



**LIFE17 ENV/ES/000260**

**01/01/2019-31/12/2023**

Deliverable Action D1. Communication, dissemination and raise awareness actions

## **VIDEO / APP**

**October 2023**

### *Disclaimer*

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## 1. Introduction

During the development of the Life Surfing project, numerous videos have been made with the aim of disseminating the problems of HCH and DNAPL in Aragon and Europe and specifically, the actions and work developed during the project.

To this end, an informative video [1. Video Life Surfing Project](#) has been prepared, clearly explaining to the general public and interest groups the problem of the site, as well as the actions that have been taken for its future remediation.

At the same time, 22 short videos were edited (see section [2. Life Surfing Test](#)) to facilitate their publication on social networks, as "information pills" made during the development of the test.

Lastly, the effort made during the 14th International Forum on HCH and pesticides is to be highlighted. This event, organized both face-to-face and online (via streaming), was broadcast on the Zoom platform with simultaneous translation in Spanish and English. All (more than 130) held in the three event rooms of the Forum were recorded during the whole Forum duration, together with a series of informal and ambient videos of the event. All these videos are collected in the following sections of this report:

- Section 3: Ambient videos [3.Videos 14th International HCH & Pesticides Forum](#).
- Section 4: forum conferences [4.Videos of 14th International HCH & Pesticides forum presentations](#).

The publication and dissemination of the Forum sessions in Spanish and English has been a challenge, due to the number of hours recorded. Nevertheless, it has been fulfilled making them available for free and with open access, nationally and internationally. The videos are organized per day and per room, following the program of the 14th Forum (<http://www.hchforum.com/schedule/>).

This action of the project has been very enriching for raising awareness, communicating and transferring aspects of the project, making technical information understandable to stakeholders from all fields and sectors: society, scientists, public bodies and politicians. It has therefore contributed to join efforts to progress on the solution of a problem with great environmental and economic impact.

## 2. Video Life Surfing Project (7min 39s)

The project video, including small video capsules, is available in English and Spanish in the LIFE SURFING video channel:

English & Spanish: <https://www.youtube.com/watch?v=0BY4JjFIWsU>



### 3. Short videos “Life Surfing Test”

#### 3.1. Life Surfing Lindane\_01 (6 min 48s)

English & Spanish: <https://youtu.be/DhgszFVivBE>



#### 3.2. Life Surfing Lindane\_02 (12s)

English & Spanish: <https://youtu.be/hleHh-6-YjQ>



#### 3.3. Life Surfing Lindane\_03 (4s)

English & Spanish: <https://youtu.be/naDUxkiwQpg>



### 3.4. Life Surfing Lindane\_04 (5 min 2s)

English & Spanish: <https://youtu.be/-jHtTk3oZNE>



### 3.5. Life Surfing UCM\_01 (44s)

Spanish & English: <https://youtu.be/ync2ZpYLORM>



### 3.6. Life Surfing UCM\_02 (58s)

Spanish & English: <https://youtu.be/QpUwTjLPmx4>



### 3.7. Life Surfing UCM\_03 (38s)

Spanish & English: <https://youtu.be/E6Wq66rVUQQ>



### 3.8. Life Surfing UCM\_04 (56s)

Spanish & English: <https://youtu.be/OAfF5dpW8k>



### 3.9. Life Surfing Lindane. GA\_01 (43s)

Spanish & English: <https://youtu.be/Bx9OPbvsCVA>



### 3.10. Life Surfing Lindane. GA\_02 (38s)

Spanish & English: [https://youtu.be/I\\_H3dhw27n4](https://youtu.be/I_H3dhw27n4)



### 3.11. Life Surfing Lindane. GA\_03 (54s)

Spanish & English: <https://youtu.be/bJ2u6GLEQXk>



### 3.12. Life Surfing Lindane. GA\_04 (44s)

Spanish & English: <https://youtu.be/KXRnjCjtzJQ>



### 3.13. Life Surfing Lindane. GA\_05 (29s)

Spanish & English: <https://youtu.be/3yAK6qZMPJE>



### 3.14. Life Surfing Lindane. GA\_06 (38s)

Spanish & English: <https://youtu.be/U7AVyZaMLss>



### 3.15. Life Surfing Lindane. GA\_07 (40s)

Spanish & English: <https://youtu.be/dYSNwnnijedo>



### 3.16. Life Surfing Lindane. GA\_08 (42s)

Spanish & English: <https://youtu.be/0bfgwX4jpU8>



### 3.17. Life Surfing Lindane. GA\_09 (50s)

Spanish & English: [https://youtu.be/VYGt\\_O8vKP8](https://youtu.be/VYGt_O8vKP8)



### 3.18. Life Surfing Lindane. GA\_10 (49s)

Spanish & English: <https://youtu.be/Jk3ZIMw-bSs>



### 3.19. Life Surfing Lindane. GA\_11 (50s)

Spanish & English: <https://youtu.be/SFwR4Tu1Jc8>



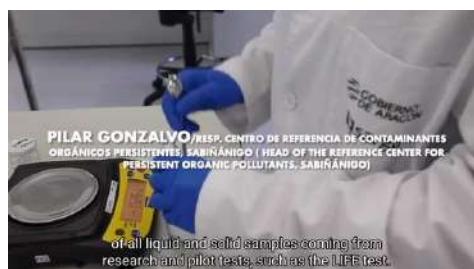
### 3.20. Life Surfing Lindane. SARGA\_01 (52s)

Spanish & English: <https://youtu.be/nv7QlrhaPEA>



### 3.21. Life Surfing Lindane. SARGA\_02 (49s)

Spanish & English: <https://youtu.be/UFcnWG6wafs>



### 3.22. Life Surfing Lindane. SARGA\_03 (39s)

Spanish & English: <https://youtu.be/WsjgzpZoH44>



## 4. Informal & ambient Videos of 14<sup>th</sup> International HCH & Pesticides Forum

### 4.1. 21 February 2023 session (40min 30s)

English & Spanish: <https://youtu.be/lSyJk1GFRY0>



### 4.2. 22 February 2023 session (24min 40s)

English & Spanish: <https://youtu.be/yML6zGYmbNI>



### 4.3. 23 February 2023 session (6min 25s)

English & Spanish: <https://youtu.be/QP5WPwgI9Mg>



#### 4.4. 24 February 2023 session (5min 40s)

English & Spanish: <https://youtu.be/MECGRQ-XCrQ>



## 5. Videos of 14<sup>th</sup> International HCH & Pesticides forum presentations/speeches

### 5.1. Opening ceremony (48min 5s)

English: <https://www.youtube.com/watch?v=poq9G5OyRbo>

Spanish: <https://www.youtube.com/watch?v=ABtMW4ADVXk>



**Carlos Gamarra**  
Managing Director Climate Change and Environmental Education (Government of Aragon)



**Isabel García Muñoz**  
Member of European Parliament (Aragon, Spain)



**Sagrario Pérez**  
General Directorate of Environmental Quality, Sustainability and Climate Change (Xunta Galicia)



**Karolin Braunsberger-Reinhold**  
Member of European Parliament (Saxony-Anhalt, Germany)



**YOU ARE HERE TO LEARN ABOUT RESULTS**

**LINDANE LEGACY**  
LINDANE is an ambitious project that aims to support the Spanish Government and its Member State, the Aragon Region, ready for organizing the first international conference on topics such as Aragon, Galicia, Andalucía, Sássary Aragón, Soria, Sáclica, and La Rioja (Session 2 in Block 3 Wednesday).

**HCH IN EU project** EU Web Inventory to be used by the Spanish Government and its Member State, the Aragon Region, ready for organizing the first international conference on topics such as Aragon, Galicia, Andalucía, Sássary Aragón, Soria, Sáclica, and La Rioja (Session 2 in Block 3 Wednesday).

