer, Wilmotte).
  3. In-lake prevention and control measures (Visser, Ibelings, Bormans).
  4. Drinking water treatment processes (Hiskia, Dionysiou, Antoniou, Kaloudis, Triantis).
- The design of repositories and electronic forms for the collection of data to develop a pan-European database in the field (Blaha, Codd, Svircev).
- The development of CYANOCOST website (Brient, Quesada): [www.cyanocost.com](http://www.cyanocost.com)
- The launching of CYANOCOST Twitter [@CYANOCOST](https://twitter.com/CYANOCOST)
- The completion of 13 STSMs (8 of which by ESRs).
- The expansion of the network, from 22 countries (kick-off) to 34 countries and the wide participation (total of about 150 individuals).
- The interlinking with other Actions (e.g. NETLAKES) and FP7 projects (e.g. EULAKES).
- The publications acknowledging CYANOCOST: 16 peer-reviewed papers, 2 book chapters and an article (total 19 publications).
- The organization of a one-day Workshop (Satellite event) within the International Conference on Chemistry and the Environment - ICCE 2013 “Cyanobacteria and Cyanotoxins in Aquatic Environments”, Organized by CYANOCOST and ACS, Barcelona, (org. Dion Dionysiou, Antonio Quesada, Triantafyllos Kaloudis) [www.icce2013.org](http://www.icce2013.org)
- The presentation of CYANOCOST in 9th International Conference on Toxic Cyanobacteria, South Africa, (Ludek Blaha, Geoffrey Codd and others) [www.ictc9.org](http://www.ictc9.org)
- The submission of a proposal for the research project “CYANOHAZARD” within the first call of “Water JPI”. This proposal, coordinated by A. Quesada, was a major collaborative work and included partners from 10 CYANOCOST countries.

### **II.A. Innovative networking**

As CYANOCOST is in its second year of operation, there is much interest between partners to form consortia for collaborative research. A major effort resulted in the submission of the CYANOHAZARD proposal within the Water-JPI 1<sup>st</sup> Call. Currently CYANOCOST is active in exploring opportunities for funding of collaborative research projects within H2020 calls.

The handbooks and special issues that contain best practices for cyanobacteria-cyanotoxins management are expected to have a strong socio-economic impact (e.g. human health, aquaculture, tourism) because they will improve the management of cyanobacteria and cyanotoxins throughout Europe.

Some examples of proposals/projects submitted or initiated in the framework of CYANOCOST during the first year of operation are:

1. Title: CYANOMED-Cyanobacteria and cyanotoxins in Mediterranean freshwater ecosystems: Risk assessment in a climate changing World  
Program: ENPI CBCMED  
CYANOCOST Partners from Spain (Quesada), Israel (Sukenik), Greece (Hiskia, Moustaka)  
Status: Proposal submitted.
2. Title: Lambda Water - Portable Optical Nanobiosensing Device for Multidetector of Cyanotoxins in Freshwater Samples  
Program: FP7-ICT-2013-10  
CYANOCOST Partners from Spain (Quesada), Greece (Hiskia),  
Status: Proposal submitted.
3. Title: Ecotoxicology of cyanobacterial toxins: emphasis on aeruginosins, nodularin and cylindrospermopsin  
Program: COST National Program (CH) – Embedded in CYANOCOST.  
CYANOCOST Partners: Karl Fent (Coordinator).  
Status: Proposal submitted, evaluation pending.
4. Title: Understanding and managing cyanobacterial blooms of the future: learning from past and present day dynamics  
Program: COST National Program (CH) – Embedded in CYANOCOST.  
CYANOCOST Partners: Bastian Ibelings (Coordinator).  
Status: Proposal submitted, evaluation pending.
5. Title: CYANOWATER - Cyanotoxins in Fresh Waters, Advances in Analysis, Occurrence and Treatment  
Program: ARISTEIA National Program (EL)  
CYANOCOST Partners: Anastasia Hiskia (Coordinator, NCSR Demokritos), Theodoris Triantis (NCSR D), Triantafyllos Kaloudis (NCSR D), Maria Moustaka (AUTH), Kostas Kormas (UTH), Dionysios Dionysiou (UC-USA).  
Status: Proposal submitted, funding granted, project started 1/1/2013.
6. Title: CYANOHAZARD: "Cyanotoxins as emerging freshwater hazards: sources, impacts and control"  
Program: Water JPI – 1<sup>st</sup> Call.  
CYANOCOST Partners: Cyprus (Dr. M. Antoniou, Cyprus University of Technology), Denmark (Dr. K. Christoffersen, University of Copenhagen), Finland (F11, Dr. K. Sivonen, University of Helsinki; F12, Dr. J. Meriluoto, Abo Akademi University), France (Dr M. Bormans, University of Rennes), Germany (DE1, Dr. J. Fastner, Federal Environmental Agency; DE2, Dr. D. Dietrich, University Konstanz), Ireland (Dr. A. Furey, Cork Institute of Technology), Italy (Dr. N. Salmaso, Research and Innovation Centre), Norway (Dr. A. Ballot, Norwegian Institute of Water Research), Portugal (Dr. V. Vasconcelos, University of Porto), Spain (ES1, Dr. Quesada, Universidad Autónoma de Madrid; ES2, Dr. Caixach, Institute of Environmental Assessment and Water Research).

