

La Evaluación de Riesgos como motor de la Seguridad
Alimentaria: Europa y América Latina
Madrid 21.05.26

LA CIENCIA DETRÁS DE LA ALIMENTACIÓN SALUDABLE Y SOSTENIBLE

Prof. Dr. Carlos G. das Neves
Científico Jefe EFSA



SEGURIDAD ALIMENTARIA – UN FINAL ACCIDENTADO DEL SIGLO XX



VOLVAMOS AL PASADO – 13 DE DICIEMBRE DE 2000



CORTES GENERALES

DIARIO DE SESIONES DEL

CONGRESO DE LOS DIPUTADOS

PLENO Y DIPUTACIÓN PERMANENTE

Año 2000

VII Legislatura

Núm. 49

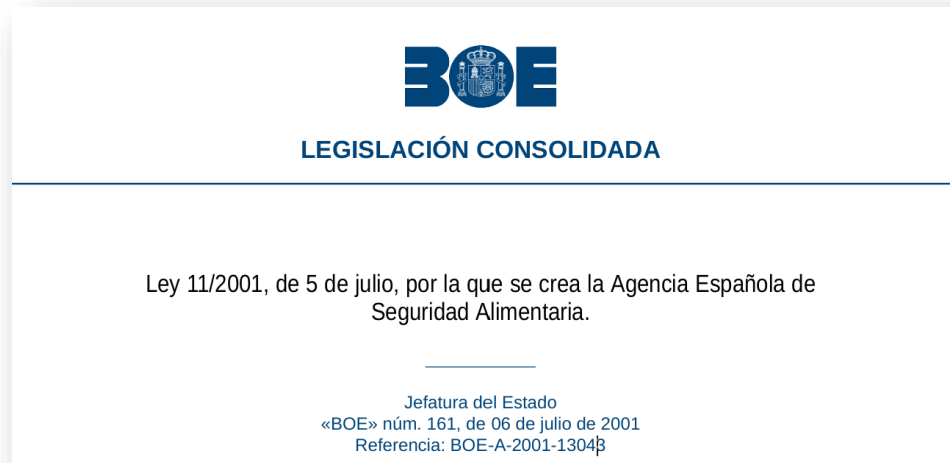
PRESIDENCIA DE LA EXCMA. SRA. D.^a LUISA FERNANDA RUDI ÚBEDA

Sesión plenaria núm. 47

celebrada el miércoles, 13 de diciembre de 2000



25 AÑOS DESPUÉS – ¡UNA MISIÓN QUE ESTÁ CUMPLIENDO!



- La seguridad alimentaria es una **exigencia** derivada de la Constitución
- La presente ley crea la Agencia Española por considerar que ha de ser un elemento fundamental en la **construcción de la seguridad alimentaria en el marco de la Unión Europea.**
- La creación de la Agencia responde a los mismos objetivos que han dado o están dando lugar a la creación de este tipo de organismos en otros estados de la Unión Europea y a la propia **Autoridad Alimentaria Europea. Con todos ellos habrá de colaborar estrechamente.**

**PRUEBA
SUPERADA**



UN MUNDO ENCAMBIQ..





PÉRDIDA BIODIVERSIDAD



CAMBIO CLIMATICO



CAMBIO USO TIERRAS

WAR & DISTURBIOS



PANDEMIAS, EIDs, NTDs

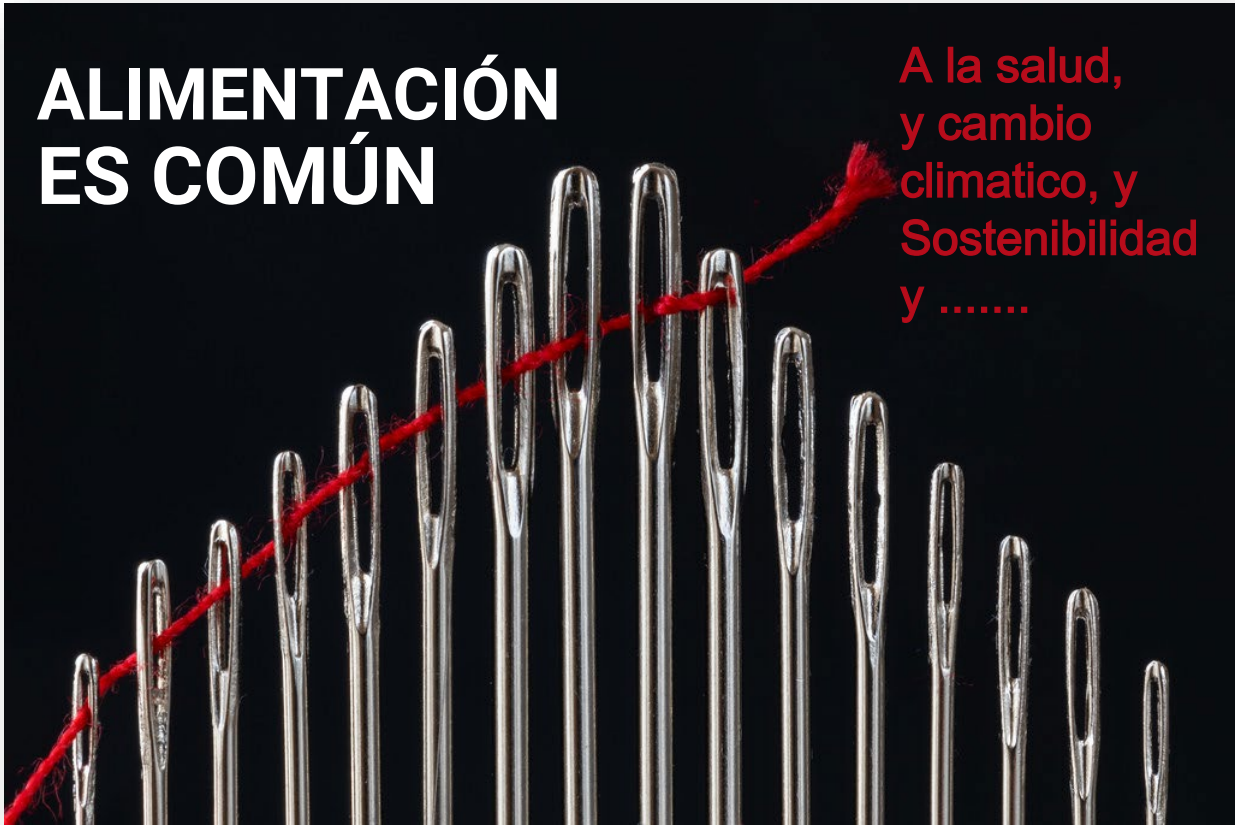
AGOTAMIENTO RECURSOS NATURAL



ALIMENTACIÓN EN EL CENTRO....

