

CANO, ELENA

Head of the Service of Contaminated Soils

Government of Aragon



Departamento de Agricultura, Ganadería y Medio Ambiente



LINDANET: EUROPEAN NETWORK OF LINDANE WASTE AFFECTED REGIONS WORKING TOGETHER TOWARDS A GREENER ENVIRONMENT

Cano, E., Sánchez, A., Camiño, J.M., Hanzal, Z., Trump, M., Gzyl, G., Neri, B.

















LINDANET project





Promoted by the Government of Aragon to join efforts among European regions to progress on the solution of the lindane pollution problem



LINDANET goals:

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To create a **network** of European regions affected by the HCH and lindane contamination



To improve the public policies related to HCH pollution by:









Project partners



- Lindane factory (1951-1982)
- •3 landfills. Total 88.000 Tm HCH
 - •River discharges up to 1982

Pollution of river floodplain



SACHSEN-ANHALT

Landesanstalt für Altlastenfreistellung

•ZELTIA Factory (1947 – 1964)

•Safety cell: 140.000m³ polluted soils

Scattered sources (construction fills)





•Inquinosa factory (1975-1989)

•Sardas and Bailin landfills (solid HCH = 60.000 t / landfill)

Identified and localised sources

•Lindane factory (1965-82)

•1 landfill ~ 100.000 Tm HCH

•~ 100.000 Tm around factory

Unsolved allocation of responsibilities



•Storehouses COPs pesticides

Agricultural use



Istituto Zooprofilattico Sperimentale del Lazio e della Toscana M. Aleandri

Research Institute

•Lindane Factory (1950 – 1980)

•Polluted soils: 60.000 m³ confined, 160.000 m³ unconfined

Agriculture use restricted



Main features







85% financed by





from 1 Aug 2019 to 31 Jan 2023



Environment and resource efficiency



Project phases





Phase 1:

Interregional learning and exploitation of the lessons:

Design and elaboration of action plans

Ouration: 5 semesters ► 1 Aug 2019 - 31 Jan 2022



Phase 2:

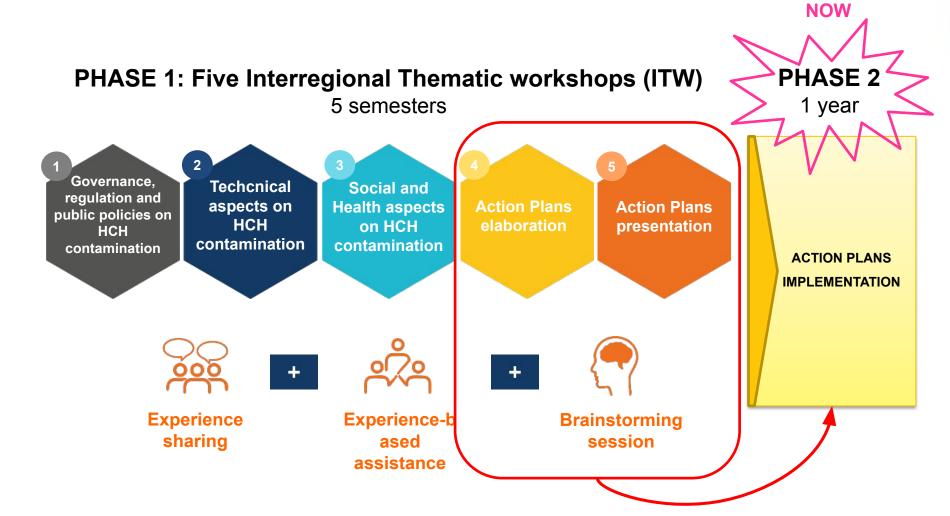
Implementation and monitoring of regional action plans