7. Title: "BENCYAN: Multicellular benthic cyanobacteria in Norway - Corrections in the morphological species concept"  
Proposal for a National Project submitted by A. Ballot (Norway).
8. Title: "Ecotoxicology of cyanobacterial toxins: emphasis on aeruginosins, nodularin and cylindrospermopsin"  
Proposal for a National Project (supported by COST) submitted by K. Fent (Switzerland).
9. Title: "PeroFlock"  
National Grant Proposal, submitted by H. Matthijs (Netherlands).

## ***II.B. Inter-disciplinary networking***

Much of the work of CYANOCOST is cross-disciplinary. Members of WGs and authors of handbooks - special issues that are under development come from diverse disciplines such as biology, chemistry, ecology, toxicology, engineering. Already there is much interaction between those experts and we expect that as the work progresses maximum synergy will be achieved. Specific examples to show that inter-disciplinarity is beneficial for CYANOCOST are:

- The Handbook of cyanotoxin analysis, were about 60 experts from different disciplines collaborate to develop guidelines for sampling, chemical analysis, microscopic analysis, in vitro assays, health & safety, validation and quality control and evaluation of results.
- The discussions between experts in microscopy and in molecular methods about the advantages and limitation of these alternative techniques for the identification of toxic cyanobacteria.
- The different view-points in the evaluation of prevention and control measures in the lake or during water treatment, with regards to their impacts in health, ecosystems and the environment.
- The interaction between chemists, chemical and water engineers, biologists, toxicologists to discuss the advantages and disadvantages of various methods for drinking-water treatment targeted to removal of cyanotoxins.

This high-level of interdisciplinarity is expected to provide innovative scientific results in the following years. Regarding socio-economic impacts, it is foreseen that experts in environmental economics will be also needed to join the Action in order to contribute to the estimation of environmental and other costs that are associated with toxic cyanobacterial blooms. This can be achieved within a consortium for a H2020 research proposal.

## ***II.C. New networking***

### **CYANOCOST Members:**

Eleven (11) COST member countries joined CYANOCOST after the start of the Action (11 April 2012) and during the first year (until 31 March 2014):

*Croatia (20/04/2012), Cyprus (18/12/2013), Czech Rep. (08/08/2012), Denmark (22/01/2013), Estonia (18/04/2012), FYR of Macedonia (02/07/2013), Hungary (15/11/2012), Israel (14/01/2013), Luxembourg (07/08/2013), Portugal (10/05/2012), Romania (08/08/2013).*

In addition, the Russian Federation has filed an application for which approval by COST is pending.

The total number of individuals already involved in CYANOCOST activities is about 150. About 55% are female and about 30% are ESRs.

A special 2-day workshop for ESRs was organized during the 3rd WG-MC meeting in Gdansk. In this workshop ESRs had the opportunity to discuss their ideas about possible collaborations and joint projects. They also presented posters with their work to all participants of the meeting.

(about 70 individuals).

Thirteen STSMs have been completed, 10 of them (77%) were carried out by ESRs.

Currently, USA participates as a IPC country. The Environmental Protection Agency (EPA, Dr. de la Cruz) and the University of Cincinnati (Prof. Dionysiou) are representing USA. Dionysiou is actively involved in editing the “Drinking Water Treatment Processes” publication, as well as in organizing a workshop on cyanobacteria-cyanotoxins during the International Conference of Chemistry and the Environment, ICCE 2013. There is an application by experts from Russian Federation to join CYANOCOST and the approval is pending.

### **Publications acknowledging CYANOCOST:**

There are already 19 joint publications by CYANOCOST members, acknowledging CYANOCOST:

1. “Towards safe waters” – an interview article by the Steering Group of CYANOCOST, in *International Innovation, Environment*, April 2013, pages 85-87. Available on-line in:  
<http://www.research-europe.com/magazine/ENVIRONMENT/ENV17/index.html>
2. Lara, Y., Lambion, A., Menzel, D., Codd, G.A. and Wilmotte, A. (2013). “A cultivation-independent approach for the genetic and cyanotoxin characterization of colonial cyanobacteria”. *Aquatic Microbial Ecology*, **69**, pp.135-143.  
<http://www.int-res.com/abstracts/ame/v69/n2/p135-143/>
3. Štraser, A., Filipič, M., Gorenc, I. and Žegura, B. (2013). “The influence of cylindrospermopsin on oxidative DNA damage and apoptosis induction in HepG2 cells”. *Chemosphere*, **92**(1), pp 24-30.  
<http://www.sciencedirect.com/science/article/pii/S0045653513004530>
4. Štraser, A., Filipič, M., Novak, M. and Žegura, B. (2013). “Cylindrospermopsin induced transcriptional responses in human hepatoma HepG2 cells”. *Toxicology in Vitro* **27**(6), 1809-1819.  
<http://www.sciencedirect.com/science/article/pii/S0887233313001380>
5. Štraser, A., Filipič, M., Novak, M. and Žegura, B. (2013), Double strand breaks and cell-cycle arrest induced by the cyanobacterial toxin cylindrospermopsin in HepG2 cells, *Marine Drugs*, **11**(8), 3077-3090.  
<http://www.mdpi.com/1660-3397/11/8/3077>
6. Kaloudis, T, Zervou, S., Tsimeli, K., Triantis, T.M., Fotiou, T., Hiskia, A. (2013). Determination of Microcystins and Nodularin (Cyanobacterial Toxins) in Water by LC-MS/MS. Monitoring of Lake Marathonas, a water reservoir of Athens, Greece. *Journal of Hazardous Materials* **263**(1), 105-115.  
<http://www.sciencedirect.com/science/article/pii/S0304389413005153>
7. Fotiou, T., Triantis, T.M., Kaloudis, T., Pastrana-Martínez, L.M., Likodimos, V., Falaras, P., Silva, A.M.T., Hiskia, A. (2013). Photocatalytic Degradation of Cyanobacterial Metabolites in Water under UV-A and Solar Light using a Nanostructured Photocatalyst based on Reduced Graphene Oxide-TiO<sub>2</sub> Composite. *Industrial & Engineering Chemistry Research*, **52**(39), pp 13991–14000.  
<http://pubs.acs.org/doi/abs/10.1021/ie400382r>