ALIMENTACIÓN ES COMÚN

A la salud,
y cambio
climatico, y
Sostenibilidad
y



Global Risks Report 2025

Global risks ranked by severity

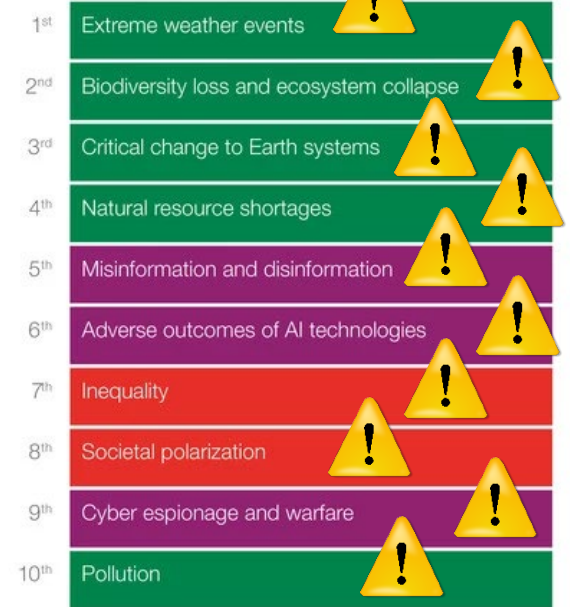


Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period.

Short term (2 years)



Long term (10 years)



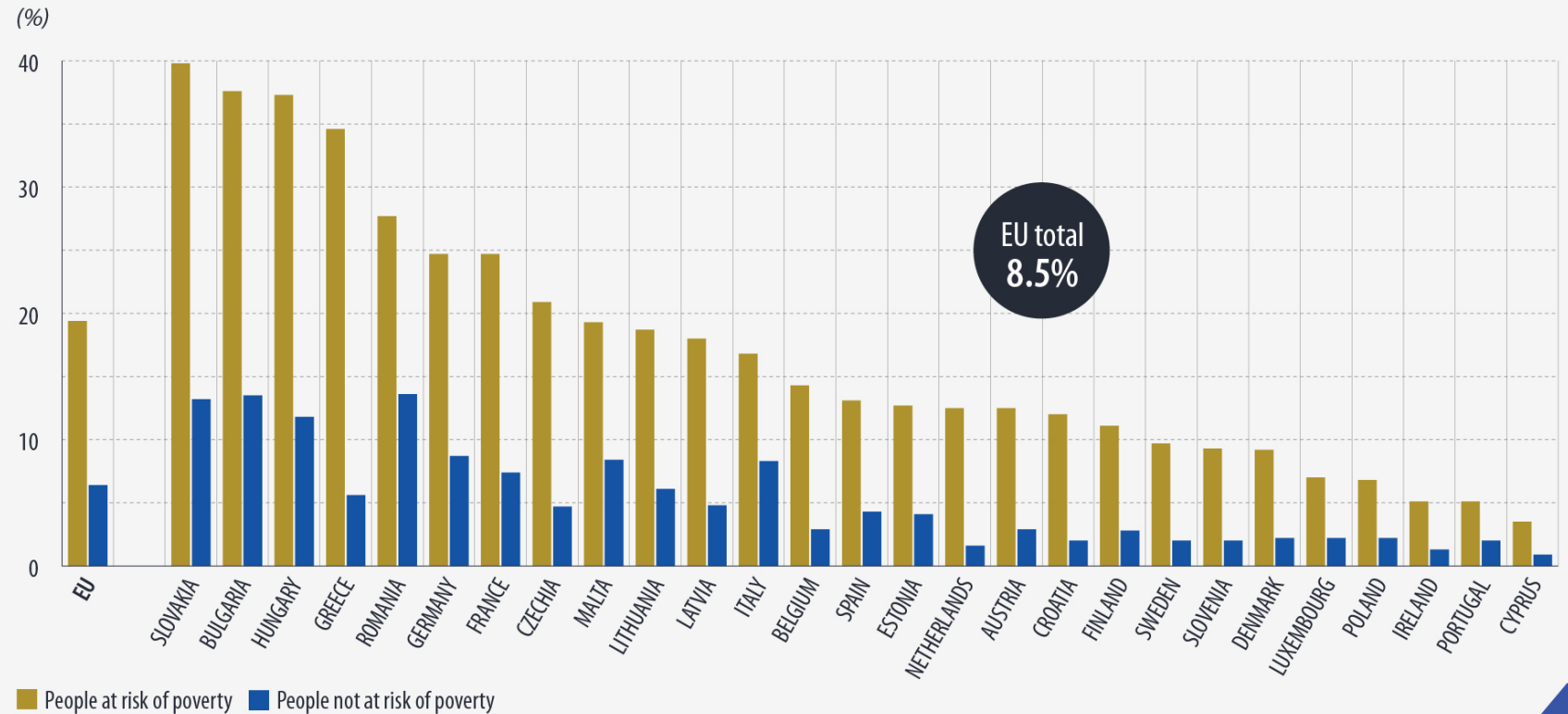
Risk categories ● Economic ● Environmental ● Geopolitical ● Societal ● Technological

Source: World Economic Forum, Global Risks Perception Survey 2024-2025

¿POR QUÉ IMPORTA AQUÍ?

- En 2024, el 8,5% de la población de la UE no podía permitirse una comida que contuviera carne, pescado o un equivalente vegetariano cada dos días.
- El porcentaje fue significativamente mayor para las personas en riesgo de pobreza con un 19,4%, que para las personas sin riesgo de pobreza (6,4%).

People unable to afford a meal with meat, fish, or vegetarian equivalent every second day, 2024