Ouration: 1 year ► 1 Feb 2022 - 31 Jan 2023



Project phases

Interregional learning and action plans implementation





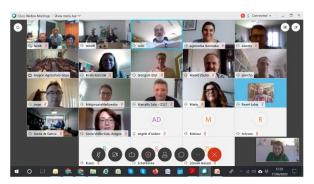
Partner meetings



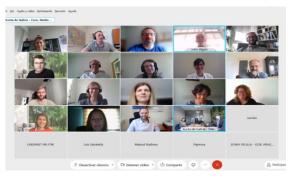


















Partner meetings

Interchange of experiences



LUNCH TIME HOME WORK 25/11: KINDLY, FILL IN YOUR REGIONS PERSPECTIVE SWOT ANALYSIS (FOR DISCUSSION AT MEETING)

Strengths

- · Legislation & enforcement
- Clear governance, including institutional set-up, long term funding
- · Bilateral communication channels with stakeholders
- · Transparency and active publicity for citizens
- · Stakeholder engagement
- · Capacity & experience to implement monitoring and remediation actions
- Long term strategic plans approved and endorsed politically

Weaknesses

Long-term funding, including EU funding for HCH cases

Opportunities

- R&D technology development, collaboration with universities & research centres
- Continuous knowledge update and field trials on state-of-the-art technologies.
- New possibilities of FU collaboration in R+D+i or pilot/demonstrative projects due to LINDANET network and HCHinEU
- · Cooperation among Regions to push for EU funding

Threats

- · Insufficient Regional/National funding because of magnitude of problem
- EU policy against soil contamination is declining, giving way to other new environmental policies
- Less and less funds for soil contamination in EU funding programmes









Stakeholder meetings





Each region shares the experiences interchanged in the partner workshops (ITW) with the regional stakeholders





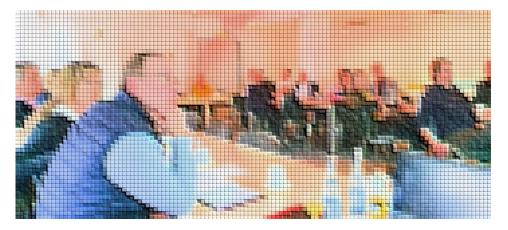
Stakeholder meetings













Results: Good Practices

PROJECT GOOD PRACTICES:



SACHSEN-ANHALT. **GERMANY**

Soil Management Concept Bitterfeld megasite

TRANSPARENCY/ **GOVERNANCE**



SACHSEN-ANHALT. **GERMANY**

Exemption of the reliability of contaminated sites caused by state owned industries during the existence of the German Democratic

TRANSPARENCY/ **GOVERNANCE**



SLASKIE. POLAND

AMIIGA Interreg CE pilot Permeable Reactive Barrier for groundwater in situ passive HCH treatment

> **TECHNICAL PROJECT**



LAZIO. ITALY

Regional monitoring plan on residues of B-HCH in animal feed and milk

MONITORING



LAZIO. ITALY

Human Biomonitoring of the exposure of population to chemical contaminants

MONITORING



ARAGÓN. SPAIN

Visits to the lindane contaminated sites and remediation facilities for the general

TRANSPARENCY/ **GOVERNANCE**



ARAGÓN, SPAIN

Demonstrative project to analyse the feasibility of ISCO technique in dissol-ved POPs

> **TECHNICAL PROJECT**



ARAGÓN, SPAIN

Publication of daily water analytics of the river Gallego in www.stoplindano

TRANSPARENCY/ GOVERNANCE



ARAGÓN. SPAIN

HCH air monitoring in Aragon sites



ARAGÓN. SPAIN

Committees for the monitoring of the lindane waste management

TRANSPARENCY/



MONITORING

GOVERNANCE



ARAGÓN, SPAIN

Bioremediation of HCH using autochthonous bacteria

> **TECHNICAL PROJECT**



ARAGÓN.