8. Armah A. de la Cruz, Anastasia Hiskia, Triantafyllos Kaloudis, Neil Chernoff, Donna Hill, Maria G. Antoniou, Xuexiang He, Keith Loftin, Kevin O'Shea, Cen Zhao, Miguel Pelaez, Changseok Han, Trevor J. Lynch and Dionysios D. Dionysiou (2013), "A review on cylindrospermopsin: the global occurrence, detection, toxicity and degradation of a potent cyanotoxin", *Environ. Sci.: Processes Impacts*, 15, 1979-2003.  
<http://pubs.rsc.org/en/content/articlelanding/2013/em/c3em00353a#!divAbstract>
  
9. Zorica Svircev, Damiana Drobac, Nada Tokodi, Milka Vidovoc, Jelica Simeunovic, Marica Miladinov-Mikov, Vladimir Baltic (2013), Epidemiology of Primary Liver Cancer in Serbia and Possible Connection With Cyanobacterial Blooms, *Journal of Environmental Science and Health, Part C: Environmental Carcinogenesis and Ecotoxicology Reviews*, 31:3, 181-200.  
<http://www.tandfonline.com/doi/abs/10.1080/10590501.2013.824187#.UuYAPyr8LDc>
  
10. Kobos J., Błaszczak A., Hohlfeld N., Toruńska A., Krakowiak A., Hebel A., Stryk K., Grabowska M., Toporowska M., Messyas B., Rybak A., Napiórkowska-Krzebietke A., Nawrocka L., Pełechaty A., Budzyńska A., Zagajewski P., Mazur-Marzec H., (2013). Cyanobacteria and cyanotoxins in Polish freshwater bodies. *Oceanological and hydrological Studies*, 42(4), 358-378.  
<http://link.springer.com/article/10.2478/s13545-013-0093-8>
  
11. Ilona Gagała, Katarzyna Izydorczyk, Tomasz Jurczak, Jakub Pawelczyk, Jarosław Dziadek, Adrianna Wojtal-Frankiewicz, Adam Jóźwik, Aleksandra Jaskulska, Joanna Mankiewicz-Boczek (2013), Role of Environmental Factors and Toxic Genotypes in the Regulation of Microcystins-Producing Cyanobacterial Blooms. *Microbial Ecology*  
<http://link.springer.com/article/10.1007/s00248-013-0303-3>
  
12. Nico Salmaso, Adriano Boscai, Shiva Shams and Leonardo Cerasino (2013), Strict coupling between the development of *Planktothrix rubescens* and microcystin content in two nearby lakes south of the Alps (lakes Garda and Ledro), *Ann. Limnol. - Int. J. Lim.* 49, 309–318.  
<http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9077624>
  
13. K. Nováková, J. Kohoutek, O. Adamovský, W. Brack, M. Krauss, L. Bláha (2013), Novel metabolites in cyanobacterium *Cylindrospermopsis raciborskii* with potencies to inhibit gap junctional intercellular communication. *Journal of Hazardous Materials* 262, 571– 579.  
<http://www.sciencedirect.com/science/article/pii/S0304389413006511>
  
14. D. Gutiérrez-Praena, M.A. Risalde, S. Pichardo, A. Jos, R. Moyano, A. Blanco, V. Vasconcelos, A.M. Cameán (2014) Histopathological and immunohistochemical analysis of *Tilapia (Oreochromis niloticus)* exposed to cylindrospermopsin and the effectiveness of N-Acetylcysteine to prevent its toxic effects. *Toxicon* 78 (2014) 18–34.  
<http://www.sciencedirect.com/science/article/pii/S0041010113004467>
  
15. Vera Pavlova, Maya Stoyneva and Zlatka Bratanova (2013). Cyanoprokaryotes (Cyanobacteria) and Cyanotoxins in some Bulgarian reservoirs. *Journal of Balkan Ecology*, 16(3), 257-259.  
<http://en.ecobalk.com/>
  
16. Ostermaier, V., Christiansen G., Schanz, F., Kurmayer, R. (2013) Genetic variability of microcystin biosynthesis genes in *Planktothrix* as elucidated from samples preserved by heat desiccation during three decades. *PLOS One*. Published: November 12, 2013

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0080177>

17. Shiva Shams, Leonardo Cerasino, Nico Salmaso, Daniel R. Dietrich (2014) Experimental models of microcystin accumulation in *Daphnia magna* grazing on *Planktothrix rubescens*: Implications for water management. *Aquatic Toxicology* 148, pp.9-15.