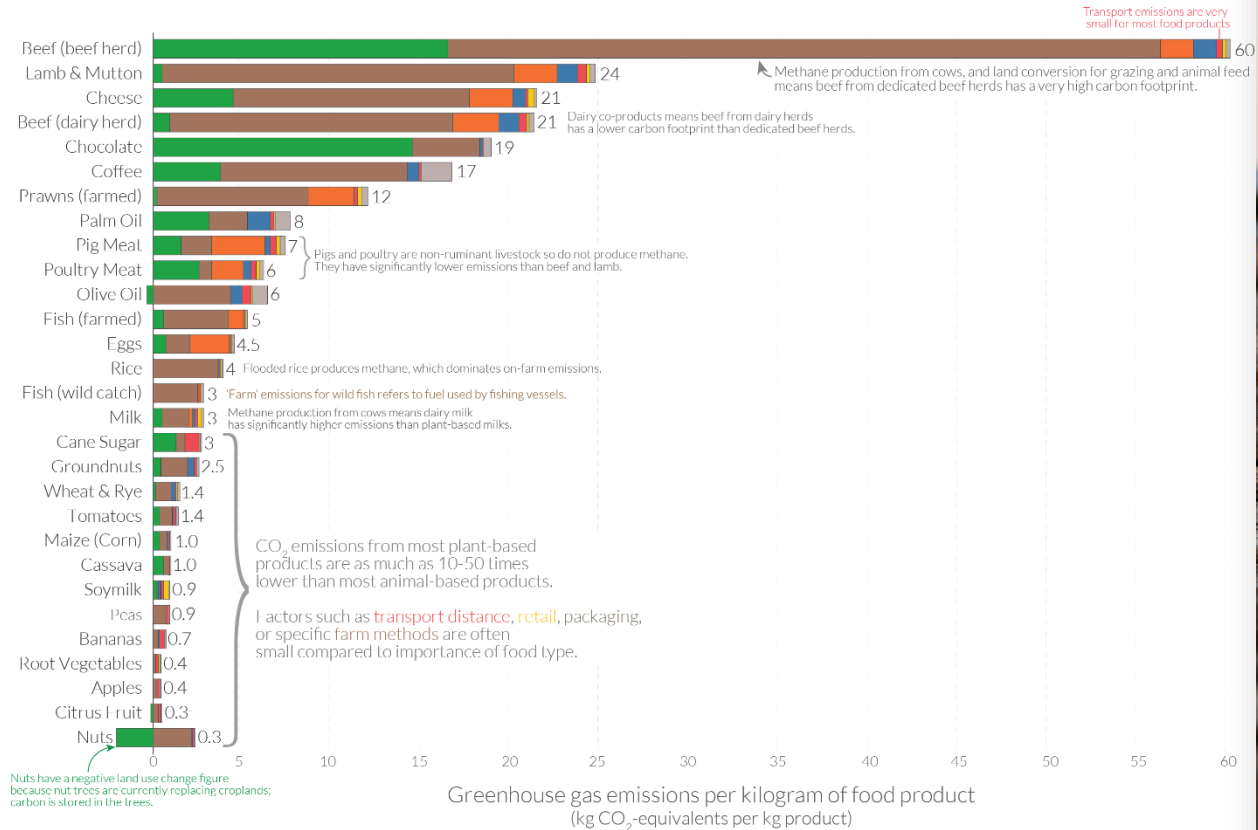
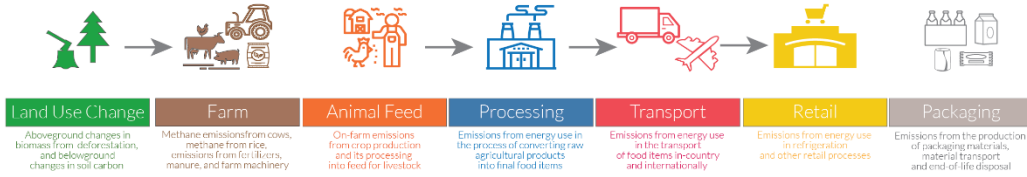


Countries ranked by people at risk of poverty (below 60% of median equalised income), highest to lowest values.
Lithuania: provisional data.

COMIDA.... NO SIEMPRE LIBRE DE CULPA....

Food: greenhouse gas emissions across the supply chain

Our World
in Data



Note: Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries. Data source: Poore and Nemecek (2018). Reducing food's environmental impacts through producers and consumers. *Science*. Images sourced from the Noun Project. OurWorldinData.org - Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Hannah Ritchie.

COMIDA... NO SIEMPRE LIBRE DE SENTIMIENTOS...

Italian government seeks to ban synthetic meat

New legislation targets products developed in laboratories from animal cells

World | Italy | Food and drink

March 28, 2023 | AFP | 55

2 min read



Nella protesta degli agricoltori anche il commercio della farina di grilli

Condividi su:



redazione | Lunedì 05 Febbraio 2024 - 06:30



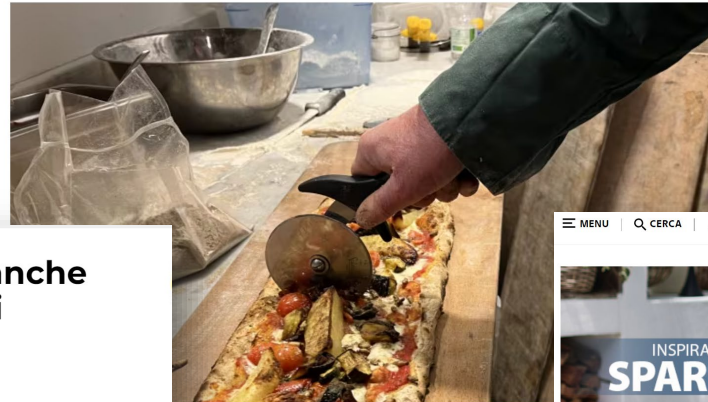
World

Is Italy ready for cricket-powder pizza?

Cricket farmers tout environmental benefits, chefs praise 'elasticity' and nutty taste



Megan Williams · CBC News · Posted: Mar 08, 2024 4:00 AM EST | Last Updated: March 8



...es a vegetable pizza made with cricket powder, at La Rambla
'protein pizza' on the menu. (Megan Williams/CBC)

MENU | CERCA | NOTIFICHE | la Repubblica | ABBONATI | GEDI SMILE | ACCEDI

INSPIRASJON TIL UTEROMMET
SPAR OPPTIL 50%

JYSK

Insetti in tavola: ecologici e salutari, ma l'Italia è la retrovia d'Europa

di Elena Dusi



Il gelato al grillo prodotto dall'italiano Thomas Micolino in Germania

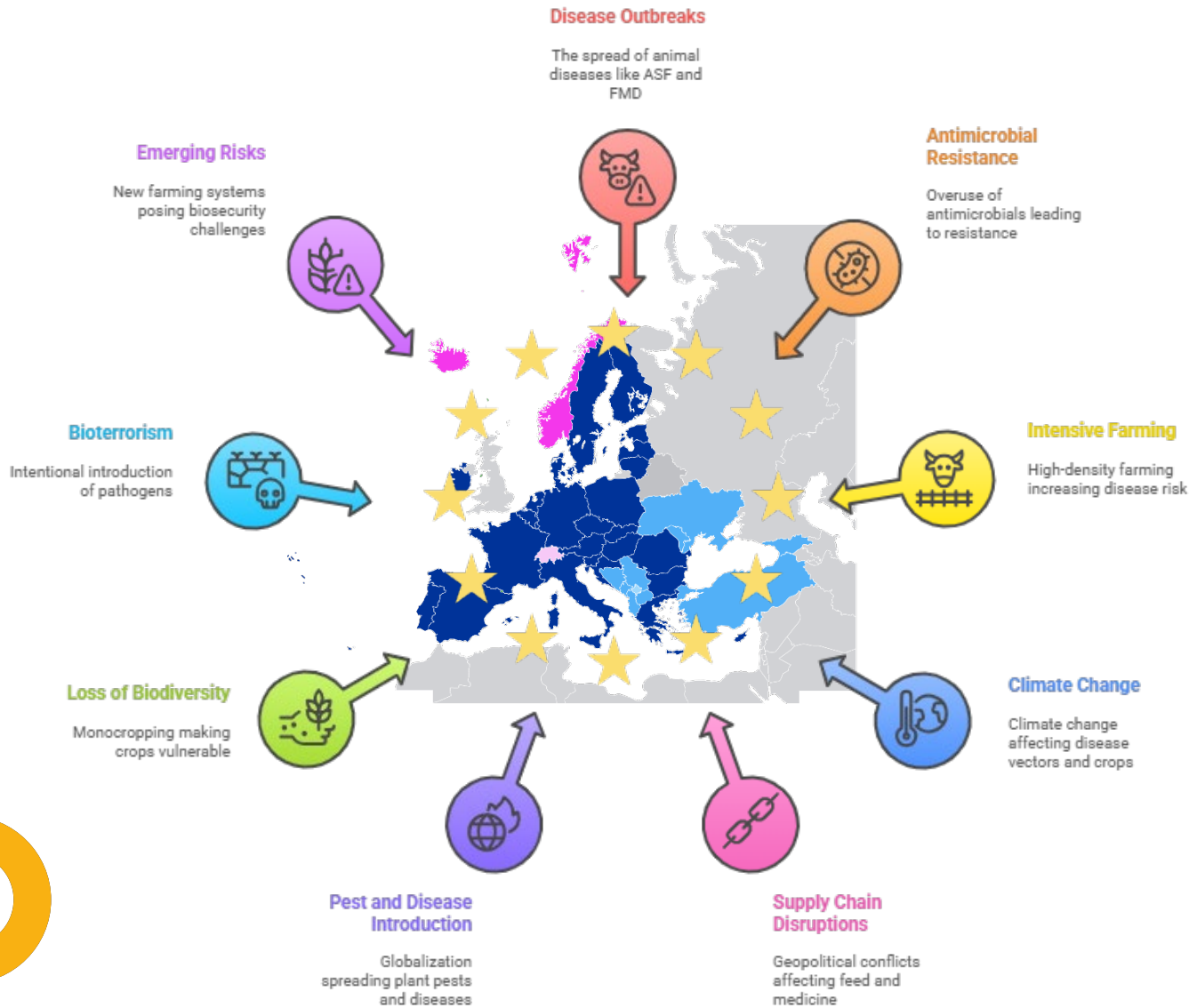
L'Ue ha approvato quattro specie per l'uso alimentare, ma il 70% degli italiani dichiara che non le assaggerebbe mai. Non così in Nord Europa, dove i prodotti a base di farina di insetti si trovano normalmente nei supermercati



