FUNDING & SUPPORT FOR KICK-START ENVIRONMENTAL CRIMES

OPPORTUNITY OPENS: SEPTEMBER 2ND 2019

OPPORTUNITY CLOSES: JANUARY 24TH 2020

JOIN OUR WEBINAR
ENVIRONMENTAL CRIMES
AUGUST 21ST 2019 15:00 (CEST)

ENVIRONMENTAL CRimes
FUNDING UP TO €60K PER ACTIVITY

Liz Barrow - Liz.Barrow@esa.int
Welcome to the Environmental Crimes webinar!

Before we start...

• Due to the number of attendees, please keep your microphones muted at all times and switch off the webcam function.

• You can use the conversation function anytime to submit your questions. They will be addressed during the Q&A at the end of the webinar.
Welcome to the Environmental Crimes webinar!

Before we start…

- Due to the number of attendees, please keep your microphones muted at all times and switch off the webcam function.
- You can use the conversation function anytime to submit your questions. They will be addressed during the Q&A at the end of the webinar.

Welcome to the Environmental Crimes webinar!
Environmental Crimes

WEBINAR AGENDA

• Introduction
  • What ESA offers

• Space for Environmental Crimes

• INTERPOL Environmental Crimes Projects

• Legambiente Pollution Use Cases

• Kick-start Activity essentials
  • Introduction to a Kick-start Activity
  • How to Apply

• Q&A
Can you leverage Space technology and data for the benefit of life on Earth?
We'll work together to make your idea commercially viable, with:

- Zero-Equity Funding (€60k-€2M+)
- Tailored Project Management Support
- Access to Our Network & Partners
- Use of the ESA Brand for Credibility
The European Space Agency is offering **technical support** and **funding** to companies developing innovative and **commercial services** that use **space technology** to combat **environmental crimes**.

To find out more: [https://business.esa.int/funding/invitation-to-tender/environmental-crimes](https://business.esa.int/funding/invitation-to-tender/environmental-crimes)
Environmental crime is the fourth largest criminal enterprise in the world and includes:

i) Crimes Impacting Environmental Quality
   - Illegal land pollution - illegal waste dumping, waste burning and waste exporting
   - Water-related crimes like water fraud, illicit water contamination and water theft
   - Manipulation of carbon credits, and illegal emissions of hazardous gases.

ii) Crimes Affecting Wildlife
   - Poaching and the unlawful trade of flora and fauna

iii) Crimes Damaging Natural Resources
   - Illegal logging and charcoal trafficking
   - Illegal, unreported and unregulated (IUU) fishing
   - Illegal mining
THE POWER OF SPACE TO STOP ENVIRONMENTAL CRIMES

Satellite Navigation

GNSS can geo-tag data e.g. tracking wildlife via collars or tags and tracing goods like lorries carrying legitimate timber or fish stocks across the value chain.

Satellite navigation can track the movements of ships and vehicles to detect if anything illicit is occurring.

Earth Observation

EO satellites can provide images of hot spots where border crossings peak, as well as new roads, tracks and massed vehicles alluding to illicit smuggling or illegal trade.

EO data can monitor air quality and water quality and can detect precise changes on land (deforestation, new activity in a ‘closed’ mine, illegal waste dumping).

Earth Observation data can support mapping in the forestry sector and could support companies in obtaining certificates and carbon credits.

Satellite Communication

Satcom can provide data, video and voice communications connecting border patrol vehicles. This enables widely scattered forces to share information and images, and to operate as a single unit.

In remote areas, and where terrestrial networks are insufficient e.g. ships, mining sites, forests, satellite communications can provide secure connectivity.

Drones are also active in border patrols and, when flown via satellite by remote operators, they can capture images and videos from the field, effectively extending the reach of border control agencies for thousands of miles.

Drones can also help with mapping forests, land and coastal regions.
ENVIRONMENTAL CRIME PROJECTS FROM INTERPOL

INTERPOL Guest Speaker: Davyth Stewart
d.stewart@interpol.int
A GLOBAL STRUCTURE

INTERPOL
INTERPOL’S CRIME PROGRAMMES

We provide a range of policing expertise and capabilities to our member countries, supporting three main crime programmes:

COUNTER-TERRORISM
Assisting member countries to prevent and disrupt terrorist activities through the identification of individuals, networks and affiliates.

ORGANIZED AND EMERGING CRIME
Targeting and disrupting international criminal networks; identifying, analysing and responding to criminal threats.