<http://www.sciencedirect.com/science/article/pii/S0166445X13003706>

18. Furey, A., Bane, V.P., Lehane, M., Elliott, C.T. and Redshaw, C. *Cylindrospermopsis*: Chemistry, Origin, Metabolism, Effects and Detection, Part VI. Cyanobacterial toxins, Chapter 36 *Seafood and Freshwater Toxins: Pharmacology, Physiology and Detection*. Taylor & Francis, FL, USA. Third edition (2014) International Standard Book Number-13: 978-1-4665-0515-5, pg. 1031-1060.

<http://www.crcpress.com/product/isbn/9781466505148>

19. Dauphard, J., Lehane, M., van Pelt, F., O'Halloran, J. and Furey, A. *Anatoxin: Chemistry, Effects, Source, Metabolism, and Detection* Chapter 37. *Seafood and Freshwater Toxins: Pharmacology, Physiology and Detection*. 3rd Edition. Taylor & Francis, FL, USA. Third edition (2014) International Standard Book Number-13: 978-1-4665-0515-5, pg. 1061-1066.

<http://www.crcpress.com/product/isbn/9781466505148>

#### **Presentations of CYANOCOST in Conferences and other events:**

- 29/10-2/11/2012 Presentation of CYANOCOST in the 15<sup>th</sup> International Conference on Harmful Algae, Changwon, Korea (Myriam Bormans) [http://www.hab2012.kr/page?id=eng\\_index](http://www.hab2012.kr/page?id=eng_index)
- 16-18/4/2013 Presentation of CYANOCOST in COST – WssTP Strategic Conference, 16-18 April 2013, Brussels (T. Kaloudis) <http://www.waterintheurbanenvironment.eu/>
- 31/5/2013 Presentation of CYANOCOST in the EULAKES final meeting, Lake Garda, Italy, (Jussi Meriluoto, Lisa Spoo) [www.eulakes.eu](http://www.eulakes.eu)
- 25/6/2013 ICCE 2013 Satellite Event “Cyanobacteria and Cyanotoxins in Aquatic Environments”, Organized by CYANOCOST and ACS, Barcelona, (org. Dion Dionysiou, Antonio Quesada, Triantafyllos Kaloudis) [www.icce2013.org](http://www.icce2013.org)
- 10-12/7/2013 Participation of CYANOCOST in III Iberian Congress on Cyanotoxins and Vth meeting of the Spanish Network on Cyanotoxins, Girona, Spain (Antonio Quesada and others) <http://www.ceab.csic.es/web/?p=11355>
- 11-16/8/2013 Presentation of CYANOCOST in 9th International Conference on Toxic Cyanobacteria, South Africa, (Ludek Blaha, Geoffrey Codd and others) [www.ictc9.org](http://www.ictc9.org)
- 10-12/9/2013 Participation of CYANOCOST in INQUA Loess Focus Group Meeting, Leicester, UK (Zorica Svircev), <http://www.inqua-loess.org/leicester2013.php>
- 17-19/9/2013 Presentation of CYANOCOST in “International Symposium: ECOHYDROLOGY, BIOTECHNOLOGY & ENGINEERING: Towards the Harmony between Biogeosphere and Society on the basis of Long, Term Ecosystem Research”, Lodz, Poland. [www.ecohydrologyengineeringsociety2013.org](http://www.ecohydrologyengineeringsociety2013.org)
- 24-25/10/2013 COST Days in Sofia, Bulgaria. Presentation of CYANOCOST (Maya Stoyneva)
- 25/2/2014 CYANOCOST presentation in “COST Info Day”, Athens, Greece (T. Kaloudis).

21/3/2014

CYANOCOST presentation in "WATERMICRO 2014" conference for the World Water Day 2014 at the Ministry of Health, Athens, Greece (T. Kaloudis).  
[www.watermicro.gr](http://www.watermicro.gr)

#### ***II.D. Self evaluation***

The main achievements and successes of CYANOCOST are discussed in Section II. We would like to add that a key point of CYANOCOST is the strength of this extensive network that is based on the good spirit of collaboration and inclusiveness. A good example for this is the handbook of analysis of cyanotoxins, where as many as 79 authors are involved and most chapters and SOPs are co-authored by groups that work together for the first time.

One thing that can be improved during the second year was the communication between members of the SC of CYANOCOST. Dr. Ludek Blaha (Vice Chair) organized a series of planned teleconferences with pre-agreed agendas. The minutes of those meetings are kept in on-line documents that are accessible to everyone. This greatly improved communication and decision-making within SC. However, it would be helpful in the future if COST could provide on-line tools and platforms for communication, virtual meetings and exchange of data.

Regarding administration, we get excellent support from our COST officers and COST office and we find that e-COST system is very efficient. However, there are a lot of difficulties and a lot of work for the Grant Holder to process payments, since national regulations have to be considered as well. Also, since validation of payments by COST is done after the payments, there is always the possibility that the Grant Holder will pay any costs that are judged non-eligible. This has happened in our Action. A possible solution to this could be a pre-approval of eligibility by COST office.