L'ascolto è riservato agli abbonati premium



ALGUNOS EJEMPLOS DE AMENAZAS A LA SEGURIDAD ALIMENTARIA

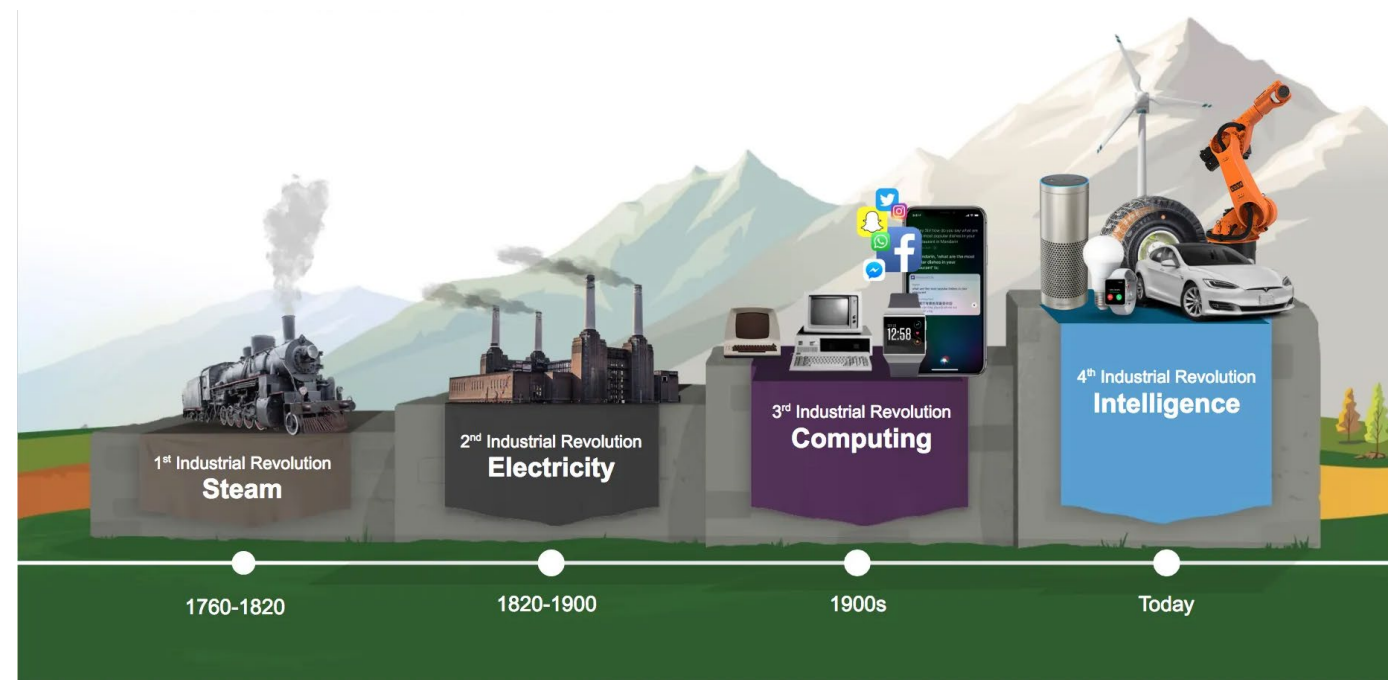
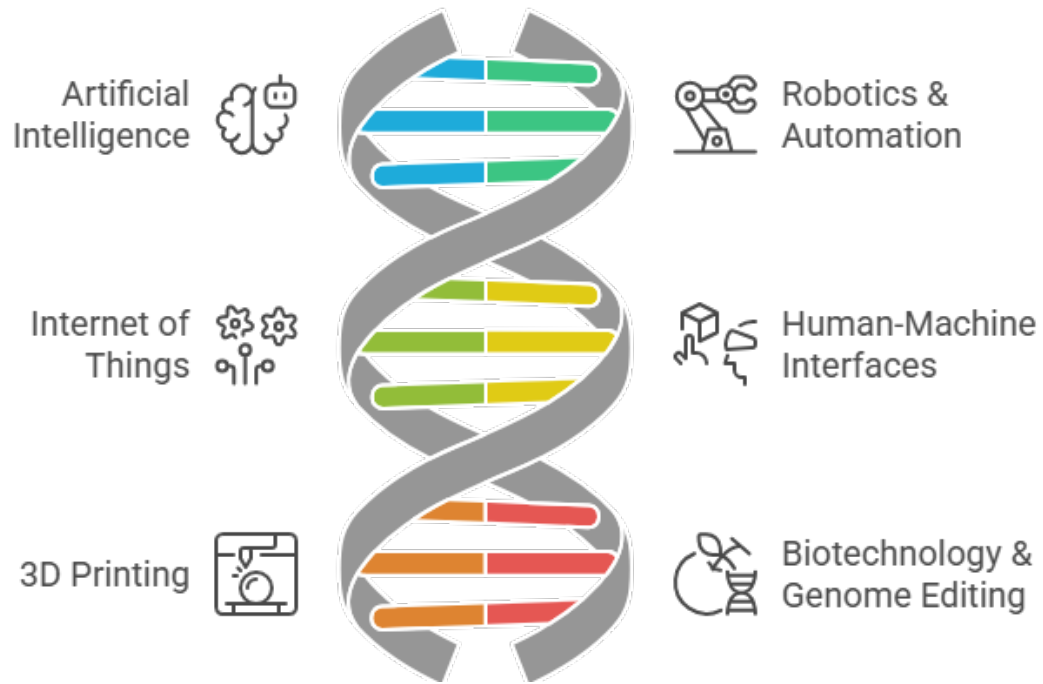


COMIDA EN EL CENTRO... DE UN ECOSISTEMA POLÍTICO COMPLEJO



ALIMENTACIÓN Y LA CUARTA REVOLUCIÓN INDUSTRIAL

Foundations of the Fourth Industrial Revolution



EL PARADIGMA SEGURO - SALUDABLE

SAFE

HEALTHY



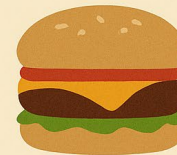
Safe food

Definition

Food that is free from harmful contaminants like bacteria, viruses, pesticides, and chemical residues.