Strategic Environmental Action Plan against lindane waste contamination in Aragon

TRANSPARENCY/ **GOVERNANCE**



SOUTH BOHEMIA. CZECH REPUBLIC

Phytoscreening of HCH contamination by broad-leaf trees

TECHNICAL PROJECT



SOUTH BOHEMIA CZECH REPUBLIC

Elimination of HCH and its products from drain water by PRB on ZVI

> **TECHNICAL PROJECT**



SOUTH BOHEMIA, CZECH REPUBLIC

Use of non-combustion technology for remediation of obsolete pesticides

> **TECHNICAL PROJECT**









Results: Action Plans



REGION

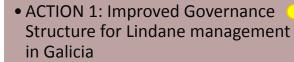
GALICIA

FOR THE

ACTION PLAN



- Benefits: increasing the number of projects and improving communication channels
- ACTION 2: Study of the forest mass of the former Bailín landfill site
 - Benefits: Minimize forest risk in the site
- ACTION 3: Health and safety application, for automatic control 🦪 PPE and health surveillance
 - Benefits: Improvement of H&S management of >40 workers and 200 external people
- ACTION 4: Creation of a documentary collection on HCH, to be hosted in the Pirenarium's "POPs" Reference Centre"
 - · Benefits: optimize personnel resources



- · Benefits: Efficient coordination, development of future initiatives
- ACTION 2: Transparency policy on the communication of lindane polluted spots and their risks
 - · Benefits: Creation of a new communication strategy, not available before
- ACTION 3: Early warning and action protocol in cases of lindane waste detection.
 - · Benefits: enable identification of affected areas, clarify responsibilities, useful for monitoring, control and remediation projects
- ACTION 4: Periodic monitoring of the security cell of Torneiros.
 - Benefits: Anticipation of effects of potential impacts on environment



SOUTH BOHEMIAN REGION

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ACTION PLAN FOR



- ACTION 1: Increasing capacity and professional knowledge of involved staff
 - Benefits: Positive impact on how hazardous HCH substances are dealt with in case of their discovery in the environment
- ACTION 2: Treatment and remediation methodology for POF contamination
 - · Benefits: up-to-date methodology about lindane and HCH and remediation



SAXONY-ANHALT REGION

ACTION PLAN FOR THE

Action Plans







- ACTION 1: Next Steps on the way to an integral Mulde Floodplain management
- · Benefits: Building the basis and guidelines for the future Mulde Floodplain Management
- ACTION 2: Establishment of 3 committees for ensuring long-term goal: The joint development of an integral Mulde Floodplain Mgmnt
 - · Benefits: Cooperation among stakeholders and decision makers for a common and efficient development of the integral floodplain management
- **ACTION 3:** Preparation of a technical report on the Lindane heritage of the BitterfeldWolfen region
 - Benefits: Establish a pooled knowledge on the lindane legacy in the Bitterfeld-Wolfen region, not available before

GiG

REGION

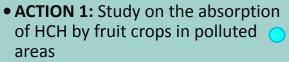
ŚLĄSKIE VOIVODESHIP

ACTION PLAN FOR THE

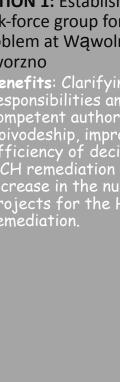
- **ACTION 1:** Establishing the regional task-force group for solving the HCH problem at Wawolnica Valley in Jaworzno
- · Benefits: Clarifying the responsibilities among the competent authorities in Silesian Voivodeship, improvement of the efficiency of decision-making on HCH remediation actions, and increase in the number of national projects for the HCH control and remediation.



ACTION PLAN FOR THE LAZIO REGION



Benefits: Providing data to promote a selective cultivation throughout sources







Overall Project Results



1 WEBINAR

ARTICLE 1 general article HCH conditions and the state of the art

1 BOOKLET

JOINT STUDIES

ACTION PLAN

NEWSLETTER

INTERNATIONAL THEMATIC WORKSOP

STUDY VISITS

GOOD PRACTICES

POLICY LEARNING EVENTS

117 PEOPLE WITH INCREASED PROFESSIONAL CAPACITY





ecano@aragon.es

https://descontaminacionlindano.aragon.es

https://projects2014-2020.interregeurope.eu/lindanet/

Gobierno de Aragón