### **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.

The main objective of CYANOCOST during its first year of operation was the “Initial Situation Assessment” in the field of cyanobacteria – cyanotoxins in Europe. To achieve this, an extensive network was developed that now encompasses 28 European countries plus USA with 78 nominated Management Committee (MC) and MC substitute members. Most of those nominated participants come from academia and research, health organizations, water institutes and utilities with diverse backgrounds, e.g. biology, ecology, limnology, environmental toxicology, analytical chemistry, molecular biology, water treatment. This core group has been constantly expanding with inclusion of experts from many countries and currently about 150 individuals have been involved in CYANOCOST activities.

Four Working Groups have been developed to plan and carry out work in order to realize the objectives of CYANOCOST: WG1 – occurrence of cyanobacteria and cyanotoxins, including methods for monitoring and analysis; WG2 – fates, impacts and effects of cyanobacteria and cyanotoxins; WG3 – prevention and control measures and WG4 – end-user and outreach tools, materials and products.

The main achievements of these WGs during the first year of operation are:

- The launching of four different publications (handbooks/special issues) that address the identification and harmonization of best practises in monitoring, analysis, prevention, control and treatment of cyanobacteria and cyanotoxins in water. These publications will be completed in the third year of the Action. The titles – editors are:
  5. Handbook of analysis of cyanobacteria and cyanotoxins (Meriluoto, Codd, Spoof).
  6. Handbook on molecular methods (Sivonen, Kurmayer, Wilmotte).
  7. In-lake prevention and control measures (Visser, Ibelings, Bormans).
  8. Drinking water treatment processes (Hiskia, Dionysiou, Antoniou, Kaloudis).
- The design of repositories and electronic forms for the collection of data to develop a pan-European database in the field (Blaha and others).
- The development of CYANOCOST website (Brient, Quesada): [www.cyanocost.com](http://www.cyanocost.com)
- The completion of seven STSMs (6 of which by ESRs).
- The expansion of the network, from 19 countries (kick-off) to 28 countries and the wide participation (total of about 150 individuals).
- The interlinking with other Actions (e.g. NETLAKES) and FP7 projects (e.g. EULAKES).
- The dissemination of CYANOCOST activities by a publication in “International Innovation” and by presentations in Conferences/Workshops.

#### **II.A. Innovative networking**

As CYANOCOST is in its first year of operation where the main objective was the initial situation assessment, there are still no specific examples of innovative knowledge or scientific breakthroughs resulting from networking. It is expected, however, that such results will be achieved during the following years of operations, as partners are already forming groups and consortia for multidisciplinary collaboration.

The handbooks and special issues that contain best practices for cyanobacteria-cyanotoxins management are expected to have a strong socio-economic impact (e.g. human health, aquaculture, tourism) because they will improve the management of cyanobacteria and cyanotoxins throughout Europe. These publications will be “open access” and they will be distributed to all stakeholders and interested parties.

Some examples of proposals/projects submitted or initiated in the framework of CYANOCOST during the first year of operation are:

10. Title: CYANOMED-Cyanobacteria and cyanotoxins in Mediterranean freshwater ecosystems: Risk assessment in a climate changing World  
Program: ENPI CBCMED  
CYANOCOST Partners from Spain (Quesada), Israel (Sukenic), Greece (Hiskia, Moustaka)  
Status: Proposal submitted.
11. Title: Lambda Water - Portable Optical Nanobiosensing Device for Multidetector of Cyanotoxins in Freshwater Samples  
Program: FP7-ICT-2013-10  
CYANOCOST Partners from Spain (Quesada), Greece (Hiskia),  
Status: Proposal submitted.
12. Title: Ecotoxicology of cyanobacterial toxins: emphasis on aeruginosins, nodularin and cylindrospermopsin  
Program: COST National Program (CH) – Embedded in CYANOCOST.  
CYANOCOST Partners: Karl Fent (Coordinator).  
Status: Proposal submitted, evaluation pending.
13. Title: Understanding and managing cyanobacterial blooms of the future: learning from past and present day dynamics  
Program: COST National Program (CH) – Embedded in CYANOCOST.  
CYANOCOST Partners: Bastian Ibelings (Coordinator).  
Status: Proposal submitted, evaluation pending.
14. Title: CYANOWATER - Cyanotoxins in Fresh Waters, Advances in Analysis, Occurrence and Treatment  
Program: ARISTEIA National Program (EL)  
CYANOCOST Partners: Anastasia Hiskia (Coordinator, NCSR Demokritos), Theodoris Triantis (NCSR D), Triantafyllos Kaloudis (NCSR D), Maria Moustaka (AUTH), Kostas Kormas (UTH), Dionysios Dionysiou (UC-USA).  
Status: Proposal submitted, funding granted, project started 1/1/2013.