**OBsolete PESTICIDES - POP! PESTICIDES**  
IMPLEMENTATION R. ONGOING

**Block 12** SEPA Life cycle management of old pesticides and disposal in central Asian countries and Turkey  
Moderators: Dr. Mark Denev & Dr. Mark Denev



Maria Victoria Esteruelas  
 Aragonese Society of Agri-  
 Environmental Management (SARGA)      John Vijgen  
 International Association of HCH and  
 Pesticides (IHPA)

## 5.2. Block 1. Life Surfing (2h 25 min)

English: <https://www.youtube.com/watch?v=YFXRKcDplrM>

Spanish: <https://www.youtube.com/watch?v=LHs2AGgNuZY>

**0:00:00** Intro **0:03:27** 1. Net J., Cano, E., Fernández, J., Velilla, S.M. - LIFE SURFING: SURFactant enhanced chemical oxidation for remediatiNG DNAPL **0:19:19** 2. Sánchez-Valverde A., Romero P., Peiro A., Arjol M.A., Herranz C., Cano, E., Fernández J. - LIFE SURFING: FACILITIES, EQUIPMENT, CONSUMABLES, AND RESOURCES IN THE TEST EXECUTION **0:36:00** 3. Fernández, J. Santos, A., Herranz, C. Cano, E. Lorenzo, D., Arjol, M.A. - LIFE SURFING PROJECT, PREPARATORY WORKS FOR THE INJECTION OF SURFACTANTS AND OXIDANTS **0:53:20** 4. Fernández, J. Santos, A., Herranz, C. Net, J. Lorenzo, D., Arjol, M.A. - LIFE SURFING PROJECT, ENHANCED SURFACTANTS EXTRACTION (SEAR) IN A FRACTURED AQUIFER. **1:07:02** Discussion **1:20:22** 5. Fernández, J. Santos, A., Herranz, C. Net, J., Saez P., Arjol, M.A., Lorenzo, D. - LIFE SURFING PROJECT, IN SITU CHEMICAL OXIDATION ENHANCED WITH SURFACTANTS (SISCO) IN A FRACTURED AQUIFER **1:38:50** 6. Sanchez-Yepes, A. Santos, A., Fernández, J. Herranz, C. Cano, E. Lorenzo, D. - LIFE SURFING PROJECT: CONTAMINATED EMULSION TREATMENT by ADSORPTION in GAC and ADSORBENT REGENERATION. **1:47:06** 7. Herranz, C. Fernández, J. Santos, A., Salvatierra, A., Cano, E. Lorenzo, D., Arjol, M.A. - ON SITE REMEDIATION OF FLUIDS EXTRACTED IN SEAR TREATMENT IN THE LIFE SURFING PROJECT AT BAILÍN – SABIÑÁNIGO (HUESCA): SELECTIVE POLLUTANTS OXIDATION AND ADSORPTION. **1:57:56** 8. Herranz, C., Arjol, M. A., Fernández, J., Santos, A. - ON SITE ALKALINE HYDROLISIS OF FLUIDS EXTRACTED IN SEAR TREATMENT IN THE LIFE SURFING PROJECT AT BAILIN – SABIÑÁNIGO (HUESCA) **2:06:01** Discussion **2:14:35** 9. Fabian Simón - Video LIFE SURFING **2:22:36** Conclusion



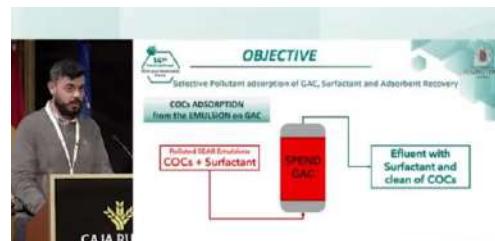
Jorge Net



Alicia Sánchez-Valverde



Jesús Fernández



Andrés Sanchez-Yepes



Carlos Herranz

### 5.3. Block 2. Strategy-Infrastructure-Monitoring Sabiñanigo Mega-site session (3h 18 min)

English: <https://www.youtube.com/watch?v=WNgWsOUs1Js>

Spanish: [https://www.youtube.com/watch?v=C4A\\_BwCBMUE](https://www.youtube.com/watch?v=C4A_BwCBMUE)

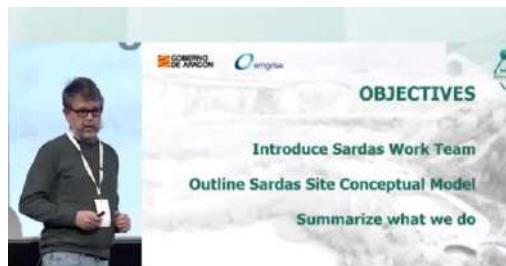
**0:00:00** Intro **0:02:16** 1. Cano, E., Fernández, J., Net, J., Velilla, S.M., L. Monge, Arjol, M.A. CASE STUDY OF THE INFLUENCE OF GEOLOGY AND THE PRESENCE OF DIFFERENT MATRICES ON THE APPLICABILITY OF HCH REMEDIATION TECHNOLOGIES. **0:17:26** 2. Velilla, S.M., Cano, E., Monge, L., Visanzay, A. UNIQUE STRATEGIC PROJECTS IN THE SITES AFFECTED BY HCH IN ARAGON. **0:30:23** 3. Guadaño J., Gómez J., Granados E., Fernández J. MULTIDISCIPLINARY PERSPECTIVE OF THE ENVIRONMENTAL MANAGEMENT OF THE SARDAS SITE. **0:44:52** 4.1. Monge, L. Velilla, S.M., Cano, E., Fernández, J., Net, J. PURIFICATION, ANALYSIS AND LABORATORY MANAGEMENT SERVICE, TECHNICAL ASSISTANCE TO THE FACULTY MANAGEMENT AND MONITORING FOR SPACES AFFECTED BY HCH CONTAMINATION. **0:56:26** 4.2. Ruiz, A; Arjol, M.A.; L. Monge; Gonzalvo. P; Velilla, S.M., Cano, E., Fernández, J., Net, J. ENVIRONMENTAL MONITORING IN THE SURROUNDINGS OF THE SPACES AFFECTED BY THE RESIDUE FROM THE MANUFACTURE OF THE HEXACHLOROCYCLOHEXANE PESTICIDE IN THE TOWN OF SABIÑANIGO. **1:06:29** 4.3. Arjol, M.A.; L. Monge; Cano, E., Velilla, S.M., Fernández, J., Net, J. AIR QUALITY MEASUREMENT TASKS IN RELATION TO THE

DECONTAMINATION WORKS OF MANUFACTURING WASTE OF THE HEXACHLOROCYCLOHEXANE PESTICIDE IN THE TOWN OF SABIÑÁNIGO. [1:17:11](#) 4.4. Gonzalvo, P., Ruiz, A., Monge, L., Velilla, S.M., Cano, E., Fernández, J., Net, J. LABORATORY HCH SABIÑÁNIGO-REFERENCE CENTER IN RESEARCH ON PERSISTENT ORGANIC COMPOUNDS. [1:27:03](#) 4.5. Ayala, C., L. Monge., Cano, E., Velilla, S.M., Fernández, J., Net, J. INTEGRAL MANAGEMENT OF THE PREVENTION OCCUPATIONAL RISKS IN THE EXPLOITATION, EXECUTION OF WORKS AND SPECIAL ACTIONS, INVESTIGATION, AND REMEDIATION OF SOILS AND/OR SITES CONTAMINATED BY HCH. [1:40:38](#) 5. Navarro, I., de la Torre, A., Arjol, M. A., Fernández, J., Martínez, M. A. PERSISTENT PESTICIDES IN AIR FROM A FORMER HCH PRODUCTION SITE IN SPAIN. [1:53:53](#) 6. Muñoz-Arnanz, J., Colomer-Vidal, P., Ros, M., Vicente, A., Salcedo, C., Bartalini, A., Jiménez, B. ATMOSPHERIC HCH CONCENTRATIONS (2008-2019) FROM THE SPANISH MONITORING PROGAM ON POPs. [2:07:13](#) 7. Samper J., Sobral B., Montenegro L., Guadaño J., Gómez J., Delgado F., San Román J., Fernández J. 2D MODEL OF GROUNDWATER FLOW AND DISSOLVED HCH TRANSPORT THROUGH THE GÁLLEGO RIVER ALLUVIAL AQUIFER DOWNSTREAM THE SARDAS HCH LANDFILL (HUESCA, SPAIN). [2:22:55](#) 8. J Gómez, J Guadaño, Samper J., Sobral B., Suso J., Fernández J. TRACER TESTS IN THE HCH-AFFECTED ALLUVIAL AQUIFER DOWNSTREAM THE SARDAS LANDFILL (HUESCA, SPAIN). [2:35:30](#) 9. Samper J., Sobral B., Pisani B., Montenegro L., Guadaño J., Gómez J., Fernández J. 3D GROUNDWATER FLOW AND CONTAMINANT TRANSPORT MODEL OF THE SARDAS LANDFILL (HUESCA, SPAIN). [2:48:20](#) 10. Rodríguez-Arévalo, J., Castaño, S., Martín-Ruiz, M., Rodríguez-Abad, R., Asanza, E., Delgado, F., San Román, J. DIAGNOSIS OF LINDANE CONTAMINATION OF THE SARDAS LANDFILL (SABIÑÁNIGO) IN THE GÁLLEGO RIVER AND PROPOSAL FOR ACTION [3:02:19](#) 11. AlonsoT., AlcaldeD., Escobar-ArnanzJ., EncinasR., FernándezJ. MASS DISCHARGE TEMPORAL EVALUATION IN A TRANSECT LOCATED IN THE DISCHARGE ZONE TO THE GALLEGOS RIVER IN BAILIN LANDFILL, SABIÑANIGO (HUESCA).



