

CROSS-MEDITERRANEAN ENVIRONMENT AND HEALTH NETWORK

CROME

June  
2014

In this issue:

## Welcoming Message

by Prof. Dimosthenis Sarigiannis, CROME-LIFE Coordinator



### Greetings!

*Welcome  
back to the  
second  
newsletter of  
our project.*

In this newsletter we would like to keep you informed about the developments of the activities we have carried out in the last six months - from January 2014 to June 2014.

Most importantly, we would like to encourage all interested parties to support us in our endeavour and to constructively collaborate in achieving these results for the benefit of society as a whole through an improvement of the health and life quality of the population involved in the project.

We hope that you find this information useful, and we are looking forward to hearing your feedback.

### What is CROME?

**CROME** stands for:

**Cross - Mediterranean Environment and Health Network** and it is a 42 months demonstration project funded under the EU LIFE+ Programme 2007-2013 started in July 2013.

### PROGRESS

Project progress up to date

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### DISSEMINATION EVENTS

Dissemination Events

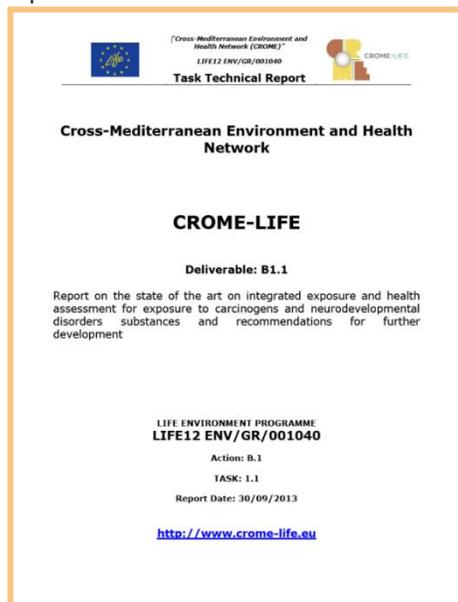
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# Project progress up to date

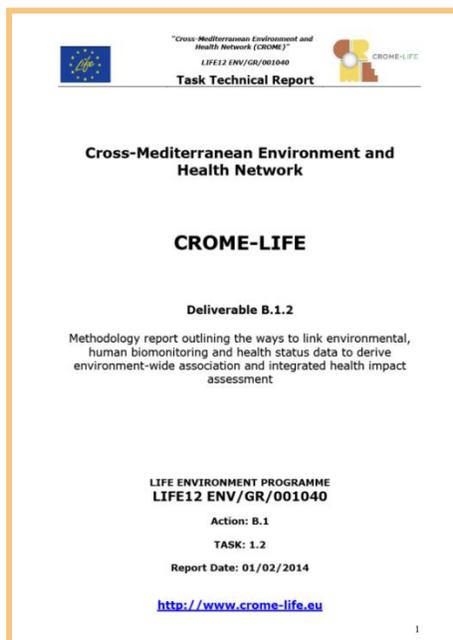
**Action B.1** "Development of methodological framework" has been completed.

The two related **deliverables B1.1** "Report on the state of the art on integrated exposure and health assessment for exposure to carcinogens and neurodevelopmental disorders substances and recommendations for further development" and **B1.2** "Methodology report outlining the ways to link environmental, human biomonitoring and health status data to derive environment-wide association and integrated health impact assessment" have been uploaded onto the public section of CROME-LIFE web site and are available for **download**.

**Deliverable B.1.1** gives a comprehensive overview of the state-of-the-art on integrated exposure and health assessment. For the completion of this report the CROME-LIFE project team reviewed about 1,000 papers and technical reports.