## ***II.B. Inter-disciplinary networking***

Much of the work of CYANOCOST is cross-disciplinary. Members of WGs and authors of handbooks - special issues that are under development come from diverse disciplines such as biology, chemistry, ecology, toxicology, engineering. Already there is much interaction between those experts and we expect that as the work progresses maximum synergy will be achieved. Specific examples to show that inter-disciplinarity is beneficial for CYANOCOST are:

- The collaboration of biologists, ecologists, limnologists and analytical chemists to provide guidelines for the sampling of water containing cyanobacteria / cyanotoxins and the pre-treatment of samples with regards to the evaluation of results.
- The discussions between experts in microscopy and in molecular methods about the advantages and limitation of these alternative techniques for the identification of toxic cyanobacteria.

- The different view-points in the evaluation of prevention and control measures in the lake or during water treatment, with regards to their impacts in health, ecosystems and the environment.

This high-level of interdisciplinarity is expected to provide innovative scientific results in the following years. Regarding socio-economic impacts, it is foreseen that experts in environmental economics will be also needed to join the Action in order to contribute to the estimation of environmental and other costs that are associated with toxic cyanobacterial blooms.

## **II.C. New networking**

Seven countries joined CYANOCOST after the start of the Action (11 April 2012) and during the first year (until 30 April 2013):

*Estonia (18/04/2012), Croatia (20/04/2012), Portugal (10/05/2012), Czech Rep. (08/08/2012), Hungary (15/11/2012), Israel (14/01/2013), Denmark (22/01/2013).*

Cyprus has expressed intention to participate and MC approval is pending.

The total number of individuals already involved in CYANOCOST activities is about 150. About 55% are female and about 30% are ESRs.

A special 2-day workshop for ESRs was organized during the 3<sup>rd</sup> WG-MC meeting in Gdansk. In this workshop ESRs had the opportunity to discuss their ideas about possible collaborations and joint projects. They also presented posters with their work to all participants of the meeting (about 70 individuals).

Seven STSMs were completed during the 1<sup>st</sup> year, six of them (85%) were carried out by ESRs.

Currently, only USA participates as a non-COST country. The Environmental Protection Agency (EPA, Dr. de la Cruz) and the University of Cincinnati (Prof. Dionysiou) are representing USA. Dionysiou is actively involved in editing the "Drinking Water Treatment Processes" publication, as well as in organizing a workshop on cyanobacteria-cyanotoxins during the International Conference of Chemistry and the Environment, ICCE 2013. There is further interest by experts from Russia to join CYANOCOST and we expect to have their formal applications during the 2<sup>nd</sup> year.

Joint publications by CYANOCOST members, acknowledging CYANOCOST are:

- "Towards safe waters" – an interview article by the Steering Group of CYANOCOST, in International Innovation, Environment, April 2013, pages 85-87. Available on-line in: <http://www.research-europe.com/magazine/ENVIRONMENT/ENV17/index.html>
- Lara, Y., Lambion, A., Menzel, D., Codd, G.A. and Wilmotte, A. (2013). A cultivation-independent approach for the genetic and cyanotoxin characterization of colonial cyanobacteria. Aquatic Microbial Ecology (in the press).
- Štraser, A., Filipič, M., Gorenc, I. and Žegura, B. (2013). The influence of cylindrospermopsin on oxidative DNA damage and apoptosis induction in HepG2 cells. Chemosphere, accepted 12 March 2013, available on line.
- Štraser, A., Filipič, M., Novak, M. and Žegura, B., Cylindrospermopsin induced transcriptional responses in human hepatoma HepG2 cells, submitted to Toxicology in vitro (submitted at the end of December 2012).
- Štraser, A., Filipič, M., Novak, M. and Žegura, B., Double strand breaks and cell-cycle arrest induced by the cyanobacterial toxin cylindrospermopsin in HepG2 cells, submitted to Marine Drugs, Special Issue on »Compounds from Cyanobacteria« (submitted, April 2013).
- Kaloudis, T, Zervou, S., Tsimeli, K., Triantis, T.M., Fotiou, T., Hiskia, A. (2013). Determination of Microcystins and Nodularin (Cyanobacterial Toxins) in Water by LC-MS/MS. Monitoring of Lake Marathonas, a water reservoir of Athens, Greece. Journal of Hazardous Materials, submitted for publication.
- Fotiou, T., Triantis, T.M., Kaloudis, T., Pastrana-Martínez, L.M., Likodimos, V., Falaras, P., Silva, A.M.T., Hiskia, A. (2013). Photocatalytic Degradation of Cyanobacterial Metabolites in

Water under UV-A and Solar Light using a Nanostructured Photocatalyst based on Reduced Graphene Oxide-TiO<sub>2</sub> Composite. Industrial & Engineering Chemistry Research, Special Issue: "Recent Advances in Nanotechnology-based Water Purification Methods" (submitted for publication).

CYANOCOST was also presented in:

- The 15<sup>th</sup> International Conference on Harmful Algae in Changwon, Korea from the 29 October to 2 November 2012 (CYANOCOST Poster presented by Myriam Bormans).
- The EULAKES final meeting, Lake Garda, Italy, 30<sup>th</sup> May 2013 (presented by Jussi Meriluoto, Lisa Spoof)

#### ***II.D. Self evaluation***

The main achievements and successes of CYANOCOST were discussed in Section II. We would like to add that a key point of CYANOCOST is the strength of this extensive network that is based on the good spirit of collaboration and inclusiveness. A good example for this is the handbook of analysis of cyanotoxins, where as many as 79 authors are involved and most chapters and SOPs are co-authored by groups that work together for the first time.