Elena Cano

Sonia María Velilla



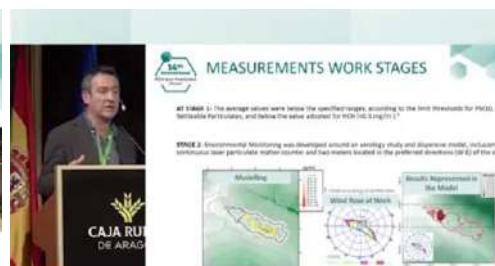
Joaquín Guadaño



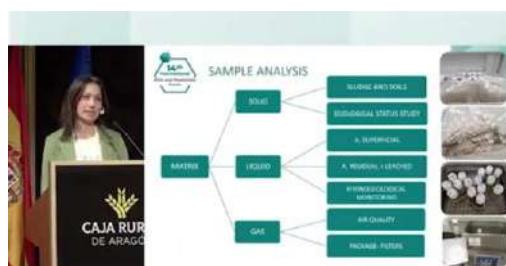
Laura Monge



Ana Ruiz



Miguel Ángel Arjol



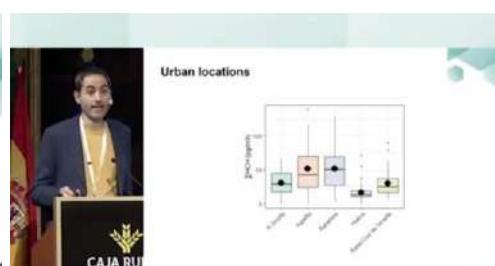
Pilar Gonzalvo



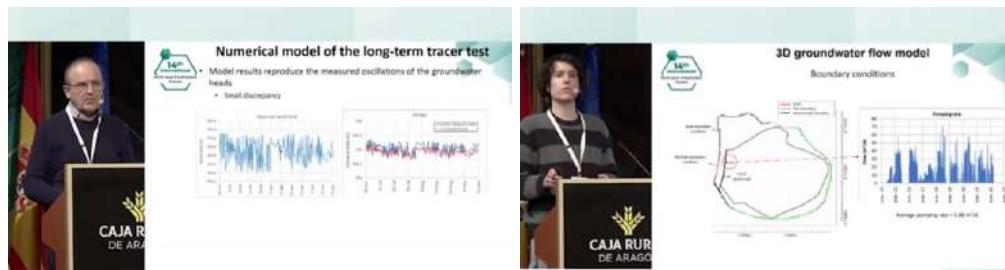
Carlos Ayala



Irene Navarro



Juan Muñoz-Arnanz



Javier Samper

Brais Sobral



Javier Rodríguez-Arévalo

David Alcalde

## 5.4. Block 3. Waste and soil technologies. Waste management experiences, destruction technologies (2h 21min)

English: <https://www.youtube.com/watch?v=RrqrCxJufsE>

Spanish: <https://www.youtube.com/watch?v=ZCA0htPlABk>

0:00:00 Intro 0:01:35 1. Grégoire Hamon, Antoine Cunin. TREATMENT AND RECOVERY OF HAZARDOUS WASTE MANAGEMENT 0:15:31 2. Eriksen, Søren; Ploug, Niels; Nielsen, Steffen Griepke. CAN LOW TEMPERATURE THERMAL DESORPTION BE CONVERTED TO DESTRUCTION AND BE MORE SUSTAINABLE THAN TRADITIONAL INCINERATION" 0:30:47 3. Zheng Peng (VIDEO). PROGRESS IN ENVIRONMENTALLY SOUND MANAGEMENT AND DISPOSAL OF PESTICIDE POPs WASTES IN CHINA. 0:40:16 4. Montse Papiol. HIGH TEMPERATURE INCINERATION OF POPs AND HAZARDOUS WASTE IS THE PROPER TREATMENT TO DESTROY THEM. 0:54:19 5. Saso Martinov. DDT DISPOSAL IN BANGLADESH. 1:12:33 6. Valentin Plesca, Larisa Cupcea, Ion Barbarasa. OBSOLETE PESTICIDES MANAGEMENT AND DESTRUCTION IN MOLDOVA. 1:29:30 7. Plesca, V., Barbarasa, I., Cupcea, L., Kubricht, J., Polak, M. MANAGEMENT OF POPs CONTAMINATED SITES IN MOLDOVA: CISMICHOI LANDFILL. 1:45:15 8. Lud D.,

Schwemm D., Babaev E., Kalandadze B., Simon M.P., Weller P., Düring R-A. PESTICIDE INFORMATION SOURCES AND WASTE MANAGEMENT – SURVEY RESULTS FROM AZERBAIJAN COMPARED TO GEORGIA. [1:59:53](#) Discussion



Grégoire Hamon



Søren Eriksen

**PROGRESS IN ENVIRONMENTALLY SOUND MANAGEMENT AND DISPOSAL OF POPs PESTICIDE WASTES AND OTHER POPs WASTES IN CHINA**

Dr. Zheng PENG, Dr. Zhiyuan REN

**14<sup>th</sup> International HCH and Pesticides Forum**  
21-24 February Georgia 2023

**PROGRESS IN ENVIRONMENTALLY SOUND MANAGEMENT AND DISPOSAL OF POPs PESTICIDE WASTES AND OTHER POPs WASTES IN CHINA**

Dr. Zheng PENG, Senior specialist, Foreign Environmental Cooperation Center of Ministry of Ecology and Environment, China

**PROGRESS IN ENVIRONMENTALLY SOUND MANAGEMENT AND DISPOSAL OF POPs PESTICIDE WASTES AND OTHER POPs WASTES IN CHINA**

Dr. Zheng PENG, Dr. Zhiyuan REN

Peng Zheng

**HAZARDOUS WASTE INCINERATOR**

**WHAT IS IMPORTANT IN A HAZARDOUS WASTE INCINERATOR**

- To avoid the hazards, 3 phases:
- 1st = 1.000 °C  
• Pyrolysis  
• Oxidation  
• Combustion and different ways to heat
- 2nd = 800 °C  
• Oxidation  
• 3rd = 1.000 °C  
• Heat exchanger to heat the next phase
- Burner and reactor to heat the first part  
• Through the bottom + Oxygen + velocity

**Montse Papiol**



Montse Papiol



Saso Martinov

Larisa Cupcea



Valentín Plesca

Daniela Lud

## 5.5. Block 4. Dealing with chlor alkali and mercury: synergy between Minamata and Stockholm convention: practical cases (2h 20min)