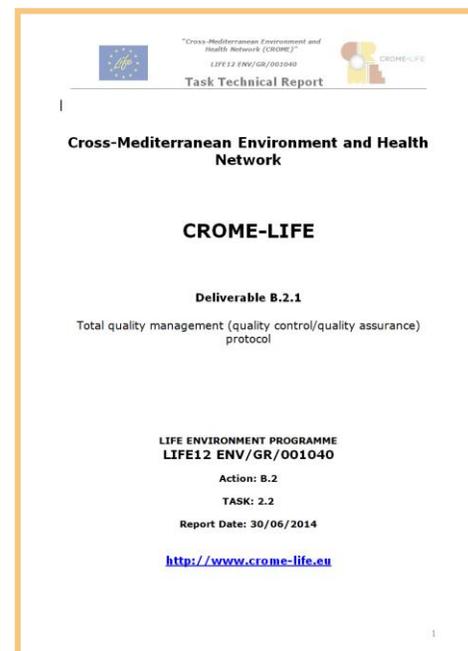
**Deliverable B.1.2** is the result of a close collaboration among the project partners aimed at defining the CROME integrated methodological approach to be applied in the case studies addressed by the project. CROME-LIFE innovates by promoting an integrated methodology which starts by estimating exposure using human biological monitoring data and works both forward (to disease) and backwards (to environmental exposures). The methodology detailed in this deliverable provides the blueprint for its application in the demonstration sites of the project.



With regard to **Action B.2** "Data collection and management" the CROME-LIFE team collected and reviewed data from the five demonstration areas on environmental variables, exposure determinants, human biomonitoring data, dietary data and time-activity patterns. After quality control the

data were stored into the in the CROME database.

**Deliverable B2.1** lays down the principles of the Quality Assessment / Quality Control (QA/QC) protocol with regard to both the management of the project and to the implementation of the study protocols and comparability of analytical results.



With regard to **Action B.3** "Targeted measurement campaigns to fill the data gaps" the communication plan of the human biomonitoring campaign results is in progress..

The CROME project team decided to deliver specific communication plans for each country and a different one for the common case study.

FOR MORE INFORMATION VISIT:

<http://www.crome-life.eu/index.php/deliverables/>

## MEETINGS

The CROME-LIFE team had several technical meetings during these six months both face to face and by teleconference. These meetings gave us the opportunity to discuss the time plan, the activities to be carried out during the project and the tools and methods to be applied to meet the project objectives.



*The CROME-LIFE team at the technical meeting in Rome at the ISS premises on 6 February 2014*



*The CROME-LIFE team at the technical meeting in Thessaloniki on 17 March 2014*

The CROME Consortium contacted "OIKON Ltd. - Institute for Applied Ecology", a research-oriented SME based in Croatia with recognized scientific and technical competencies in environmental and health association studies. OIKON, which coordinated among others the EU PHIME project in Croatia, was contacted to sound out the possibility to access HBM data collected in Croatia in the frame of the CROME common case study. The OIKON scientific director Dr. Z. Spiric has agreed to provide a portion of their samples/results of research carried out during the implementation of the EU FP6 PHIME project in Croatia to be used for the benefit of the CROME common case study at zero cost.

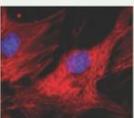


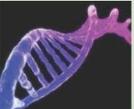
FOR MORE INFORMATION VISIT

<http://www.crome-life.eu/index.php/news/>

# CROME - LIFE leaflets

The CROME-LIFE informative leaflet has been translated and printed in *Italian*, *Catalan* and *Slovenian* and will be distributed during the foreseen meetings with national stakeholders.



**Network  
cross-mediterraneo  
per l'ambiente  
e la salute**

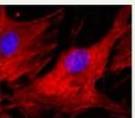


**Sito web: [www.crome-life.eu](http://www.crome-life.eu)**



Con il contributo dello strumento finanziario LIFE della Comunità Europea  
LIFE 12 EMV/GR/001040

*Italian Leaflet*



**XARXA  
TRANSMEDITERRÀNIA  
DE MEDI AMBIENT I  
SALUT**

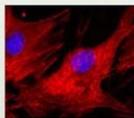


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Amb la contribució de l'instrument de finançament LIFE de la Comunitat Europea  
LIFE12 ENV/GR/001040

