



# ARISTO

The European Industry - Academia Network for Revlising and Advancing the Assessment  
of the Soil Microbial TOxicity of Pesticides

MSCA-ITN-EID-H2020 Grant Agreement N°. 956496



## What is ARISTO?

It is an MSCA-ITN-EID project which brings together the expertise of industry and academia in order to train the next generation of soil microbial ecotoxicologists with the prospect of revolutionizing the regulatory framework regarding the assessment of the toxicity of pesticides on soil microorganisms

## What will ARISTO bring to Europe?

To protect the environment and human health from pesticides the European Commission has imposed a stringent regulatory scheme (Regulation 1107/2009), where risk assessment for aquatic organisms and terrestrial macro-organisms is well defined. **In contrast the assessment of the toxicity of pesticides on soil microorganisms relies on an outdated protocol, the OECD 216 N transformation test**, not considering the high-resolution, advanced and standardized methods introduced in soil microbiology in the last 20 years. EFSA identified soil microorganisms as an attribute to monitor in pesticides environmental risk assessment (in 2010), acknowledging their key role in soil ecosystem functioning and reinforced the need for novel tests to assess pesticides toxicity on soil microorganisms (in 2017) .

**ARISTO will fulfil this scientific and regulatory gap aiming to produce the benchmarking knowledge required for the development of advanced tools to comprehensively assess the soil microbial toxicity of pesticides.**

## How ARISTO will achieve this main goal

- Through a multidisciplinary and multisectorial training program for 9 PhD students
- The joint forces of the Academic and the Industrial sector

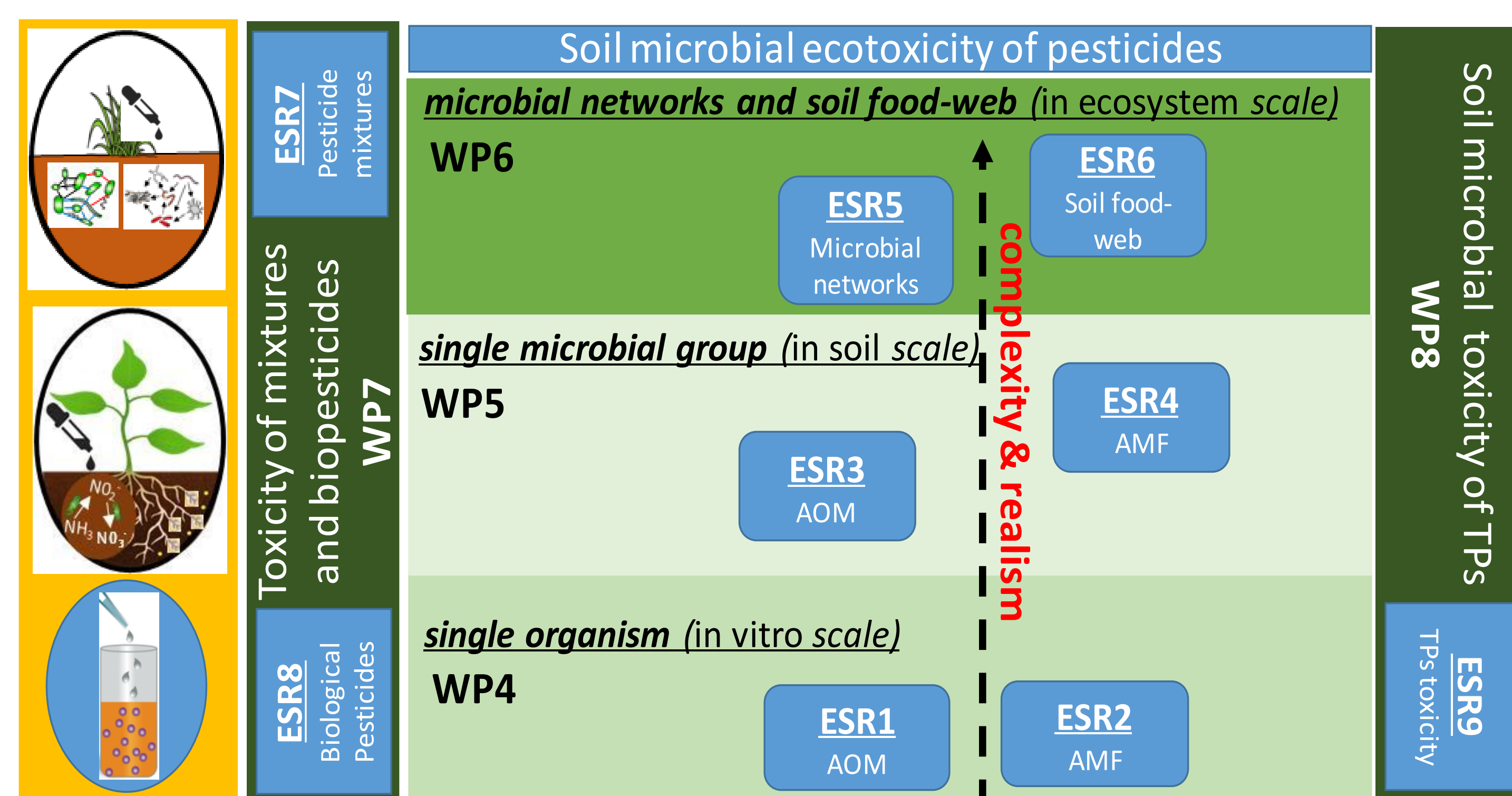
## Which are ARISTO's PhD students

The workforce of ARISTO project is composed of 9 PhD students coming from Greece, Iran, Germany, Armenia, USA, Italy, Brazil, China and Costa Rica which will be asked to perform their research in one academic and one industrial partner in 8 countries in Europe, Israel and Brazil



## What does the research program of ARISTO involve?

The research program of ARISTO is structured along a tiered scheme of research work-packages (WPs) based on the ecotoxicological response of key soil functional microbial groups like **Ammonia-oxidizing microorganisms (AOM)** and **Arbuscular mycorrhizal fungi (AMF)**



## Which are ARISTO's Partners

The ARISTO is coordinated by the **University of Thessaly, Greece**



### 7 academic partners



### 9 industrial partners



## ....but ARISTO goes beyond tiered risk assessment and

- Will assess toxicity of pesticides at soil ecosystem level looking effects **on soil microbial networks and across the soil food web (predator-prey)**
- Will benchmark the potential toxicity of **pesticide mixtures** and of **biopesticides**
- Will setup *in silico* tools to predict the soil microbial toxicity of pesticide transformation products

## What is ARISTO expected to deliver to EUROPE with its end

- A **workforce of well-trained young researchers** in a multisectoral environment in the emerging theme of **soil microbial ecotoxicology with specific interest on pesticides**
- Experimental and in silico tools** to assess in the most accurate, comprehensive and advanced way the **toxicity of pesticides on soil microorganisms**
- A **risk assessment scheme**, supported by experimental evidence, which will benchmark a future and much needed and requested upgrade and revision of the relevant pesticide regulatory framework at EU level