English: <https://www.youtube.com/watch?v=ai1oIQPYT98>

Spanish: <https://www.youtube.com/watch?v=yL5MaDjKA9A>

**0:00:00** Intro **0:00:40** 1. Ben Vauter (ONLINE). CHLOR ALKALI INDUSTRY, GLOBAL MERCURY PARTNERSHIP AND THE MINAMATA CONVENTION ON MERCURY. **0:18:33** 2. Roland Weber. RELEVANCE OF MERCURY CONTAMINATED SITES FOR GLOBAL MERCURY RELEASE AND IMPLEMENTATION SYNERGY OF THE MINAMATA & STOCKHOLM CONVENTION. **0:32:09** 3. Nikola Jelinek. MERCURY CONTAMINATION AS A LEGACY OF CHEMICAL PRODUCTION IN THE CEE REGION. **0:45:00** 4. Guido Van de Coterlet. WHERE STOCKHOLM MEETS MINAMATA – MERCURY AND HCH ISSUES AS CHLOR-ALKALI FACILITIES. **1:02:24** 5. Xavier Ibarz. ECON INDUSTRIES: VACUDRY® TECHNOLOGY, CASE STUDY: MERCURY AND HCH WASTE TREATMENT FROM CHLOR-ALKALI PLANTS. **1:18:04** 6. Castellnou A. BATREC: TREATMENT OF MERCURY AND MERCURY WASTES: MERCURY STABILIZATION AND SAFE DISPOSAL. **1:27:44** 7. Castellnou A. BATREC: HG DECONTAMINATION: CASE STUDIES IN SPAIN AND ABROAD, INCLUDING MERCURY BASED CHLOR-ALKALI PLANT DECOMMISSIONING. **1:37:20** 8. Boudewijn Fokke. ASGM (ARTISANAL AND SMALL-SCALE GOLD MINING) PROJECT INDONESIA **1:54:54** 9. Conde Ana I. Carrasco, F.Javier. REMEDIATION OF MERCURY CONTAMINATED SITE. THE CASE OF ALMADEN DUMP AND THE ANTIQUE MERCURY METALLURGY FACILITIES OF ALMADENEJOS CERCO. **2:10:53** Discussion **2:14:17** 10. Ben Vauter (ONLINE). Conclusion.

**MINAMATA CONVENTION IN BRIEF**



o force supply, trade, use, release, and emission of mercury; lly sound storage and disposal, and strategies to minated sites. sions for technical assistance, capacity building, cchange, public awareness, research and monitoring. es to report on measures taken to implement certain



Benjamin Vauter

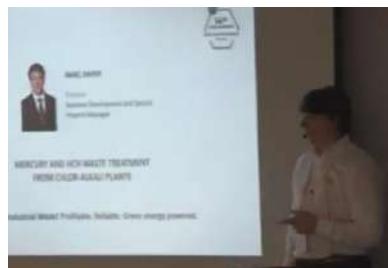
Roland Weber



Nikola Jelinek



Guido Van de Coterlet



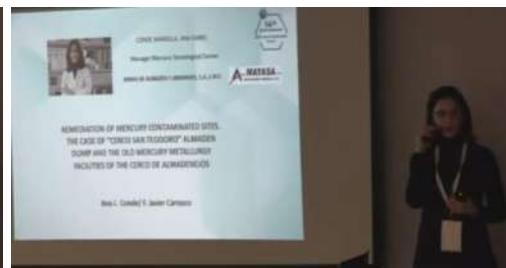
Xavier Ibarz



Angels Castellnou



Bouwde Fokke



Ana Isabel Conde

## 5.6. Block 5. Bioremediation (3h 41min)

English: <https://www.youtube.com/watch?v=RID7ymND0J4>

Spanish: <https://youtu.be/xNtpNp4LPhY>

**00:00:00** Intro **0:02:15** 1. Danny de Graaff, Tobias Praamstra, Cosimo Masini.  
**MICROBIOME BASED REMEDIATION AND OTHER NATURE BASED TECHNIQUES 0:14:45**  
 2. Cosimo Masini, Frederica Broglioli. INTEGRATED SUSTAINABLE APPROACH TO

LINDANE. [0:30:37](#) 3. Aguilar Bel, D., García Valero, A. DEGRADATION OF LINDANE BY BIOLOGICAL TECHNOLOGY. [0:43:59](#) 4. Jesica Soder, David Fernández, Daniel Salom, Ernest Marco, Teresa Vicent, Paqui Blánquez, Salom, D., Fernández-Verdejo, D., Soder-Walz, J.M., Vicent, T., Marco-Urrea, E., Blánquez, P. LAB STUDIES LEADING TO DECISION-MAKING FOR IN SITU BIOREMEDIALION OF ORGANOHALIDES. [0:59:03](#) 5. Kuntze, K. (ONLINE), Richnow, H., Fischer, A. SOURCE ALLOCATION AND DEGRADATION EVALUATION OF HCHs WITHIN A CONTAMINATED AQUIFER USING COMPOUND-SPECIFIC STABLE CARBON ISOTOPE ANALYSIS (CSIA). [1:13:35](#) 6. Escobar-Arnanz J., Berganza J., Brettes P., Encinas R., Alonso T., Alcalde D., Fernández J. ANALYSIS OF MICROBIAL COMMUNITIES FOR THE IDENTIFICATION OF INOCULANTS FOR AN IN-SITU BIOREACTOR FOR TREATING HCH CONTAMINATION IN GROUNDWATER. [1:27:10](#) 7. Granados, E., Herranz, C., Salvatierra, A., Guadaño, J., Fernández, J. CHARACTERIZATION OF NATURALLY PRESENT MICROBIAL POPULATION AT SARDAS' LANDFILL AND INQUINOSA FACTORY IN SABIÑANIGO, HUESCA. [1:35:00](#) 8. Escobar-Arnanz J., Encinas R., Alonso T., Alcalde D., Fernández J. APPLICATION OF MOLECULAR BIOLOGICAL TOOLS AND ISOTOPIC ANALYSIS FOR BIOGEOCHEMICAL CHARACTERIZATION OF FRACTURED BEDROCK AQUIFER IMPACTED BY DNAPL. [1:49:22](#) Discussion. [2:05:30](#) 9. Eduardo Beltrán-Flores, Martí Pla-Ferriol, Maira Martínez-Alonso, Núria Gaju, Montserrat Sarrà, Paqui Blánquez. PRELIMINARY STUDIES TO IMPLEMENT A PILOT REACTOR FOR THE BIOLOGICAL REMOVAL OF PESTICIDES FROM AGRICULTURAL WASHING WASTEWATER. [2:22:10](#) 10. Escobar-Arnanz J., Berganza J., Brettes P., Encinas R., Alonso T., Alcalde D., Fernández J. DESIGN, DEVELOPMENT AND SCALE-UP OF AN AEROBIC IN-SITU BIOREACTOR FOR REMOVAL OF HCH IN GROUNDWATER. [2:35:17](#) 11. Doolotkeldieva, T. D., Konurbaeva, M. U. APPLICATION OF THE METHOD OF PHYTOREMEDIATION OF PESTICIDE CONTAMINATED SOILS IN A FIELD EXPERIMENTAL PLOT IN CHIM-KORGON VILLAGE [2:47:54](#) 12. González J, Mancho C, Gil-Díaz M, García-Gonzalo P, Lobo M.C. ASSISTED BIOREMEDIALION FOR THE DEGRADATION OF ORGANOCHLORINE COMPOUNDS. [3:00:37](#) 13. Alan Seech, Michael Mueller. ENHANCED BIOREMEDIALION OF SOIL CONTAMINATED WITH LINDANE AND OTHER CHLORINATED PESTICIDES USING ZVI/ORGANIC CARBON REAGENTS. [3:15:59](#) 14. Santos, A., Checa-Fernández, A., Domínguez, C.M., Martín-Sanz, J.P., Valverde-Asenjo, I., Quintana-Nieto, J.R., Fernández-Sanjulián, J., Chicaiza-Guerra, K.Y. PRELIMINARY STUDY OF THE BIOREMEDIALION CAPACITY OF HORSE AMENDMENT IN SOILS CONTAMINATED WITH HCHS. [3:25:54](#) Discussion.



Danny de Graaff (TAUW), Tobias Praemstra (TAUW), Cosimo Masini (DnD Biotech)

DE GRAAFF, DAHAN  
Soil and Groundwater Consultant  
TAUW

MICROBIOME BASED REMEDIATION AND OTHER NATURE BASED TECHNIQUES

DnD Biotech

INTEGRATED SUSTAINABLE APPROACH TO LINDANE BIODEGRADATION

Cosimo Masini, CEO - cosimo@dndbiotech.it

14th International HCH and Pesticides For 22-24 February 2021 Zaragoza, Spain

Danny de Graaff

Cosimo Masini



AGUILAR BEL, DARIO  
Director Técnico  
dab

DEGRADACIÓN DEL LINDANO MEDIANTE TECNOLOGÍA BIOLÓGICA

Aguilar Bel, D., Navarro Giner, P., García Valero, A.