*Catalan Leaflet*



**SREDOZEMSKA  
NAVEZA NA  
PODROČJU  
OKOLJA IN  
ZDRAVJA**



**Spletna stran: [www.crome-life.eu](http://www.crome-life.eu)**



Sofinanciranje: finančni organ Evropske skupnosti — LIFE  
LIFE12 ENV/GR/001040

*Slovenian Leaflet*

FOR MORE INFORMATION VISIT:

<http://www.crome-life.eu/index.php/deliverables/>

# Dissemination events

Dissemination and networking activities during these 6 months of the project included the participation at several workshops, conferences and scientific events hereinafter summarized:

- 8<sup>th</sup> Annual Arctic Frontiers conference in Tromso (Norway), on January 19-24, 2014

where the CROME-LIFE team participated with two platform presentations: the first one on the persistent organic compound and health outcomes in the Mediterranean regions and the second on the environmental and human biomonitoring as a tool for assessing the mobility and reactivity of mercury. In addition a poster on the exposure of European population to mercury was presented.

- International Mercury Symposium in Jeju, (Korea), on February 19, 2014

where Prof M. Horvat (JSI) held a presentation entitled "Cost-effective biomonitoring strategies for mercury" in which the objectives and the methodological framework of CROME were presented in relation to the usefulness of Human Biomonitoring to estimate the risks and the benefits for human health associated to Mercury exposure through food in the Mediterranean Region.

- Towards a Joint European Human biomonitoring Initiative in Brussels, (Belgium), on June 25, 2014

where Prof M. Horvat (JSI) presented the CROME project as one of the EU projects that can substantially contribute to the EU initiative in view of the results exploitation

## A toxic legacy

*Illegal dumping of toxic waste in the Italian Campania has been blamed for high rates of ill health in the region. The suspected link needs to be investigated using the most modern methods.*

It is tempting to see health hazards everywhere, especially if one believes the tabloid press. From the air we breathe to the food we eat and the fun we have, the risks of normal, everyday life have never received more attention.

But the people who live in the fertile agricultural landscape of Italy's Campania region, around the historic city of Naples, have genuine reason to be anxious about their health. For decades they have lived on top of potentially lethal toxic waste, illegally and secretly dumped there by the mafia. Rates of some cancers are higher, and lifespans shorter, than elsewhere in Italy. Complaints, though, have been continually silenced.

But Italian environmental police, working closely with anti-mafia forces, have used smart technologies to discover the subterranean dumps and are now systematically excavating them. Environmental officials are analysing soil and water. The crater walls look like geological strata, each layer formed by different types of waste: asbestos from demolished buildings, dioxin-rich chemical sludge, drums of solvent, the odd motor vehicle. Black water forms pools at the bottom. No one is allowed to even look into the stinking, steaming pits without a respirator mask.

Massive street demonstrations in Naples last autumn prompted officials to take action. The national government approved funding earlier this year for a two-year programme in which the several hundred thousand people who live close to the dumps will be screened for cancers that have been linked to environmental exposure. The health ministry has analysed all the health and environment studies carried out so far and concluded that there is no evidence yet to link the dumps to cancer. Yet local people are convinced that noxious run-off from the dumps is gradually killing them and their families, loading their bodies with toxic chemicals and twisting their cells into tumours. They want answers, and they want the scientists to supply them.

### TOXIC BLACK BOX

Environmental police have so far identified 32 sites containing an estimated minimum of 3.5 million cubic metres of toxic waste. But without crucial information about actual exposure, including dose levels, it is impossible to determine whether the dumped chemicals have raised cancer risk in what is a poor region, where people smoke more and have unhealthier lifestyles than in other parts of the country. Similar issues arise whenever cancer clusters emerge around nuclear power plants or industrial sites. Attempts to prove a causal link face several dilemmas. One is that the number of cancer cases is usually too small for conclusive statistics. Another is that the cancers usually become apparent years after the hypothetical exposure to carcinogen, and such historical exposures are almost impossible to prove scientifically. But usually, the identity of the feared chemicals is known.