One thing that can be improved is the communication between members or groups of CYANOCOST. It would be helpful in the future if COST could provide on-line tools and platforms for communication, virtual meetings and exchange of data.

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## CYANOCOST Timeline

(Last update 31/3/2014)

<b>Date</b>	<b>Activity</b>
11/4/2012	Kick-off meeting in Brussels.
11/9/2012	1 <sup>st</sup> Year Grant Agreement signed by GH (139.900 €)
2-4/11/2012	2 <sup>nd</sup> MC-WG meeting in Madrid.
18/4/2012	Estonia joins CYANOCOST (Kulli Kangur, Risto Tanner)
20/4/2012	Croatia joins CYANOCOST (Sandi Orlic)
10/5/2012	Portugal joins CYANOCOST (Vitor Vasconcelos)
19/6/2012	Launching of CYANOCOST website (Luc Brient), <a href="http://www.cyanocost.com">www.cyanocost.com</a>
20-21/6/2012	APC – ESSEM Meeting, Alexandroupolis –Presentation/evaluation of CYANOCOST
8/8/2012	Czech Rep. joins CYANOCOST (Ludek Blaha)
5/10/2012	STSM Completed: Samuel Cires, UAM, Spain → Univ. of Helsinki, Finland
29/10-2/11/2012	Presentation of CYANOCOST in the 15 <sup>th</sup> International Conference on Harmful Algae, Changwon, Korea (Myriam Bormans) <a href="http://www.hab2012.kr/page?id=eng_index">http://www.hab2012.kr/page?id=eng_index</a>

- 15/11/2012 Hungary joins CYANOCOST (Andrea Torokne, Gabor Vasas)
- 14/1/2013 Israel joins CYANOCOST (Assaf Sukenik)
- 22/1/2013 Denmark joins CYANOCOST (Peter Henriksen, Kirsten Christoffersen)
- 22/2/2013 STSM completed: Vera Pavlova, National Center of Public Health, Bulgaria → Abo Akademi University, Finland, "LC-MS methods for the determination of cyanotoxins"
- 20-21/3/2013 Editorial Workshop "Handbook for Analysis of Cyanotoxins", Athens (Jussi Meriluoto, Geoffrey Codd, Lisa Spoof)
- 1/4/2013 CYANOCOST Article in *International Innovation, Environment*, April 2013, pages 85-87 <http://www.research-europe.com/magazine/ENVIRONMENT/ENV17/index.html>
- 1/4/2013 STSM completed: Kristel Panksep, Estonian University of Sciences → Univ. of Helsinki, Finland "Molecular Detection Methods for Potentially Toxic Cyanobacteria in Fresh Water Lakes".
- 16-18/4/2013 Presentation of CYANOCOST in COST – WssTP Strategic Conference, 16-18 April 2013, Brussels (T. Kaloudis) <http://www.waterintheurbanenvironment.eu/>
- 24-26/4/2013 3<sup>rd</sup> MC-WG Meeting in Gdansk.
- 26/4/2013 STSM completed: Anna Torounska, University of Gdansk, Poland → Univ. of Helsinki, Finland "Autoregulation of non-ribosomal peptides biosynthesis in the cyanobacterium *Nodularia spumigena*."
- 31/5/2013 Presentation of CYANOCOST in the EULAKES final meeting, Lake Garda, Italy, (Jussi Meriluoto, Lisa Spoof) [www.eulakes.eu](http://www.eulakes.eu)
- 31/5/2013 STSM completed: Shiva Shams, Fondazione Edmund Mach, Italy → Univ. of Helsinki, Finland "ATX genes in environmental samples and isolated strains: towards the identification of new producers."
- 1/6/2013 STSM (Part1) completed: Veronica Ostermaier, University of Innsbruck, Austria → Norwegian Institute for Water Research, Norway "Tracing toxigenic cyanobacteria from preserved genetic material."

- 10/6/2013 CYANOCOST Steering Group Meeting (Teleconference).
- 12-13/6/2013 APC – ESSEM Meeting, Hannover – Presentation/evaluation of CYANOCOST (T. Kaloudis)
- 25/6/2013 ICCE 2013 Satellite Event “Cyanobacteria and Cyanotoxins in Aquatic Environments”, Organized by CYANOCOST and ACS, Barcelona, (org. Dion Dionysiou, Antonio Quesada, Triantafyllos Kaloudis) [www.icce2013.org](http://www.icce2013.org)
- 25/6/2013 CYANOCOST on Twitter @CYANOCOST
- 30/6/2013 STSM completed: Katharina Makower, University of Potsdam, Germany → Univ. of Amsterdam, Netherlands “Microcystis RNA profiling.”
- 2/7/2013 The Former Yugoslav Republic of Macedonia joins CYANOCOST (Svetislav Krstic)
- 4/7/2013 Editorial Meeting - In-lake measures for prevention and control, Paris, France (Petra Visser, Bastian Ibelings, Myriam Bormans).
- 10-12/7/2013 Participation of CYANOCOST in III Iberian Congress on Cyanotoxins and Vth meeting of the Spanish Network on Cyanotoxins, Girona, Spain (Antonio Quesada and others) <http://www.ceab.csic.es/web/?p=11355>
- 31/7/2013 STSM (Part 2) completed: Veronica Ostermaier, University of Innsbruck, Austria → Norwegian Institute for Water Research, Norway “Tracing toxigenic cyanobacteria from preserved genetic material.”
- 02/8/2013 STSM completed: Maria Antoniou, Cyprus University of Technology, Cyprus → NCSR “DEMOKRITOS”, Greece “Evaluation of the efficiency of AOPs for the removal of various microcystins under realistic condition”
- 03/08/2013 STSM completed: Mafalda Baptista, CIIMAR/University of Porto, Portugal → University of Stockholm, Sweden “BMAA accumulation by blue mussel fed with cyanobacteria from the Baltic Sea”
- 11-16/8/2013 Presentation of CYANOCOST in 9<sup>th</sup> International Conference on Toxic Cyanobacteria, South Africa, (Ludek Blaha, Geoffrey Codd and others) [www.ictc9.org](http://www.ictc9.org)