JACARRAL DE ARAGÓN

Results: Comparing different treatments  
PS186T Well at 15°C

TCB Isomers



David Aguilar Bel

Jesica Soder



KUNTZE, KEVIN  
Lab Manager  
Isodetect  
Investigating Global

SOURCE ALLOCATION  
EGRADATION EVALUATION OF HCHS WITHIN A STED AQUIFER USING COMPOUND-SPECIFIC STABLE CARBON ISOTOPE ANALYSIS (CSIA)

Kuntze, K., Richnow, H., Fischer, A.

JUAN ESCOBAR ARNAZ, JUAN  
Environmental consultant  
AECOM

ANALYSIS OF MICROBIAL COMMUNITIES FOR THE IDENTIFICATION OF INOCULANTS FOR AN IN-SITU BIOREACTOR FOR TREATMENT CONTAMINATION IN GROUNDWATER

Escobar-Arnaz J.J., Berganza J.J., Brettes P.F., Encinas R.V., Alonso E.I., Alcalde D.I., Feijóo J.M., Environment and Sustainability Department, Administration, Madrid, Spain  
Space Technology Center, University, Spain  
Department of Agriculture, Livestock and Environment, Aragon Government, Saragossa, Spain

CAJA RURAL DE ARAGÓN

Kevin Kuntze

Juan Escobar-Arnanz



✓ Share

MATERIAL AND METHODS

Microbiological characterization

- Latency time
- Metabolic activity (AMCD)
- Ecological indices
- Shannon Diversity
- Simpson Diversity

0.0 - 0.5 Low  
0.5 - 1.0 Medium  
1.0 - 1.5 High

BioLog EcoPlate™ Microplates

- 40 cells, 30 different C sources x 1
- Metabolic activity → colour change (purple)



White-rot fungi (WRF)  
Powerful non-specific enzyme system  
Urginea perissoides  
Margarina perissoides  
Laccase

Bacterial competition

Auto-immobilization (pellets)



Elena Granados

Paqui Blánquez Cano



T.D. Doolotkeldieva

- The widespread use of pesticides in agricultural practices has led to the countries, in one way or another, facing pesticide waste problems.
- The management and disposal of obsolete pesticides, as well as the reme pesticide-contaminated soils, are important global issues important for a environmental health and quality of life.
- One of the sources of pesticides entering the ecosystem are old pesticide landfills, and agricultural aviation airfields.
- For the Kyrgyz Republic, the problem of disposal of obsolete pesticides since there are more than 200 storage sites in the republic, and more than them are in an unusable condition, with contaminated degraded soil.
- These studies are implemented as part of the project "Technical assistance implementation of trials on bioremediation of POPs contaminated soils" successful clearing of soil from toxic substances and application of bio and phytoremediation technology in the field at the experimental site.



M. Carmen Lobo

## INTRODUCTION

- SOIL.**
- Finite
- Non-renewable
- Processes: Slow formation and regeneration
- Buffering capacity

## CONTAMINATION

- Effects of the anthropogenic activities.
- Decrease of the soil's potential capacity
- Increase of pollutants such as heavy metals and salts.
- Organic pollutants: hydrocarbons, organochlorine compounds, emerging pollutants (pharmaceutical compounds, personal hygiene compounds, etc.).



Alan Seech

## ENHANCED BIOREMEDIATION OF SOIL CONTAMINATED WITH LINDANE AND OTHER CHLORINATED PESTICIDES USING ORGANIC CARBON / ZVI REAGENTS

Alan Seech, Ph.D., Evonik Corporation, California, USA  
Michael Mueller, MBA., Evonik Operations GmbH, Innsbruck, Austria

14<sup>th</sup> International HCH and Pesticides Forum  
22 February 2023  
Zaragoza, Spain



Juan Pedro Martín-Sanz

## INTRODUCTION

- Use of pesticides led to an increase in crop yields
- Technical Hexachlorocyclohexane (HCH) and the isomer after were between the most widely used
- In 2001  $\alpha$ -HCH,  $\beta$ -HCH and  $\gamma$ -HCH  $\rightarrow$  Persistent Organic Pollutants
- Effects derived from the use of the soil, large amounts in the process and its management, sometimes negative
- Bioremediation as an effective decontamination technique
- Initial evaluation of the bioremediation capacity of the amendment on soils with different technical HCH is

## 5.7. Block 6. Waste and Soil technologies in-situ remediation technologies (2h 45min)

English: <https://youtu.be/EYms-l51bVk>

Spanish: <https://youtu.be/bKYZY9mkNvw>

00:00:00 Intro 0:00:42 1. Jeroen Vandenbruwane and Lionel Couent. SPIN® INJECTION TECHNOLOGY OR HOW TO PERFORM QUALITY INJECTIONS FOR AN OPTIMAL RESULT, EVEN IN LOW PERMEABILITY OR HETEROGENEOUS SOILS. EXPLANATIONS THROUGH THE CASE OF LINDANE. 0:14:56 2. Julien Maire, Antoine Joubert, Iheb Bouzid, Nicolas Fatin-Rouge, Fabien Laurent and Mathias Broquaire. INNOVATIVE HCH IN-SITU REMEDIATION USING POLYMER GEL AS A REAGENT CARRIER – RESULTS AT FIELD SCALE. 0:29:05 3. Marcello Carboni and Jack Shore. INSTALLATION, COMMISSIONING AND OPERATION OF AN INJECTABLE IN SITU PERMEABLE REACTIVE BARRIER TO PREVENT THE ADVECTION OF PER-AND POLYFLUOROALKYL SUBSTANCES AT A EUROPEAN AIRPORT. 0:43:02 4. Escobar-Arnanz J., Encinas R., Alonso T., Alcalde D., Fernández J. DESIGN, OPERATIONAL AND PROCEDURES FOR THE APPLICATION OF IN SITU CHEMICAL OXIDATION TREATMENTS IN FRACTURED BEDROCK AQUIFER

IMPACTED BY AN OLD DNAPL. [0:56:11](#) 5. Checa-Fernández, A., Santos, A., Romero, A., Domínguez, C.M. REMEDIATION OF HCHs-POLLUTED SOILS BY SURFACTANT-ENHANCED WASHING AND ACTIVATED PERSULFATE OXIDATION. [1:07:30](#) 6. Alonso T., Alcalde D., Escobar-Arnanz J., Encinas R., Fernández J. AIR SPARGING AND SOIL-VAPOR EXTRACTION PILOT TESTS IN BAILIN LANDFILL, SABIÑANIGO (HUESCA). [1:21:51](#) 7. Santos A., Lorenzo D., Domínguez C.M., Cotillas S., García Cervilla R., Fernández J., Guadaño J., Gómez J. PILOT TEST SEAR APPLICATION IN SARDAS LANDFILL REMEDIATION. [1:37:40](#) 8. Lorenzo D., Domínguez C.M., García Cervilla R., Santos A., Checa- Fernández A., Fernández J., Guadaño J., Gómez J. ISCO AND S-ISCO EVALUATION IN THE REMEDIATION OF SARDAS ALLUVIUM. [1:50:02](#) 9. Isidro, J., Fernández-Cascán, J., Guadaño, J., Sáez, C., Rodrigo, M.A. DESIGN AND VALIDATION OF ELECTROKINETIC TECHNIQUES FOR THE REMEDIATION OF THE ALLUVIAL SILT OF THE SARDAS LANDFILL (SABIÑANIGO) CONTAMINATED WITH HCHs. [2:06:41](#) 10. Isidro,J., Fernández-Cascán,J., Guadaño,J., Sáez,C., Rodrigo,M.A. DISMANTLING STRATEGIES FOR HIGHLY HCH-POLLUTED LANDFILL LEACHATE DUMP USING ELECTROCHEMICALLY ASSISTED TECHNOLOGY. [2:25:35](#) Discussion.