In Campania, the challenge is greater because the very fundamentals are unknown — not only the location and chemical content of the

dumps, but also the true local incidence of cancer. Over the past year or so, that information has started to emerge. And biologists there are wondering if they might be able to tie their whole noxious experience into the global research effort to develop methods to prove chemical exposure scientifically. Could their poisoned fields serve as a giant experiment in the new science of exposomics, which aims to identify biomarkers of past and present exposure to toxic environmental chemicals?

"Campania could be a perfect field study for a biomonitoring research programme," says Genaro Ciliberto, scientific director of the National Tumour Institute Pascale in Naples.

Precedents do exist. One is in the city of Thessaloniki in northern Greece, where newly impoverished people have started to burn more biomass for home heating, contributing to smog. A research project funded by the European Union combines regular analyses of atmospheric pollutants with analyses of urine and blood of a cohort of people to quantitatively determine how their gene-expression, protein and metabolite profiles change as a result of pollutants entering their bodies.

Italy, in austerity mode, has little money to spare for research. So Ciliberto has a suggestion. "This is the sort of programme that should be funded from the structural funds that the European Commission has awarded the region."

He could be right. These subsidies came to a total of €6.9 billion (US\$9.6 billion) for Campania alone in 2007–13, and the commission explicitly encourages use of the funds to boost local research and development capacity. Allocations of the next tranche of structural funds within Italy (2014–20) are currently under discussion. Ciliberto's idea deserves serious consideration.

The ancient Romans called the area *Campania felix*, or fortunate countryside, because of the soil's fertility (conferred by its frequent coating with volcanic ash from Mount Vesuvius's deadly eruptions). But modern Italians call it *Campania infelix*, and its agriculture-based economy is suffering from public perception that its products could be contaminated.

Anti-mafia action made the waste-disposal racket too public to continue after 2003. But mafia domination continued to stifle public discussion about the environmental poisoning. Locals, government officials and even many academics have been reluctant to talk. Some feared retribution, but more feared that they or their friends would be exposed as having helped in the logistics of the operations, or as having accepted mafia bribes for turning a blind eye. People began setting fire to the dumps, making matters worse.

The fires are out now, but the questions of ill health remain. They should be properly investigated. Even if the results prove inconclusive, the information gained would be worth it. ■

Work of CROME with regard to the association between both toxic waste (in Italy) and Particulate matter (in Greece) and health outcomes was referred to in the editorial of Nature published the last week of April (<http://www.nature.com/news/a-toxic-legacy-1.15087>).

*The editorial of Nature (April 2014)*

- Scientific lecture at the Royal Academy of Medicine of the Balearic Islands, Palma (Spain), on May 6, 2014

where Prof. J. Grimalt described to a wide audience and to medical doctors and nurses the results of the researches on the effects of chemical pollutants in the health and development of childhood. The lecture had a strong impact on local media, with interviews in newspapers such as "Diario de Mallorca" and "Ultima Hora", as well as journals specialized in Health Care such as "Salut i Força".



22 **Ultima Hora** LOCAL

### «La Facultad de Medicina en la UIB sería una gran oportunidad para las Islas»

*El profesor Joan Grimalt pronuncia hoy una conferencia en la Reial Acadèmia*

S. CARBONELL

«Poner en marcha la Facultad de Medicina en la UIB sería una gran oportunidad para las Islas», afirma el profesor Joan Grimalt Obrador, que esta tarde pronunciará una conferencia en la Reial Acadèmia de Medicina de les Illes Balears.

El mallorquín Joan Grimalt Obrador (Palma, 1956), que es profesor de investigación del Consejo Superior de Investigaciones Científicas y miembro del Institut d'Estudis Catalans disertará a las 20.00 horas en el salón de actos de Can Campaner sobre 'Efectos de los contaminantes orgánicos persistentes en la salud infantil'.

