

# SWIM and Horizon 2020 Support Mechanism

Working for a Sustainable Mediterranean, Caring for our Future

**Title: Training Monitoring of non-point source pollution**

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# Session 2.2 Network design: determinants

Millions of substances produced and registered. How to choose?

Common groups

- < 70 General determinants: oxygen and nutrient cycle
- > '80 Metals:
- > '80 PAH (polycyclic aromatic hydrocarbons)
- > '80 PCBs , organochlorine pesticides
- > '90 Flame retardants, other pesticides

Common practice  
in most laboratories

New (> 2005/10)

- > pharmaceuticals & veterinary products
- > new pesticides
- > microplastics
- > nanomaterials
- > emerging (industrial) substances

Depending on laboratory

# Session 2.2 Network design: determinants

<b>pressure/land use</b>	<b>sources/routes</b>	<b>parameters</b>	<b>indicators</b>
(sub)urban area	roads run off	heavy metals	metals
	air pollution	PAH, N, S	PAK
	domestic waste water (not connected)	COD, BOD, N, P E.coli pharmaceuticals care products	BOD E.coli
	storm water overflows	COD, BOD, N, P pharmaceuticals care products	BOD
agricultural area	manure/fertilizer run off and leaching	nutrients	NO <sub>3</sub> , NH <sub>4</sub> , t-P
	drift/spraying/ runoff and leaching	pesticides, herbicides vetinary pharmaceuticals	dedicated selection of substances
	erosion	suspended solids	TSS visibility (secchi)
industrial area	runoff of industrial areas	variety of unkown micropollutants	COD, effect based (toxicity) monitoring

Indicators = absolute minimum in order to get knowledge on diffuse pollution sources

# Pesticides: terminology

## Pesticides:

- insecticides (often 'pesticides'): insects and life-stages
- herbicides: weeds (contact, soil, systemic, growth inhibitors,..)
- fungicides: fungi (mildew)
- algicide: algae
- acaricides: spiders, mites
- etc

« Pesticide » = productname from manufacturer ( « Round-up » )  
= Plant Protection Product (PPP),  
contains active ingredient(s) and additional substances

Active ingredient (s) = chemical substance in PPP that has toxic affect animals or plants

Generic name = chemical substance name ( « glyphosate » ) = determinant to monitor

# Pesticides: terminology

Two ways for determining which pesticides monitor

- 1) Select substances carefully from authorized use in crops in the river basin
- 2) Select a pesticides package that is available at the laboratory:
  - for first impression
  - will result in lots of measurements < detection limit

# 1) Pesticides: matching crops and determinants

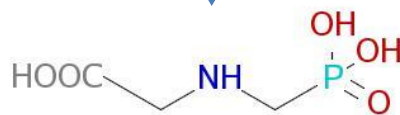
crops



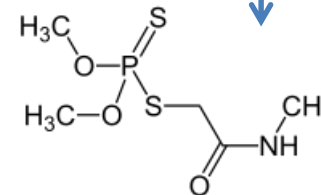
authorized  
PPPs



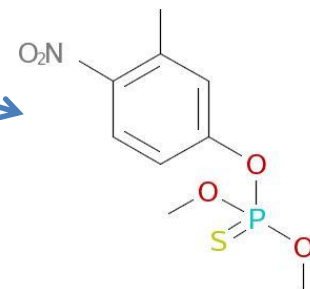
substance



glyphosate



dimethoate



fenitrothion



# Pesticides

Match list of selected and expected substances and match with available packages from laboratory

- Many substances in one analysis 'run'
- Skip single substance which requires an extra analysis or package
- Find optimum: package(s) which most reflects the expected pesticides



# Group Assignment

Try to establish the list of authorized pesticides and substances to analyse for the crops in the Gedora area with high intensive agricultural use

Use <http://www.hadbara.moag.gov.il/hadbara/english/>