CYBERCRIME
Making cyberspace safe for all by supporting member countries to prevent and investigate cyberattacks.
PROJECT EDEN

An INTERPOL initiative to detect and counter the illegal international trade and disposal of waste

www.interpol.int
Focus of the Pollution Crime Unit

Identify and disrupt all criminal activity within the waste industry
Operation 30 Days of Action
WASTE TYPES DETECTED ON ILLEGAL WASTE SITES

- Waste related to the car industry
- Biological and chemical waste
- Plastic waste
- Oil waste
- Mix materials
- Metal waste
- E-waste
- Household waste
- Construction waste

WASTE TYPES DETECTED ON ILLEGAL WASTE SHIPMENTS

- Waste related to the car industry
- Biological and chemical waste
- Construction waste
- Plastic waste
- Paper waste
- Oil waste
- Mix materials
- Metal waste
- Glass waste
- Household waste
- E-waste
During INTERPOL Operation 30 Days of Action in June 2017, an estimated 55,000 tonnes of plastic waste involved in illicit waste activities was detected, the equivalent of 50 BILLION PLASTIC BAGS.
Waste Trafficking Routes
Criminal Violations detected during Operation 30 Days of Action

Sub-regions involved in transnational waste trafficking:
- With intraregional trafficking uncovered
- Without intraregional trafficking uncovered

Inter-regional routes involved in waste trafficking:
- non-hazardous waste involved only
- hazardous waste involved

Legend:
- < 4 cases uncovered
- 4-15 cases uncovered
- > 15 cases uncovered
Monthly exports of plastic waste from the European Union to countries outside the bloc in 2017, in kilotons:

In descending order, these countries are Switzerland, Thailand, Taiwan, United States, Pakistan, Indonesia, Bosnia and Herzegovina, Ukraine and Serbia. 1 kiloton = 1,000 tons, or 1,000,000 kilos.
Majority of waste is unregulated/unreported

Electronic waste sourced in Europe
- 35% officially recorded within the collection and recycling systems
- 65% was either
  - Exported
  - recycled under non-compliant conditions
  - scavenged for valuable parts
  - thrown away in waste bins

Plastic Waste
- Only 9% of all plastic ever produced is recycled. 12% is incinerated.
OPERATION 30 DAYS AT SEA
TACKLING MARITIME POLLUTION CRIME

KEY RESULTS
WWW.INTERPOL.INT
The first global law enforcement operation countering marine pollution crime

A Global Enforcement Network:

- 58 participating countries worldwide
- 122 National Operational Coordinators
- 276 law enforcement and environmental agencies

58 Participating Countries

**AMERICAS (8):** Argentina, Canada, Chile, Colombia, Peru, St. Vincent & Grenadines, United States of America (USA), Uruguay

**AFRICA (14):** Angola, Burkina Faso, Cameroon, Congo, Democratic Republic of Congo, Ghana, Kenya, Mali, Namibia, Niger, Nigeria, South Africa, Senegal, Sudan

**MIDDLE EAST (3):** Lebanon, Jordan, Qatar

**EUROPE (22):** Albania, Belgium, Bosnia and Herzegovina, Bulgaria, Denmark, Finland, France, Germany, Greece, Ireland, Israel, Italy, Latvia, Moldova, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Ukraine, United Kingdom

**ASIA – PACIFIC (11):** Bangladesh, Fiji, Indonesia, Japan, Korea, Philippines, Singapore, Thailand, Turkmenistan, Vietnam
Contamination was contained following several incidents and violations.
KEY OPERATIONAL RESULTS

• 15,446 inspections conducted
• 1507 marine pollution offences detected
• 701 investigations opened
• 202 vessels and 76 companies reported

Every 1 out of 10 inspections revealed a marine pollution offence
Detected Pollutions from Vessels

**REGIONAL PATTERNS:**

**Oil Pollution**
- 64%

**Garbage Discharge**
- 14%

**Sewage Discharge**
- 7%

**Record Violations**
- 6%

**Waste Mismanagement**
- 4%

**Sources of Air Pollution**
- 4%

**Other**
- 4%

**Important across all regions**
- From 82% of all North American cases, to 15% of all African cases.

**Important in all regions with economies in transition**
- 25% of cases in Africa; 35% in Asia-Pacific; 30% in Latin America (less than 12% in Europe and North America)

**Important in Africa and Europe**
- Nearly 20% in Africa and Europe; while less than 5% of cases detected in other regions