Jeroen Vandenbruwane



THE SPIN® INJECTION TECHNOLOGY : OPPORTUNITIES FOR II  
REMEDIATION OF SOLUBLE HCH/LINDANE CONTAMINATI

Dr. Eng. Vandenbruwane Jeroen and Eng. Couent Lionel



Julien Maire

Innovative HCH in-situ remediation using polyr  
Carriers– Results at field scale

Julien MAIRE and Antoine JOURNET (SERPOL – antoine.journet@ipm.  
Hub Bouleau (Univ. Bourgogne Franche-Comté)  
Nicolas Pelté-Rouge (Université de Poitiers)  
Fabien Laurent and Mathias Brosquère (SOLARIS)



Marcello Carboni



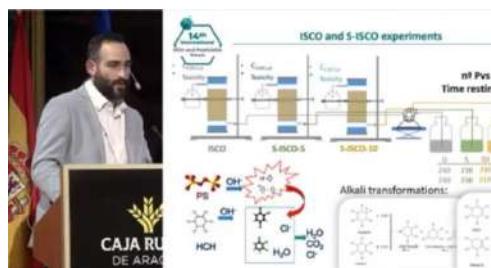
David Alcalde



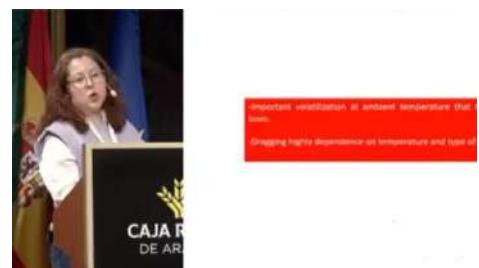
Alicia Checa-Fernández



David Lorenzo



Raúl García-Cervilla



Julia Isidro



Cristina Sáez Jiménez

## 5.8. Block 7. LIFEPOPWAT session (2h 11min)

English: <https://youtu.be/lQET5jSvubQ>

Spanish: <https://youtu.be/PBcrxf-hvHA>

**0:00:00 Intro 0:01:03** 1. 1 minute Video LIFEPOPWAT Hajek plant state of the art Hajek, January 2023. **0:02:12** 2. M.Černík, P. Hrabák, P. Brucek. WETLAND+® TECHNOLOGY: TREATMENT OF HCH CONTAMINATED WATER BY A PASSIVE BIOLOGICALLY BASED REMEDIATION SYSTEM. **0:11:48** 3. Němeček, J., Brůček, P., Hrabák, P., Černík, M.

EXPERIENCE FROM OPERATION AND TUNNING OF WETLAND+. TECHNOLOGY FOR TREATMENT OF HCH-CONTAMINATED WATER. [0:31:17](#) 4. Štrojsová, M., Balej, T. Hrabák, P., Černík, M. BENTHIC DIATOMS AS INDICATOR OF ENVIRONMENTAL IMPACT OF WETLAND+® TECHNOLOGY FOR TREATMENT OF HCH- CONTAMINATED WATER. [0:50:20](#) 5. C. A. Arias. BENEFITS OF THE PRESENCE OF PLANTS IN WETLAND+ SYSTEM TREATING HCH POLLUTED SITES. [1:04:57](#) 6. Kończak, B., Gzyl, G., Moycho-Jędros, J., Kvapil, P., Ptackova, H., Wasiński, P., Łabaj, P., Antos, V. Cernik, M. Adamczyk, M., Skalny, A., Wiesner-Sękala, M., Ratajski, P. ADAPTATION OF METHODOLOGICAL ASSUMPTIONS FOR DESIGN OF PILOT SCALE WETLAND+ INSTALLATION FOR WATER TREATMENT FROM HCH TAKING INTO ACCOUNT PRACTICAL LESSONS FROM DIFFICULT FIELD CONSTRUCTION PROCESS IN JAWORZNO, POLAND (LIFEPOPWAT PROJECT). [1:17:13](#) 7. Stanislava Vrchovecká, Tereza Sázavská, Klára Lísková, Pavel Hrabák. GROUNDWATER HCH INDICATION VIA PHYTOSCREENING OF TREES. [1:36:45](#) 8. P. Svermova, J. Buresova, P. Bardos, and M. Černík. ASSESSMENT OF SOCIO-ECONOMIC IMPACT FOR WETLAND+. [1:50:54](#) 9. Antoine Joubert, Petr Kvapil. PROTOCOLS OFFER TO THE CLIENTS FOR WETLAND+® REPLICATION. [2:08:52](#) Discussion.



Miroslav Černík



Jan Němeček



Martina Štrojsová.



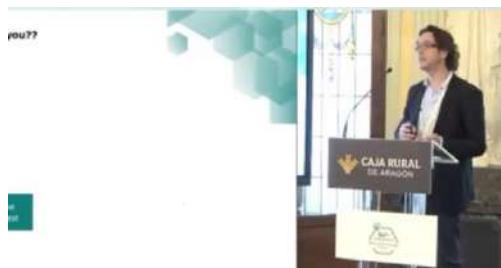
Carlos A. Arias



Beata Kończak



Pavel Hrabák



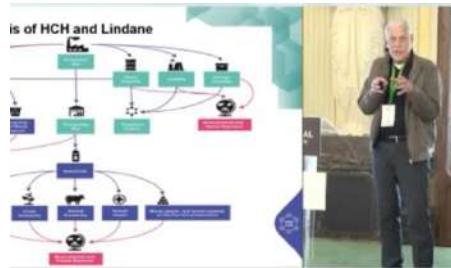
Antoine Joubert

## 5.9. Block 8. HCH in EU session (1h 56min)

English: <https://youtu.be/himFcdKLubA>

Spanish: [https://youtu.be/EJFBGqK\\_7WM](https://youtu.be/EJFBGqK_7WM)

0:00:00 Intro 0:01:07 1. Boudewijn Fokke. INTRODUCTION HCH IN EU PROJECT.  
0:14:49 2. Katja Amstaetter. INVENTORY RESULTS FOR GERMANY. 0:35:23 3. Guido van de Cotelet. THE GEOGRAPHIC INFORMATION MODEL. 0:59:21 4. Javier Sancho. ROAD MAP TO SUSTAINABLY MANAGE HCH CONTAMINATED SITES. 1:19:22 5. Boudewijn Fokke. GUIDELINES SC POP CONTAMINATED SITE MANAGEMENT. 1:29:30 6. John Vijgen. EU WIDE STRATEGY TO MANAGE HCH CONTAMINATED SITES. STATUS OF THE IMPLEMENTATION OF THE EU WIDE STRATEGY. 1:41:12 Discussion.



Boudewijn Fokke



Katja Amstaetter



Guido van de Cotelet



Javier Sancho



Boudewijn Fokke



John Vijgen

## 5.10. Block 9. HCH cases – Lindane network & others (2h 8min)

English: <https://youtu.be/ZH-GhvMECI8>

Spanish: <https://youtu.be/OiYZjSXANUw>

**0:00:00 Intro 0:01:33** 1. Cano, E., Sánchez, A., Camiño, J.M., Hanzal, Z., Trump, M., Gzyl, G., Neri, B. LINDANET: EUROPEAN NETWORK OF LINDANE WASTE AFFECTED REGIONS WORKING TOGETHER TOWARDS A GREENER ENVIRONMENT. **0:18:04** 2. Joao PM Torres, Yago de Souza, John Vijgen. HCH IN BRAZIL- SOCIALIZING CHEMICAL RISKS AND

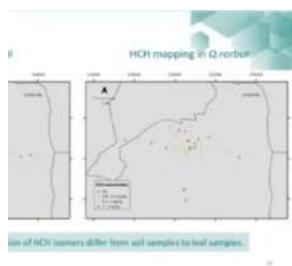
OTHERS. [0:26:39](#) 3. Chaos, Z., Celeiro, M., García-Jares, C., Monterroso, C. SPATIAL DISTRIBUTION OF HEXACHLOROCYCLOHEXANE ISOMERS IN OAK LEAVES AND TOPSOIL FROM O PORRÍÑO (NW SPAIN). [0:39:59](#) 4. Revuelto Palau, D., Fernández Cascán, J., Corujo Cristobal, J.M., Sainz Gutiérrez, R. CHARACTERIZATION AND MANAGEMENT OF LINDANE-CONTAINING WASTE AT AN ABANDONED LINDANE PRODUCTION FACILITY IN HUESCA PROVINCE (SPAIN). A SITE-SPECIFIC PROTOCOL DESIGN FOR WASTE CONDITIONING AND HANDLING FOR EX SITU FINAL TREATMENT. [0:55:03](#) 5. Martin Forter (ONLINE). THE EXAMPLE OF UGINE-KUHLMANN HUNIGUE/FRANCE: THE REMEDIATION OF NOVARTIS AND THE QUESTION: DOES THE FRENCH INVENTORY FULLY COVERS THE LINDANE WASTE OF THIS LINDANE FACTORY? [1:09:46](#) 6. Mickovski A., Andonova, S. REMOVAL OF TECHNICAL AND ECONOMIC BARRIERS TO INITIATING THE CLEAN-UP ACTIVITIES FOR ALPHA-HCH, BETA-HCH AND LINDANE CONTAMINATED SITES AT OHIS. [1:25:52](#) 7. I. Avramikos, G. Tsaimos, K. Prekas. REMOVAL OF TECHNICAL AND ECONOMIC BARRIERS TO INITIATING THE CLEAN-UP ACTIVITIES FOR ALPHA-HCH, BETA-HCH AND LINDANE CONTAMINATED SITES AT OHIS. [1:42:04](#) 8. Video: BEGINNING OF THE END - PROJECT FOR REMOVAL OF LINDANE FROM THE SMALL DEPOT IN OHIS. [1:49:58](#) Discussion.