**Actividad**  
Investigador especializado en temas de medio ambiente, dirige el Institut de Diagnosi Ambiental i Estudis de l'Aigua. Su actividad se centra en el estudio de los compuestos orgánicos naturales y antropogénicos como indicadores de los cambios climáticos y sus efectos, y del estado de salud de los ecosistemas y organismos vivos.

Grimalt, que lleva cerca de 40 años viviendo fuera de Mallorca, «a la que vuelvo siempre que puedo en vacaciones y durante las fiestas para

► **INVESTIGACIÓN**  
«Baleares tiene investigadores con muy buen nivel, pero muchos no encuentran trabajo»

estar con la familia», valora muy positivamente el hecho de que la Reial Acadèmia de Medicina inicie hoy con él un ciclo de conferencias que se desarrollará a lo largo de los próximos meses y en el que intervendrán científicos de nuestras islas de primerísimo nivel, que, en su mayoría, están desarrollando su labor profesional fuera de Baleares, con la intención de que su labor sea conocida en su tierra natal.

«Baleares tiene investigadores y científicos con muy buen nivel, el problema es que muchas veces no encuentran trabajo en las Islas», afirmaba ayer el profesor Grimalt.

El científico se muestra a favor de que la Comunista apueste no solo por el sector turístico, sino que también trabaje para mejorar la industria y la investigación.

**EL APUNTE**

#### Un amplio currículum como químico e investigador

El doctor Grimalt es ingeniero químico del Instituto Químico de Sarrià de la Universitat Ramon Llull (1978), licenciado en Ciencias Químicas por la Universitat Autònoma de Barcelona (1979) y doctor en Ciencias Químicas por la Universitat Autònoma de Barcelona (1983). Ha publicado 571 trabajos científicos; ha participado en 95 proyectos de investigación y ha dirigido 42 tesis.

Hemeroteca | Suscribirse | Clasificados | Miércoles, 14 mayo 2014 | Catorce

**Diario de Mallorca**  
www.diariodemallorca.es | Palma 21/12

Mallorca | Actualidad | Deportes | Economía | Opinión | Ocio | Vida y Estilo | Comunidad

Mallorca | Diario de Palma | Part. Prensa | Suscripciones | Medio Ambiente

EN DIRECTO | Wimbledon/Semifinales: Djokovic - Dimitrov

Diario de Mallorca > Mallorca

VOTE ESTA NOTICIA

Joan Grimalt Obrador

### 'No es una gran idea seguir una dieta rica en pescado azul por su alto contenido en mercurio'

Investigador del Consejo Superior de Investigaciones Científicas (CSIC), este doctor en Ciencias Químicas por la Autónoma de Barcelona disertó recientemente en la Real Academia de Medicina de Baleares sobre los efectos de los contaminantes orgánicos persistentes en la salud infantil. "Los mercurios se desintoxican de contaminantes orgánicos como el DDT presentes en su organismo teniendo más hijos", sostiene

14.05.2014 | 06:50

**I. Olazola. Palma.** «¿Cuáles son los principales contaminantes orgánicos presentes en el medio ambiente de los que no nos podemos sustraer? Por ejemplo, el DDT usado en el pasado para combatir las plagas de insectos y sus derivados, los PCB (policlorobifenilos) presentes en los aceites refrigerantes de los transformadores eléctricos, el hexaclorocíclohexano usado para la fabricación de disolventes orgánicos, o el lindano, un insecticida organoclorado. En definitiva, se trata de compuestos con muchos átomos de cloro en la molécula, circunstancia que les confiere una gran estabilidad en el medio ambiente y son muy difíciles de eliminar. Además, son bastante volátiles, lo que les permite propagarse más eficientemente, y se absorben en la cadena orgánica por lo que tienen tendencia a acumularse en los organismos vivos.