*Other (4%) include Discharges of Noxious Liquid Substance; Discharges of Ballast water; and Shipbreaking.*
12 different types of vessels reported as offending:

- **widespread incidence of marine pollution crime across the shipping industry**

Particularly prone to violations:

- **Cargo ships**
  - 33% of reported vessels
  - Tendency for records violations, and negligence

- **Bulk carriers**
  - 20% of reported vessels
  - Tendency for discharges of ballast water

- **Oil and chemical tankers**
  - 12% of reported vessels
  - (no specific tendency identified)

- **Fishing vessels**
  - 12% of reported vessels
  - Tendency for oil pollution
Investigative techniques

**Aerial Surveillance** (Fixed-wing aircraft and Helicopters)

- Aerial picture taken by French authorities to assess the oil pollution resulting from a ship collision in Cap Corse, France.
- Hamburg Polizei used Helicopters to take samples at the location of an oil discharge at sea.

**On-water patrols**

- Qatari Coast Guards deployed high visibility patrols to deter marine pollution crime and ensure stricter compliance.
Innovative investigative techniques

**Drones**
- Use of a Drone for Port Inspections in Nigeria

**Satellite Imagery** including EMSA
- Cleanseanet Satellite System

Mapping of oil pollution incidents detected in Pakistan during the Operation, generated from satellite imagery

**Vessels Tracking System**, including:
- Automatic identification system (AIS)
- Software and Applications

- Drones, incl. with Sulphur sensors and Mapping software
- Side Looking Airborne Radar (SLAR)
- Electro-optical Infrared Cameras (EO/IR)
- Infrared/Ultraviolet Line Scanner (IR/UV)

Map of vessels identified in Angola waters, used by authorities to monitor vessels positions and itineraries, and detect risk indicators
Concluding remarks

- The volume of waste being generated globally is growing exponentially.

- The disposal system is highly dependent on exports because of a lack of appropriate domestic recycling facilities.

- INTERPOL has observed obvious criminality across the waste industry that meets the criteria of organised crime.

- The nature of the criminal activity includes smuggling of waste, document fraud, money laundering, tax evasion, and falsification of records.
Concluding remarks

- Technology can play an important role in helping track waste and guarantee the integrity of the supply chain of waste from collection, storage, recycling and disposal.

- Technology can also be used to increase the capacity of law enforcement to conduct surveillance to identify illegal discharge of waste.
REAL LIFE SCENARIOS FROM LEGAMBIENTE

Legambiente Contribution from Nino Morabito
a.morabito@legambiente.it
Legambiente is one of the most prominent and widespread environmental association in Italy with over 115,000 members.

### KEY MISSION

- Scientific environmentalism to build policies and to advocate change towards local, national and international stakeholders and institutions
- To engage communities, stakeholders and people and enable them be the leading actors of change
- To drive the economy towards new models of green and circular economy
- To improve the quality of life for everyone (environmentally and socially)

### TOP ISSUES

- Climate change
- Renewable energy
- Biodiversity protection
- Marine litter
- Circular economy
- Environmental and social justice
- Volunteering
- Education
- Air, water and soil pollution
AIR POLLUTION USE CASES

Example 1

• Only in Italy, over the last three years, more than 300 waste depositories were set ablaze.

• **Illegal act:** open fires of uncollected waste, stacked in storehouses or left in illegal landfills.

• **Challenge:** urgently monitoring and detecting illegal acts (who sets fire) and evaluating the quantity of toxic and/or climate altering substances released in the atmosphere by fumes from each fire.

Example 2

• In Italy 31% of instructions given by National System of Environmental Protection (SNPA) concerned irregular atmospheric emissions.

• **Illegal act:** atmospheric emissions from industrial installations breach regulations and concentration limits of toxic air pollutants and/or dust reduction of fumes.

• **Challenge:** urgently monitoring and detecting, on a case by case basis, the presence of impermissible emissions and evaluating the composition of each single irregular emission.
Example 1

- In Italy in 2018 alone, over 21 tonnes of sewage-contaminated sludge were unlawfully disposed of.
- **Illegal act:** open fires of uncollected waste, stacked in storehouses or left in illegal landfills.
- **Challenge:** monitoring and detecting the spread of polluting substances as a result of illegal acts and measuring changes of agricultural and/or urbanized soil composition.

