\rightarrow funding & support for KICK-START environmental crimes



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

→ ENVIRONMENTAL CRIMES FUNDING UP TO €60K PER ACTIVITY

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business applications

esa



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





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





WHAT ESA OFFERS

We'll work together to make your idea commercially viable, with:



Opportunity

- 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: <u>https://business.esa.int/funding/invitation-</u> <u>to-tender/enviromental-crimes</u>



Background

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

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

Satellite

Navigation

Earth

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

194 MEMBER COUNTRIES CONNECTED THOUGH A SECURE NETWORK



A GLOBAL STRUCTURE





INTERPOL'S CRIME PROGRAMMES



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

COUNTER-TERRORISM

ORGANIZED AND EMERGING CRIME

CYBERCRIME

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

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Targeting and disrupting international criminal networks; identifying, analysing and responding to criminal threats.

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

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ENVIRONMENTAL SECURITY SUB-DIRECTORATE

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







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





2017, in kilotons: 163 kt China Vietnam Malaysia Hong Kong 12 kt Turkey India Others * JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV

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



OPERATION 30 DAYS AT SEA, Phase I

October 2018

OPERATION 30 DAYS AT SEA TACKLING MARINE POLLUTION CRIME

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





Immediate impact

Contamination was contained following several incidents and violations

FRANCE







SENEGAL

PAKISTAN







LATVIA

ALBANIA

SPAIN

TIMOR LESTE



KEY OPERATIONAL RESULTS

OPERATION 30 DAYS AT SEA

TACKLING MARINE POLLUTION CRIME



 202 vessels and 76 companies reported

detected

Every 1 out of 10 inspections revealed a marine pollution offence



Detected Pollutions from Vessels



*Other (4%) include Discharges of Noxious Liquid Substance ; Discharges of Ballast water ; and Shipbreaking.



Vessels of interest

→ 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





Fishing vessels 12% of reported vessels Tendency for oil pollution



Investigative techniques

OPERATION 30 DAYS AT SEA TACKLING MARINE POLLUTION CRIME

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



Vessels Tracking System, including:

- Automatic identification system (AIS)
- Software and Applications



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

- 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)



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



Davyth STEWART d.stewart@interpol.int







→ REAL LIFE SCENARIOS FROM LEGAMBIENTE

Legambiente Contribution from Nino Morabito a.morabito@legambiente.it



→ LEGAMBIENTE

• Legambiente is one of the most prominent and widespread environmental association in Italy with over 115,000 members.



- 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.

- 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 European Space Agency
 emissions and evaluating the composition of each single irregular emission.



→ LAND POLLUTION USE CASES

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.

- 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.



→ WATER POLLUTION USE CASES

- 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.



→ WATER POLLUTION USE CASES

- 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



→ WATER POLLUTION USE CASES

- 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



Kickstart Timings

There are 3 Environmental Crime Themes.

Each theme has a different proposal submission deadline.

- 1. Environmental Quality: 2 Sep 11 Oct 19
- 2. Poaching and Trafficking: 14 Oct 30 Nov 19
- 3. Natural Resources: 2 Dec 24 Jan 19





- 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.

\rightarrow HOW TO APPLY 1/2

- Register by completing online questionnaire on <u>ESA-STAR</u> <u>Registration</u> (minimum 'light registration') (https://esastar-emr.sso.esa.int)
- 2. Download the official tender documentation from ESA EMITS from 2nd September 2019. <u>http://emits.sso.esa.int</u>
- 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.

Any issues with ESA STAR contact <u>esait.service.desk@esa.int</u>.



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



\rightarrow HOW TO APPLY 2/2

The Letter of Invitation to Call for Proposals is issued on EMITS (<u>http://emits.sso.esa.int/emits/owa/emits.main</u>) 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



→ THE 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





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→ THANK YOU FOR PARTICIPATING

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