«Pero, ¿no están prohibidos estos contaminantes? El DDT está prohibido en Europa desde hace años, pero sigue estando autorizado su uso en países donde la malaria es endémica. Se sigue utilizando en toda el África tropical en base a una recomendación de la Organización Mundial de la Salud (OMS) que data del año 2005.

**EL APUNTE**

**Joan Grimalt**  
El doctor Grimalt, está hablando el próximo 6 de mayo sobre los efectos de los productos tóxicos adquiridos durante la gestación en la salud de los niños. ¿Cuáles son las

R. Cada día se dan a las madres indicaciones más acertadas de los hábitos que tienen que tener durante el embarazo. En este sentido, tanto fumar como beber alcohol no son hábitos recomendables. Hoy en día, se hace un segui-

8 | Salut i Força • Del 28 de Abril al 11 de Mayo de 2014

ENTREVISTA

JOAN GRIMALT / CIENTÍFICO DEL CSIC, EXPERTO EN SALUD AMBIENTAL

### «La atmósfera de las ciudades es uno de los elementos que más perjudica la salud»

El doctor Joan Grimalt pronunció el próximo 6 de mayo una conferencia en la Reial Acadèmia de Medicina de Baleares sobre los efectos de los productos tóxicos «adquiridos durante el embarazo en la salud de los niños». Joan Grimalt Obrador (Palma de Mallorca, 1956) es catedrático de Investigación del Consejo Superior de Investigaciones Científicas (CSIC), director del Instituto de Diagnòstic Ambiental i Salut de l'Aigua (IDMA) del CSIC y Director del Centro de Investigación y Desarrollo del CSIC, Ingeniero Químico por el Instituto Químico de Sarrià, por la Universitat Ramon Llull (1978), licenciado en Ciencias Químicas por la Universitat Autònoma de Barcelona (1979) y doctor en Ciencias Químicas por la Universitat Autònoma de Barcelona (1983). Ha publicado 571 trabajos científicos en el Colegio de Oceanografía de la Oregon State University (1983, USA) y en la School of Chemistry de la Universidad de Bristol (1985, Reino Unido). Su actividad profesional se centra en el estudio de los compuestos orgánicos naturales y antropogénicos como indicadores de los cambios climáticos y sus efectos, y del estado de salud de los ecosistemas y organismos vivos (incluidos los humanos).

**Joan Grimalt**  
R. Cada día se dan a las madres indicaciones más acertadas de los hábitos que tienen que tener durante el embarazo. En este sentido, tanto fumar como beber alcohol no son hábitos recomendables. Hoy en día, se hace un segui-

- **International workshop on “Endocrine Disrupting Chemicals and Obesity/Diabetes: implication for risk assessment” Parma (Italy), on May 16-17, 2014**

where Dr. Calamandrei (ISS) was invited to present the CROME project methods and objectives to an audience of about thirty scientists among the major EU and US experts in this field.

The **AUTH team** has included information on the CROME study design and subsequent analysis on a WHO report on human biological monitoring in Europe (in the 52 countries comprising the WHO European region), which will be presented and discussed in Bonn at the European Centre for Environment and Health of the WHO in July 7-8 2104 in preparation of the inter-ministerial conference of the WHO on Environment and Health to be held later in the year.

With regard to networking activities **ISS team** met Prof. Philippe Grandjean who held two seminars in Rome, on March 24th and on March 27th 2014. The latter, entitled “Precautionary policy-making from environmental epidemiology: mercury, PCB, PFC and other headaches” was held at the ISS and involved about 60 researchers in the field of environmental health, epidemiology and neurosciences.

In February 2014 the **CSIC team** organized a meeting in Barcelona with top officers of La Caixa Foundation for describing the potential effects of airborne PAH in urban areas on the health of scholar boys and girls and the strategies of CROME-LIFE study that will be used in the exposure studies of Menorca and Valencia.

**ISS and JSI team** met Prof. Fabio Barbone (University of Udine, Italy) and his team as well as representatives of the Burlo-Garofolo Institute of Trieste (Italy) on April 3<sup>rd</sup> 2014 to discuss the foreseen CROME targeted biomonitoring campaign. At the meeting Drs. Calamandrei and Horvat illustrated CROME, its main aims and methodology.