Goal

To prevent food-borne illnesses, which can have severe health consequences.



A perfectly cooked burger is safe to eat.

Healthy food

Definition

Food that provides essential nutrients for growth and well-being.

Goal

To improve long-term health through a balanced diet rich in vitamins, minerals, and other beneficial components.



A fresh salad is a healthy choice.

The duality and tension

- **Health-promoting foods can be vulnerable:** Many nutritious foods, such as fruits, vegetables, and fish, are more susceptible to contamination than highly processed foods.
- **Safety measures can compromise health:** For example, some safety measures might lead to increased pesticide use, or certain food preservation methods might alter nutritional value.
- **Trade-offs can occur:** Policies designed to ensure one goal may not support the other. For instance, focusing solely on



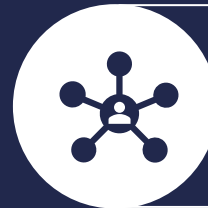
**¡ALTA DEMANDA
DE EVALUACIONES
DE RIESGOS!**



**ROBUSTO – EXCELENCIA
CIENTÍFICA**



TRANSPARENTE



INCLUYESIVO



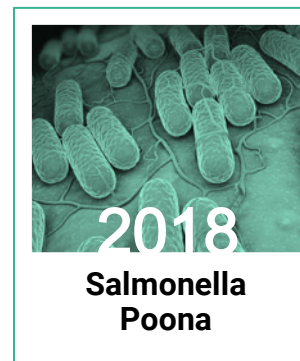
ACCIONABLE



PRODUCIDO RÁPIDAMENTE



¡RRA RAPID RISK ASSESSMENTS – PROTEGIENDO EUROPA!



of the JOURNAL [OPEN ACCESS](#)
10,000
PUBLICATIONS



¿ESTAMOS PREPARADOS PARA LO QUE VIENE?

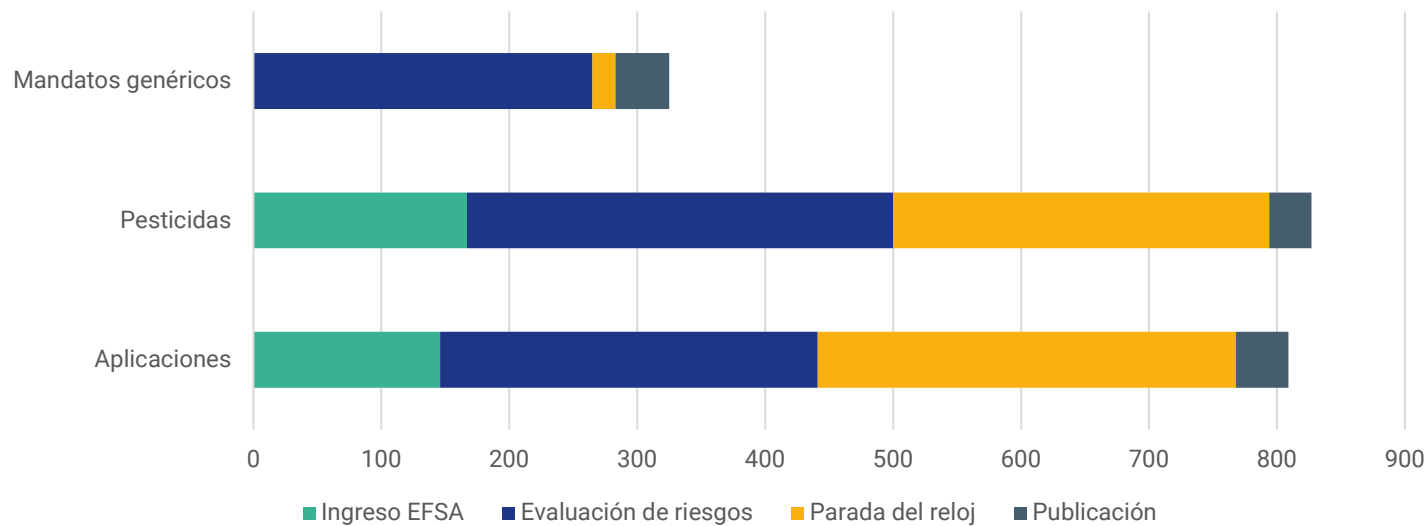


TIEMPO PARA EVALUACIÓN DE RIESGOS



CIENCIAS Y CIENCIAS
REGULATORIAS
Desafíos por venir

Tiempo por tipo de evaluación de riesgos por etapa de proceso
Resultados adoptados en 2023



Más pruebas incorporar
(por ejemplo, aumento de datos, más disciplinas consideradas)



Más "demandas" de transparencia
(por ejemplo, aclaraciones exhaustivas sobre todo el proceso de la RA, consultas y aclaraciones)



Más criterios que cumplir

(por ejemplo, disruptores endocrinos, toxicidad de nano, biodiversidad, toxicidad de mezclas)



Mandatos más complejos

(por ejemplo, mandatos transversales como OH, peticiones para incluir muchas variables,)