- 2/9/2013 CYANOCOST Steering Group Meeting (Teleconference)
- 10-12/9/2013 Participation of CYANOCOST in INQUA Loess Focus Group Meeting, Leicester, UK (Zorica Svircev), <http://www.inqua-loess.org/leicester2013.php>
- 17-19/9/2013 Presentation of CYANOCOST in “International Symposium: ECOHYDROLOGY, BIOTECHNOLOGY & ENGINEERING: Towards the Harmony between Biogeosphere and Society on the basis of Long, Term Ecosystem Research”, Lodz, Poland. [www.ecohydrologyengineeringsociety2013.org](http://www.ecohydrologyengineeringsociety2013.org)
- 25-28/9/2013 Editorial meeting “Water treatment for the detoxification of water from cyanotoxins” and Bilateral meetings with participation of CYANOCOST, during the JEP 2013 Conference, Portoroz, Slovenia. <http://photocatalysis-federation.eu/jep2013/homepage.html>
- 7/10/2013 CYANOCOST Steering Group Meeting (Teleconference)
- 14-15/10/2013 Participation of CYANOCOST in NETLAKE WG 4 meeting: “Linking lake observatories to management and policy”, Amersfoort, Netherlands (T. Kaloudis)
- 24-25/10/2013 COST Days in Sofia, Bulgaria. Presentation of CYANOCOST (Maya Stoyneva)
- 31/10/2013 STSM completed: Tamara Dulic, University of Novi-Sad, Serbia → NCSR “DEMOKRITOS”, Greece “Study of the bioaccumulation of cyanotoxins in plant and animal tissues”
- 12/11/2013 Editorial Meeting “Water Treatment for Purification from Cyanobacteria and Cyanotoxins”, Sofia, Bulgaria (Editors: A. Hiskia, D. Dionysiou, Maria Antoniou, T. Kaloudis, T. Triantis) and Training in Advanced Oxidation Processes.
- 13/11/2013 Editorial Meeting “Handbook of Analysis of Cyanobacteria and Cyanotoxins” (Editors: J. Meriluoto, G. Codd, L. Spoof), Sofia, Bulgaria.
- 13/11/2013 Editorial Meeting “Molecular methods for identification of cyanobacteria” (Editors: K. Sivonen, R. Kurmayer, A. Wilmotte), Sofia, Bulgaria.
- 13/11/2013 Editorial Meeting “Prevention, Mitigation and Control of Cyanobacteria in Lakes and Reservoirs” (Editors: P. Visser, B. Ibelings, M. Bormans), Sofia, Bulgaria.
- 14/11/2013 CYANOCOST round-table discussions on “hot topics” of cyano-research, Sofia, Bulgaria.
- 14/11/2013 CYANOCOST Logo Competition: Winner is Camilla Capelli of Fondazione Edmund Mach, Trento, Italy.
- 15/11/2013 CYANOCOST Management Committee meeting, Sofia, Bulgaria.
- 19/12/2013 Submission of a proposal for the collaborative research project “CYANOHAZARD” within the 1<sup>st</sup> call of “Water-JPI”. The proposal was coordinated by A. Quesada and involved CYANOCOST partners from 10 countries.

- 3/2/2014 CYANOCOST Steering Committee Meeting (Teleconference).
- 21/2/2014 Working Group 4 Meeting on Dissemination in Rennes, France. 4 participants (organized by L. Brient and A. Quesada).
- 24/2/2014 Editorial Meeting “Handbook of Molecular Tools” in Brussels, 8 participants (organized by K. Sivonen, R. Kurmeier, A. Wilmotte)
- 25/2/2014 CYANOCOST presentation in “COST Info Day”, Athens, Greece (T. Kaloudis).
- 13/3/2014 CYANOCOST 2<sup>nd</sup> year’s budget is raised to 200000,00 € (incl. FSAC) !
- 21/3/2014 CYANOCOST presentation in “WATERMICRO 2014” conference for the World Water Day 2014 at the Ministry of Health, Athens, Greece (T. Kaloudis).  
[www.watermicro.gr](http://www.watermicro.gr)
- 31/3/2014 STSM completed: Kerstin Haagvist, Abo Akademi, Finland → University of Gdansk, Poland, Bioactive properties of cyanobacteria and microalgae isolated from brackish rock pools”.