Example 2

- illegal buildings, especially in high hydrogeological risk areas, increase fragility and are a common precondition for natural disasters (flood, landslides, mudslides, coastal erosion)
- **Illegal act:** each year in Italy it is estimated that about 17-18 thousand unauthorised buildings are built.
- **Challenge:** monitoring and detecting unauthorised buildings and/or extensions, especially in high hydrogeological risk areas, in areas of environmental value, or in inaccessible, hard-to-reach areas.
Example 1

• According to London Lloyd's shipping accidents archive, about 80 old ships, or “rust buckets”, were wilfully sunk in the Mediterranean.

• **Illegal act:** One of the big issues of illegal waste disposal is the sinking of “rust buckets” that containing hazardous or radioactive waste.

• **Challenge:** identifying and evaluating the “content” of sunken ships without having to bring them to the surface.
Example 2

- in Italy, CNR and University of Rome “La Sapienza” researchers discovered an immense landfill at a depth of 600 meters in the Straits of Messina. Most recently, some containers fully loaded with toxic substances were found off the Elba island.

- **Illegal act:** dumping at sea of containers fully loaded with waste (containers, drums, etc) by vessels.

- **Challenge:** urgently monitoring and detecting each single case of dumping at sea of containers and chance to promptly recover discharged containers
Example 3

• 12% of instructions given by National System of Environmental Protection (SNPA) concerned illegal wastewater discharges.

• **Illegal act**: illegal wastewater discharges, especially from production units or illegal buildings, undermining water bodies, such as lakes, rivers and streams.

• **Challenge**: Monitoring and detecting the active presence of illegal discharges and/or malfunction of water treatments plants.
ENVIRONMENTAL CRIMES KICKSTART: HOW TO APPLY
Environmental Crimes Kickstart

6 months duration
Up to €60K ESA funding (75% ESA co-funding)

Develop business case for commercially viable services

• Customer Engagement
• Technical Feasibility Assessment
• Commercial Viability Assessment
Environmental Crimes

Kickstart Timings

There are 3 Environmental Crime Themes. Each theme has a different proposal submission deadline.

1. Environmental Quality: 2 Sep – 11 Oct 19


3. Natural Resources: 2 Dec – 24 Jan 19
WHO CAN APPLY?

- The Thematic Calls for Kick-start Activities are open to any company or organisation in participating Member States (Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland and the United Kingdom).

- Kick-start activities resulting from Thematic Calls are funded at 75% by the Agency for a maximum amount of 60,000 Euro per activity.

- The Thematic Calls for Kick-Start Activities follow a competitive tendering procedure. The evaluation criteria are published in the cover letter of the Call for Proposals.
HOW TO APPLY 1/2

1. **Register** by completing online questionnaire on ESA-STAR Registration (minimum ‘light registration’) (https://esastar-emr.sso.esa.int)

2. **Download** the official tender documentation from ESA EMITS from 2nd September 2019. http://emits.sso.esa.int

3. **Create** ‘Bidder Restricted Area’ in ESA-STAR

4. **Write your proposal** and obtain Letter of Authorization from your National Delegation. Contact information can be found at: https://business.esa.int/national-delegations.

5. **Submit** your proposal via ‘Bidder Restricted Area’ in ESA-STAR Tendering before the deadline.

Proposal submission deadlines.

Environmental Quality: 2 Sep – 11 Oct 19

Poaching and Trafficking: 14 Oct – 30 Nov 19

Natural Resources: 2 Dec – 24 Jan 19

Any issues with ESA STAR contact esait.service.desk@esa.int.
The Letter of Invitation to Call for Proposals is issued on EMITS (http://emits.sso.esa.int/emits/owa/emits.main) and includes:

• **Cover letter**

• **Appendix 1:**
  List of Thematic Calls for Ideas (including the calendar of the Thematic Call for Ideas and specific information on the themes)

• **Appendix 2:**
  Draft Contract

• **Appendix 3:**
  Tendering Conditions for Express Procurement Procedure - EXPRO/TC

• **Appendix 4:**
  Proposal Template
Your Proposal shall include the following information:

1) Executive Summary (max 1 page)
2) Business Potential (max 5 pages)
3) Technical Concept (max 5 pages)
4) Team and Resources (max 3 pages)
5) Management (max 4 pages)
6) Financials (max 2 pages)
Kick-Start Activity

Study Tasks

WP1000: User/customer engagement

WP2000: Technical Feasibility

WP3000: Economic Viability

Service Requirements
Service and system Architecture definition
Business Plan
THANK YOU FOR PARTICIPATING