QUALIDAD DE LAS APLICACIONES



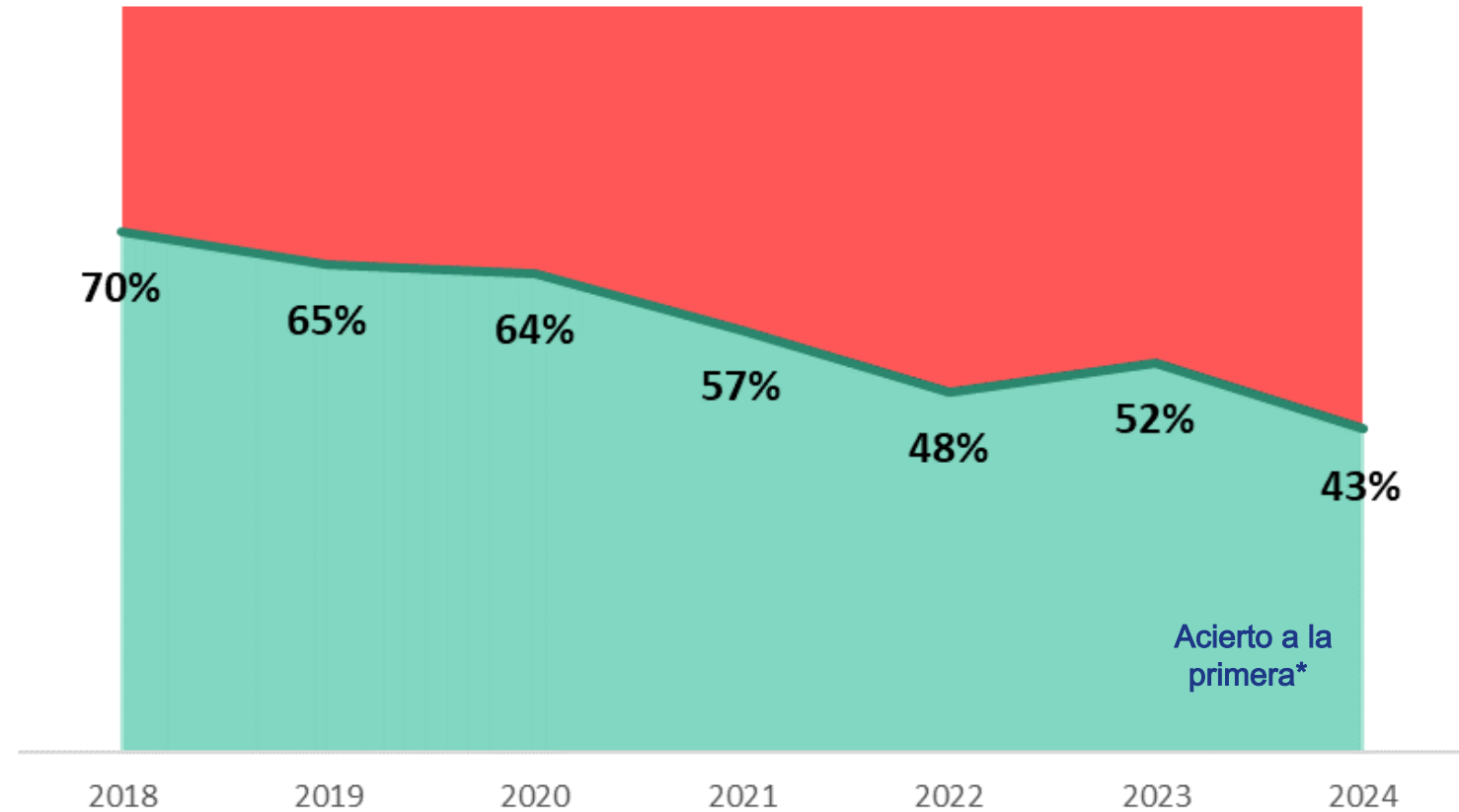
CIENCIAS Y CIENCIAS
REGULATORIAS
Desafíos por venir



Calidad inferior
Aplicaciones



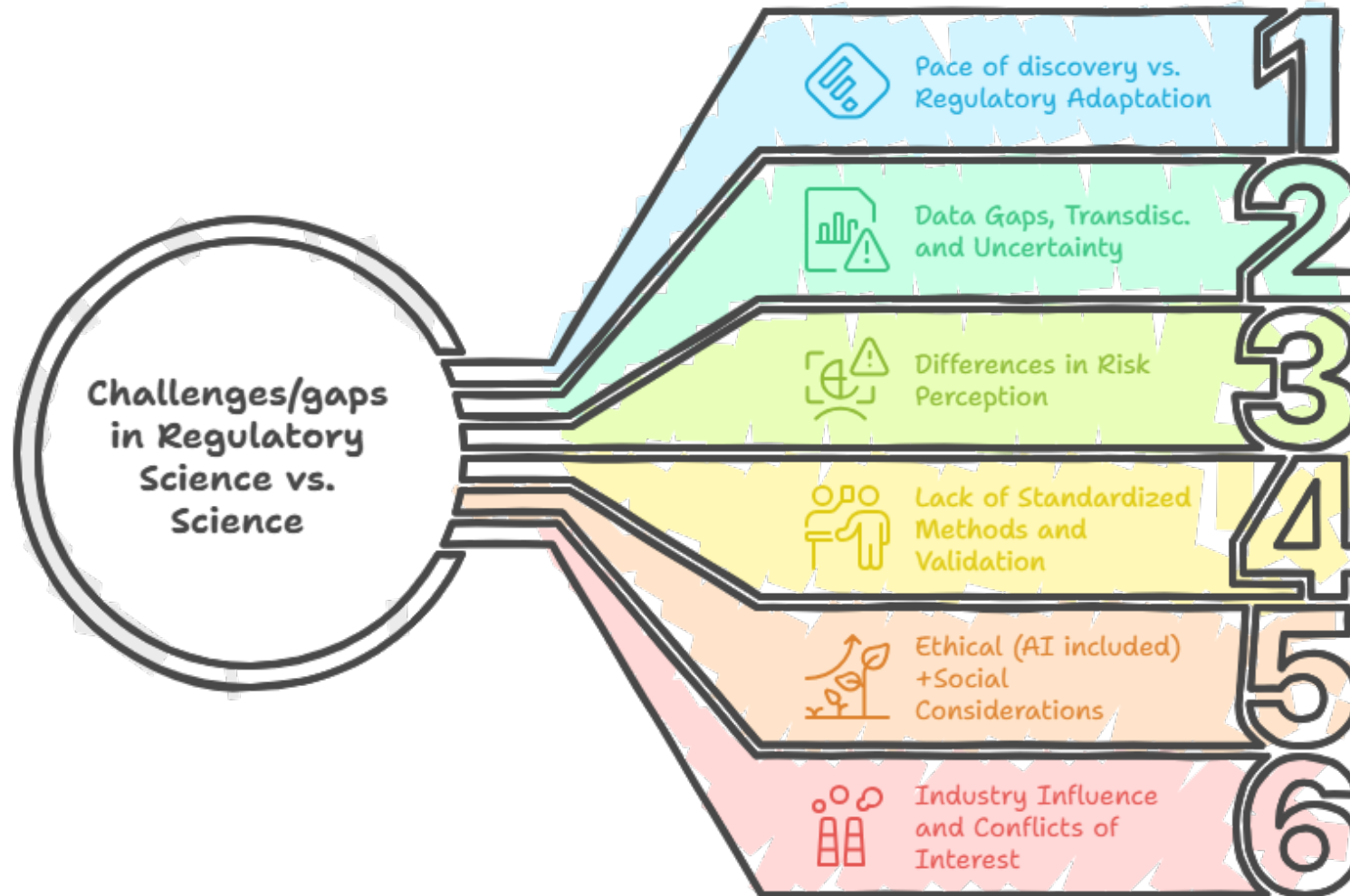
SOLICITANTES



*# de preguntas SO1 cerradas sin necesidad de clockstop/AdR/RfI



CIENCIA VS. CIENCIA REGULATORIA



Grande, Hermosa
CIENCIA

La
Brecha...