**The CROME team** prepared a proposal for a special session on the Exposome at the International Conference on Heavy Metals to be organised in September 2014, Guiyang, China in order to present the CROME project and its first results. The proposal was accepted.

**CSIC** has published the paper entitled Transport of persistent organic pollutants across the human placenta in *Environment International* 65, 107-115 (2014)

**JSI** published a review paper entitled Human mercury exposure and effects in Europe *Environmental toxicology and chemistry* in *Environmental Toxicology and Chemistry*, 2013, DOI: 10.1002/etc.2482.

# CROME-Life website is online

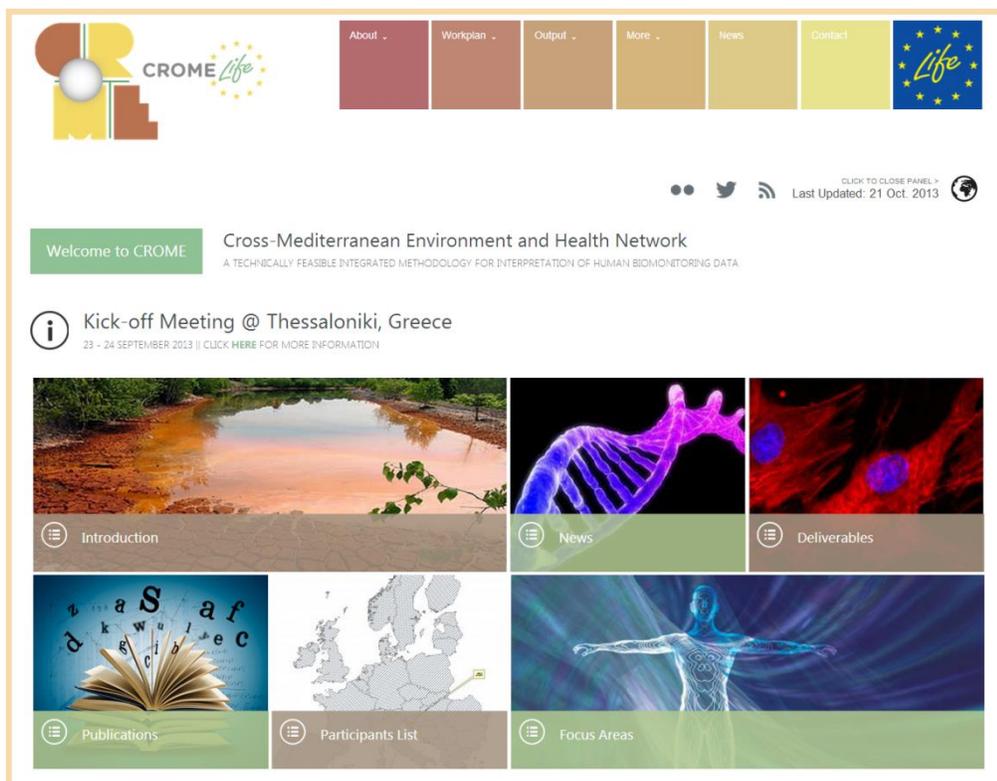
Visit our project website at [www.crome-life.eu](http://www.crome-life.eu).

On the website you can find information about

- the structure of the project,
- methods,
- workplan and
- links to the partners.

There is also a section with products such as

- deliverables,
- published papers,
- presentations and
- an area where announcements of key scientific events (e.g. workshops, conferences) are reported.



The web site is continuously being updated with the latest news and deliverables. If you have any documents you would like to be added on the CROME-LIFE website, please let us know.

## CROME Newsletter2

### NEXT ISSUE:

The next issue will feature other news and documents developed by the CROME-LIFE Consortium covering the period from **July 1, 2014** - to **December 31, 2014**

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