Elena Cano



Joao Torres



Zoe Chaos



Roberto Sainz



life waste inventory and the Ugine-dane waste, Huningue (F)

Site with treated waste from the Ugine-dane waste (LUD) site:		
Waste type	Description	Quantity
Haz-Rhin	Excavation material from LUD site	0
Haz-Rhin	Overbuilding Phoenix	0
Haz-Rhin	Excavation material from LUD site	0
Haz-Rhin	Simon-pit	0
Total compensated with treated waste from the Ugine-dane waste (LUD) site:		0
Total treated:		0

Martin Forter

Monitoring program/system established in the location

b. The Contractor shall be responsible for developing and establishing a monitoring plan for:

- Monitoring of the performance of the treatment by sampling and analysis of treated soil and water samples;
- Monitoring of the environmental impact by the possible pollution during the remediation process i.e. controlling of the air emissions, liquid discharges, i.e. effluents, procedures, etc.
- Periodical (annual-quarterly) technical check up including a review of the results;
- Prior remediation monitoring, i.e. after the site has been remediated, there will be three tests for the validation of regulatory requirements and technical requirements from these tests for the validation.
- Monitoring emission at temporary storage before treatment.

The Contractor shall prepare one report for the remediation activities, namely, that the remediated site complies with the environmental standards for the site in the remediation action plan. For obtaining of the monitoring verification results, the Contractor shall engage accredited laboratories.

Aleksandar Mickovski



George Tsaimos

## 5.11. Block 10. Lifecycle management of pesticides and disposal in central Asia countries and Türkiye session (3h 59min)

English: <https://youtu.be/rayAvM8JtZU>

Spanish: <https://youtu.be/wCCBHKsofHY>

0:00:00 Intro 0:03:56 1. Tania Santivanez (ONLINE). Welcome and introduction to the session. 0:09:50 2. Mark Davis. ARE PESTICIDES OBSOLETE? 0:28:34 3. Panel Discussion: Javidan Guliyev (AZE), Mansur Oshurbayev (KAZ) (ONLINE), Tinatin Doolotkeldieva (KGZ), Umedjon Ulughov (TJK) (ONLINE). OVERALL CHALLENGES IN THE REGION ON OBSOLETE PESTICIDES AND PESTICIDE LIFE-CYCLE MANAGEMENT. 1:11:20 4. Tania Santivanez (ONLINE). OVERVIEW OF FAO WORK ON IMPROVING PESTICIDE LIFE-CYCLE MANAGEMENT FOCUS ON CENTRAL ASIA AND TÜRKIYE. 1:30:45 5. Tinatin Doolotkeldieva. IN SITU IMPLEMENTATION OF TRIALS ON MICROBIOLOGICAL REMEDIATION OF POPS CONTAMINATED SOILS IN KYRGYZSTAN (SUBM). 1:48:05 6. Assil Nurzhanova. PHYTOREMEDIATION OF POPS- CONTAMINATED SOILS: SOLUTIONS AND DEVELOPMENT PROSPECTS IN KAZAKHSTAN. 1:59:56 Q&A and discussion. 2:12:19 7. Umedjon Ulughov. (ONLINE) AWARENESS RAISING WORK IN MINI-LANDFILL

## AREAS IN TAJIKISTAN + PLANNING OF REMEDIATION OF VILLAGE #1 MINI-LANDFILL.

2:32:46 8. Alexander Efimkin (ONLINE). EMPTY PESTICIDES CONTAINER MANAGEMENT. 2:54:31 9. Alejandra Loayza (ONLINE), HIGHLY HAZARDOUS PESTICIDES ASSESSMENT. 3:10:57 10. Zsuzsanna Keresztes (ONLINE). REDUCTION OF PESTICIDES USE. 3:30:28 Q&A and discussion. 3:51:38 Conclusions and findings of the session, wrap-up.



Tania Santivanez



Mark Davis



Tinatin Doolotkeldieva



Javidan Guliyev



Mansur Oshurbayev



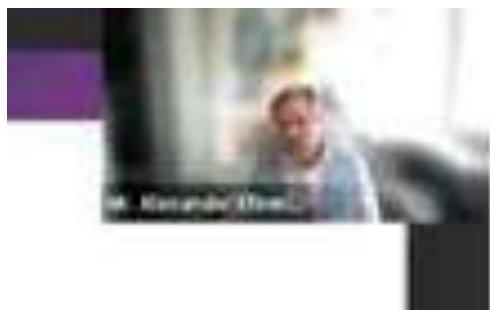
Umedjon Ulughov



Tania Santivanez



Tinatin Doolotkeldieva



Alexander Efimkin



Zsuzsanna Keresztes

## 5.12. Block 11. Toxicology. New approaches to testing of chemicals based on omics and epidemiology (2h 45min)

English: <https://youtu.be/SAmiTaHcqLQ>

Spanish: <https://youtu.be/w9c1Q39Kjm4>

**0:00:00** Intro First part: Exposure of wildlife and humans to chemicals **0:02:03** 1. John Vijgen. DEVELOPMENT OF APPROACHES TO REMOVE TOXIC SUBSTANCES FROM THE ENVIRONMENT. **0:18:38** 2. Pedro Cardoso. GLOBAL EFFECTS OF POLLUTANTS AND OTHER RISK FACTORS ON INVERTEBRATE FAUNA. **0:47:02** 3. Yago de Souza Guida (ONLINE), Joao PM Torres, Rodrigo Ornellas Meire. BRAZILIAN PEOPLE STILL UNDER INCREASED RISK OF CANCER DEVELOPMENT DUE TO HEXACHLOROCYCLOHEXANE INHALATION EXPOSURE. Second part: New approaches to testing of chemicals based on OMICS and epidemiology: Example developmental neurotoxicity **1:06:57** 4. Joelle Rüegg. CONCEPT: EPIDEMIOLOGY- AND OMICS- BASED DEVELOPMENT OF AN IN VITRO TEST BATTERY FOR DEVELOPMENTAL NEUROTOXICITY. **1:26:13** 5. Carl-Gustaf Bornehag. EPIDEMIOLOGY IN CHILDREN AS A BASIS FOR TEST DEVELOPMENT. **1:49:20** 6. Pim Leonards. ROLE OF METABOLOMICS IN TEST DEVELOPMENT AND

CONCLUSIONS. [2:03:40](#) 7. Walter Lichtensteiger. USE OF COMPARATIVE TRANSCRIPTOMICS FOR TEST DEVELOPMENT. [2:30:54](#) 8. Joelle Rüegg. CONTRIBUTION OF EPIGENETICS TO TEST DEVELOPMENT.