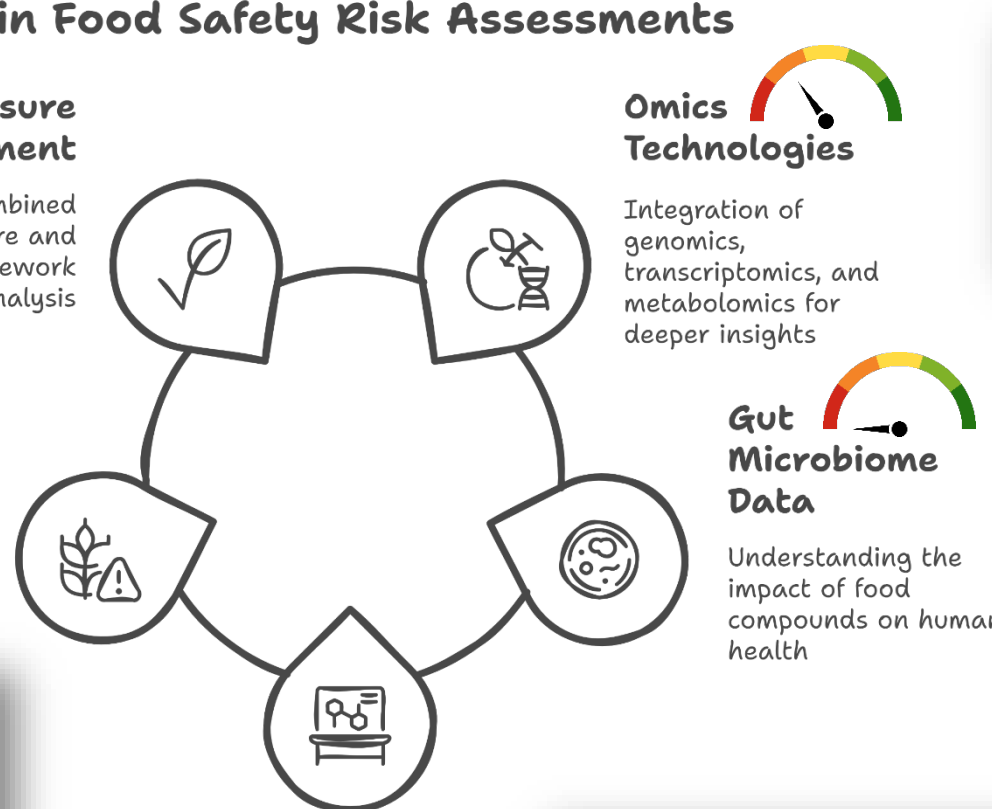
AESAN E FSA

A man in a dark suit and red tie stands on a narrow ledge of a red cliff. He is looking up and to the right, with his hand on his chin in a thoughtful pose. A large, deep gap in the cliff face is visible. A ladder is positioned across the gap, with the text 'AESAN E FSA' written on its rungs. The letters 'A', 'E', 'S', 'A', 'N', 'E', 'F', 'S', 'A' are arranged from left to right. The 'N' and 'E' are yellow, while the other letters are red. The cliff face is a deep red color with some darker red shadows. The sky is a light beige color.

LOS DESAFÍOS QUE SE AVECINAN...



Gaps in integrating advanced technologies in Food Safety Risk Assessments



Exposure Assessment

Data on combined exposure and methods/framework for analysis



Omics Technologies

Integration of genomics, transcriptomics, and metabolomics for deeper insights



Gut Microbiome Data

Understanding the impact of food compounds on human health



Allergenicity Assessment

Evaluating allergenic potential of innovative proteins



New Approach Methodologies

Utilizing in vitro and in silico models for risk assessment

External Scientific Report

APPROVED: 11 July 2024
doi: 10.2903/sp.efsa.2024.EN-8971

Roadmap for action for advancing aggregate exposure to chemicals in the EU

External Scientific Report

APPROVED: 22 October 2024
doi: 10.2903/sp.efsa.2024.EN-9086

Development of a roadmap for action on the application of Omics and associated Bioinformatics Approaches in Risk Assessment

External Scientific Report

APPROVED: 30 January 2024
doi: 10.2903/sp.efsa.2024.EN-8597

Roadmap for the integration of gastro-intestinal (GI) tract microbiomes (human and domestic animal) in risk assessments under EFSA's remit

Environmental microbiomes roadmap

APPROVED: 30 Jan 2024
doi: 10.2903/sp.efsa.2024.EN-8602

Roadmap for the integration of environmental microbiomes in risk assessments under EFSA's remit

Adopted: 27 June 2024
DOI: 10.2903/j.efsa.2024.8961

GUIDANCE

Guidance on the scientific requirements for an application for authorisation of a novel food in the context of Regulation (EU) 2015/2283

EXTERNAL SCIENTIFIC REPORT

APPROVED: 2 May 2022
doi:10.2903/sp.efsa.2022.EN-7341

Development of a Roadmap for Action on New Approach Methodologies in Risk Assessment



EDITORIAL EFSA REVISTA ABRIL DE 2025

Approved: 8 April 2025

DOI: 10.2903/j.efsa.2025.e220401

efsa JOURNAL

EDITORIAL

Advancing EFSA's regulatory science: Updated research and innovation needs

Abstract

This editorial provides an update on research & innovation (R&I) needs that can support EFSA's regulatory science in the coming years. The paper presents research needs for EFSA's work in a number of domains: omics technologies; gut microbiome; new approach methodologies (NAMs); allergenicity risk assessment; aggregate exposure assessment and environmental risk assessment (ERA). In briefly describing R&I needs, the document also addresses emerging challenges and opportunities. The authors acknowledge that this overview is not exhaustive and refer to earlier publications for additional R&I needs, as well as to the roadmaps for a more in-depth presentation. Finally, the document calls for transdisciplinary research, reflecting on the interdependencies between human, animal, plant and environmental health. This editorial will be valuable to stakeholders, research agenda setters and funders, both public and private, in formulating calls for research and project funding related to food safety.

<https://www.efsa.europa.eu/en/efsajournal/pub/e220401>

Cómo avanzar:

- Tecnologías ómicas
- Microbioma
- Nuevas metodologías (NAMs)
- Evaluación del riesgo de alergenicidad
- Evaluación de la exposición agregada
- Evaluación de riesgos ambientales (ERA)

Destaca los desafíos y oportunidades emergentes, llama a **la investigación transdisciplinar** y enfatiza la **interconexión de la salud humana, animal, vegetal y ambiental.**



DEBERÍA ESTAR EN LA AGENDA...

"Los reguladores y organizaciones que implementan políticas tienen necesidades específicas de conocimiento"
Chief Science Advisors of the EU

Los programas de I&D a nivel FP10 y nacionales deben garantizar mecanismos de financiación que apoyen la traducción del conocimiento científico a las necesidades de las ciencias regulatorias





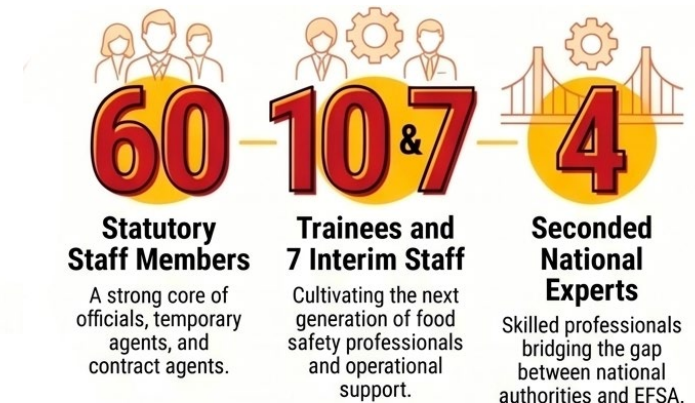
¡UN ESFUERZO ECOSISTÉMICO!