John Vijgen



Pedro Cardoso



Yago de Souza Guida



Joelle Rüegg



Carl-Gustaf Bornehag



Pim Leonards



Walter Lichtensteiger

### 5.13. Block 12. Emerging pollutants. PFAS session (4h 13min)

English: <https://www.youtube.com/watch?v=MCTyk-fO3k0>

Spanish: <https://www.youtube.com/watch?v=aGiJuRlg0xw>

- 00:00 Intro 00:38 1. Roland Weber. PFAS CONTAMINATED SITES – A PERSONAL JOURNEY AND SOE; LESSONS LEARNED. 24:56 2. Joerg Frauenstein. PFAS IN SOIL AND GROUNDWATER – PROGRESS AND COMPREHENSIVE CHALLENGES IN GERMANY. 56:18  
3. Frank Thomas Lange. INVESTIGATIVE SOIL AND WATER ANALYSIS AT AN OUTSTANDING LARGE-SCALE CONTAMINATED SITE: HOW NOVEL APPROACHES CAN HELP TO SOLVE THE PFAS PUZZLE. 1:21:22 4. Greet Schroeters. THE BELGIUM 3M CASE FROM A HEALTH PERSPECTIVE. 1:47:57 5. Johan Ceenaeme. PFAS POLICY FOR SOIL AND GROUNDWATER IN FLANDERS (BELGIUM). Discussion. 2:12:21 6. Mayor Paweł Silbert. JAWORZNO PERSPECTIVE 2:24:35 7. Xenia Trier. THE CRITICAL ROLE OF CHEMICAL REFERENCE STANDARDS IN THE RISK GOVERNANCE OF CHEMICALS 2:50:02  
8. Dietmar Müller Grabherr. FOREVER CHEMICALS” VS. “ONE HEALTH” – PFAS, A CALL TO RETHINK HOW WE MANAGE CONTAMINATED LAND! 3:11:27 9. Journalist Consortium. PFAS CONTAMINATION AND PRESUMPTIVE CONTAMINATED SITES IN EUROPE – WHAT NEED TO BE KNOWN BY THE PUBLIC AND GOVERNMENTS. 3:37:58  
10. Sergejus Ustinov. PER-AND POLY-FLUORALKYL SUBSTANCES (PFAS) AND THE GLOBAL DIMENSION OF SOIL POLLUTION 3:56:14 Summary and discussion



Roland Weber



Joerg Frauenstein



Frank Thomas Lange



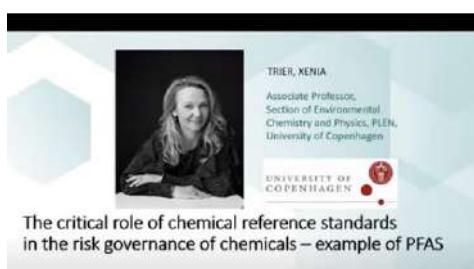
Greet Schroeters



Johan Ceenaeme



Mayor Paweł Silbert



Xenia Trier



Journalist Consortium



Sergejus Ustinov

## 5.14. Block 13. PCB Management (2h 17min)

English: [https://youtu.be/H2M7CDF83\\_o](https://youtu.be/H2M7CDF83_o)

Spanish: <https://youtu.be/DU-pVC4P9XA>

0:00:00 Intro 0:00:46 1. Dirk Jan Hoogendoorn. PCB PROJECTS IN EMERGING ECONOMIES: NEED FOR LOCAL TREATMENT, STOCKHOLM CONVENTION DEADLINE 2028, TRANSPORT AND EXPORT OBSTACLES. 0:15:02 2. Barbarasa, I., Plesca, V., Cupcea, L., Marduhaeva L. PCB MANAGEMENT AND ELIMINATION IN MOLDOVA. 0:30:22 3. M. Gil-Díaz, R. A. Pérez, J. Alonso, E. Miguel, S. Diez-Pascual, M. C. Lobo. NANOREMEDIALION OF A SOIL POLLUTED WITH PCBS AND CR. 0:42:13 4. Roland Weber. MONITORING DIOXINS AND PCBS IN EGGS AS SENSITIVE INDICATORS FOR ENVIRONMENTAL POLLUTION AND GLOBAL CONTAMINATED SITES AND RECOMMENDATIONS FOR REDUCING AND CONTROLLING RELEASES AND EXPOSURE. 1:02:30 5. Edgard Bilger. SODIUM TECHNOLOGY – THE CHOICE FOR TREATMENT OF PCB AND POP'S. 1:16:16 6. Frank Wauters. PCB DECONTAMINATION: AUTOCLAVE TECHNOLOGY. CASE STUDY: TREATMENT OF PCB CONTAMINATED TRANSFORMERS. 1:34:58 7. Egmont W Ottermann. THE SUB-SAHARAN CEMENT INDUSTRY POTENTIAL FOR THE DESTRUCTION OF POP'S, PCB AND OTHER HAZARDOUS CHEMICALS. 1:51:25 8. Ed Verhamme. CO-PROCESSING PCB & OTHER POP'S IN CEMENT KILNS A LOCAL SOLUTION. 2:15:41 Conclusion.



Dirk Jan Hoogendoorn



Barbarasa, I



M. Gil-Díaz



Roland Weber



Edgard Bilger



Frank Wauters



Egmont W Ottermann



Ed Verhamme

## 5.15. Block 14. Toxicology – Chemical exposure of wildlife and humans (1h 32min)

English: <https://youtu.be/CKemVI2d3n4>

Spanish: <https://youtu.be/rHmgik1LWGI>

0:00:00 Intro 0:01:18 1. Morcelle, S., Tirado, L. PESTICIDES AND WILDLIFE FRIENDLY FARMING. 0:16:32 2. Annamaria Iannetta; Monia Perugini; Michele Morena; William Gentile; Giovanni Angelozzi; Leonardo Della Salda; Marcella Massimini.

TOXICOLOGICAL EVALUATIONS OF GLYPHOSATE IN ZEBRAFISH EARLY-LIFE STAGES.

0:26:55 3. Ahmad Mahdavi. HIGHLY HAZARDOUS PESTICIDES (HHP) IN EU COMPARED TO DEVELOPING COUNTRIES, CASE STUDY: HHP HISTORY AND USE IN IRAN. 0:43:57 4.

Minacori Marco, Natali Pier Giorgio, Paglia Giuliano, Fiorini Sara, Altieri Fabio, Eufemi Margherita. TOMATO AND OLIVE MICRONUTRIENTS AS “HUMAN BODY REMEDIATION” IN PEOPLE LIVING IN CONTAMINATED AREAS: FOCUS ON B-HEXACHLOROCYCLOHEXANE. 0:59:46 5. Toichuev, R (ONLINE), Toichueva, A., Zhilova, L., Paizildaev, T. (Online in English in Kyrgyzstan). THE USE OF THERAPEUTIC AGENTS DERIVED FROM THE PLANTS AND FRUITS GROWING IN KYRGYZSTAN FOR THE

ELIMINATION OF ORGANOCHLORINE PESTICIDES FROM GASTROINTESTINAL TRACT OF NURSING WOMEN. 1:11:40 6. Paizildaev, T. (Online in English in Kyrgyzstan), Zhilova, L., Toichuev, R. (ONLINE), Sakibaev, K., Toichueva, A., Mamasharipov, K. OUR EXPERIENCE OF APPLYING THE RESULTS OF RESEARCH AND EVIDENCE-BASED MEDICINE FOR IMPROVING THE AWARENESS, ACHIEVING COMPLIANCE WITH SAFETY MEASURES AND IMPLEMENTING RECOMMENDATIONS BY THE POPULATION LIVING IN THE AREAS POLLUTED BY ORGANOCHLORINE PESTICIDES. 1:27:34 Conclusion.



Sofia Morcelle



Annamaria Iannetta



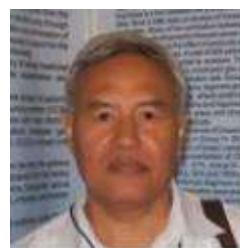
Ahmad Mahdavi



Minacori Marco



R.Tovichuev



Paizildaev, T.

## 5.16. Closure session (24min 37s)

English: <https://youtu.be/KINhuGUNrFM>

Spanish: <https://youtu.be/Szgwqy4wkWk>

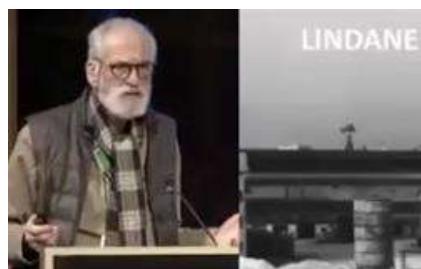
**0:00** Intro **1:43** Mrs. Elena Cano, Head of the Contaminated Soils Service (Government of Aragon) **7:55** Mrs. Maria Victoria Esteruelas, Aragones Society of Agri-Environmental Management (SARGA) / Vicente Ros, Responsible for Climate Change and Circular Economy Control Union **9:30** D. John Vijgen, International Association of HCH and Pesticides (IHPA) **13:39** Mr. Bram, Borst Chair of the Board (IHPA) **18:46** Mr. Carlos Gamarra, Managing Director Climate Change and Environmental Education (Government of Aragon)



Elena Cano



Maria Victoria Esteruelas



John Vijgen



Bram, Borst



Carlos Gamarra