ESPAÑA EN EFSA



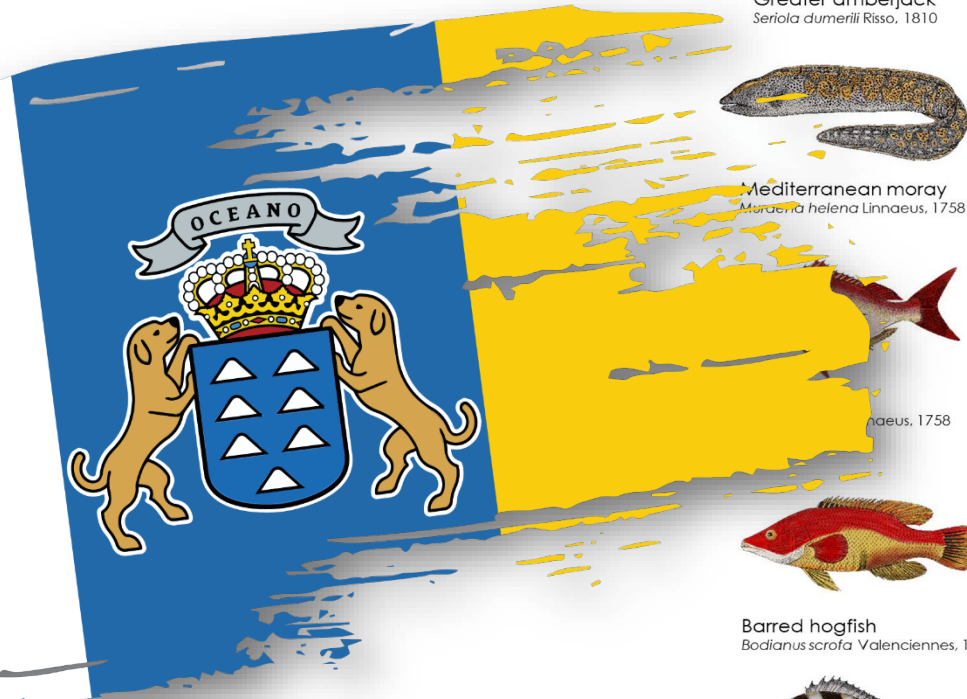
Institutional and Operational Presence



ART.36 - UNA RED DE EXCELENCIA



UNA LLAMADA DE ATENCIÓN PARA LA SEGURIDAD ALIMENTARIA Y EL CAMBIO CLIMÁTICO



Greater amberjack
Seriola dumerilii Risso, 1810



Longfin yellowtail
Seriola rivoliana Valenciennes, 1833



Lesser amberjack
Seriola fasciata Bloch, 1793



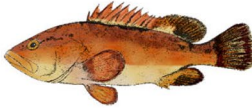
Mediterranean moray
Muraena helena Linnaeus, 1758



White-eyed moray
Muraena augusti Kaup, 1856



Brown moray
Gymnothorax unicolor Delaroche, 1809



Dusky grouper
Epinephelus marginatus Lowe, 1834

Island grouper
Mycteroperca fusca Lowe, 1838



Barred hogfish
Bodianus scrofa Valenciennes, 1839



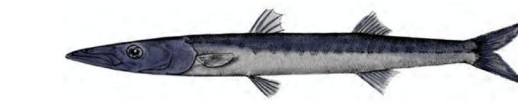
Grey triggerfish
Balistes capriscus Gmelin, 1789



Parrotfish
Sparisoma cretense Linnaeus, 1758



Zebra seabream
Diplodus cervinus Lowe, 1838



Yellowmouth barracuda
Sphyræna viridensis Cuvier, 1829



Blacktail comber
Serranus atricauda Günther, 1874

Ciguatera Fish Poisoning, Canary Islands

To the Editor: Ciguatera outbreaks usually occur in the area between 35° north and 35° south latitude, mainly in the Caribbean, Indo-Pacific islands, and the Indian Ocean (1–5) (Figure). Occasionally, ciguatera poisoning has been reported outside disease endemic areas, such as the Bahamas, Canada, or Chile, but no case had been described in the West African region until now. European and Spanish cases have been rarely described and are mainly associated with seafood imported from disease-endemic regions (6).

Ciguatera fish poisoning is a clinical syndrome caused by eating contaminated fish (1). The causative toxins of its clinical manifestations are ciguatoxins (7). These toxins are transmitted by dinoflagellates of the species *Gambierdiscus toxicus*, which lives adhered to damaged coral reefs in tropical seas (2). Herbivorous fish species accumulate toxins in their musculature, liver, and viscera after ingesting dinoflagellates. Larger marine carnivores eat contaminated fish and concentrate ciguatoxins (1,2). More than 425 species of fish are associated with ciguatera poisoning in humans. The most commonly implicated fish are barracuda, red snapper, grouper, amberjack, sea bass, surgeonfish, and moray (eel) (2,3). In January 2004, 2 fishermen captured a 26-kg amberjack (local name: Medregal Negro; scientific name:

sumed some fish, and neurologic and gastrointestinal symptoms developed within 30 minutes to 28 hours. The 5 family members sought treatment at the emergency room of Hospital de Fuerteventura and the Outpatient Clinic of Infectious Diseases and Tropical Medicine Service of Hospital Insular de Las Palmas.

The 5 family members exhibited a combination of gastrointestinal (diarrhea [4 persons], nausea/vomiting [3 persons], metallic taste [1 person]), cardiologic (heart rhythm disturbances [2 persons]), systemic (fatigue [5 persons], itching [3 persons], dizziness [1 person]), and neurologic manifestations (myalgia [3 persons], peripheral paresthesia [3 persons], perioral numbness [2 persons], and reversal of hot and cold sensations [3 persons]), which is pathognomonic of ciguatera poisoning). These clinical observations and laboratory data were collected from a prospective questionnaire filled in by physicians at the patients' first visits. No hematologic or biochemical abnormalities were detected in any patient. Based upon the symptomatic profiles, relationships of the patients, and their common dietary histories, ciguatera intoxication was diagnosed in all. None of the patients required hospitalization. The neurologic and gastrointestinal symptoms resolved over several weeks, but intermittent recurrence of some symptoms, at lower intensities, was noted for several months.

A portion of the implicated fish was recovered from freezer storage at the fisherman's home. A solid-phase membrane immunobead assay with a monoclonal antibody directed against Pacific ciguatoxins and related polyether toxins was used to detect ciguatoxins or other antigenically related

UNA LENTE DE SALUD SOBRE LAS BIOTOXINAS MARINAS – GRUPO DE LA CIGUATOXINA (CTX)



OH habilitado: análisis, vigilancia, red científica



ART.36 - UNA RED DE EXCELENCIA



¡EL ÉXITO ESTÁ EN LAS GENERACIONES FUTURAS!



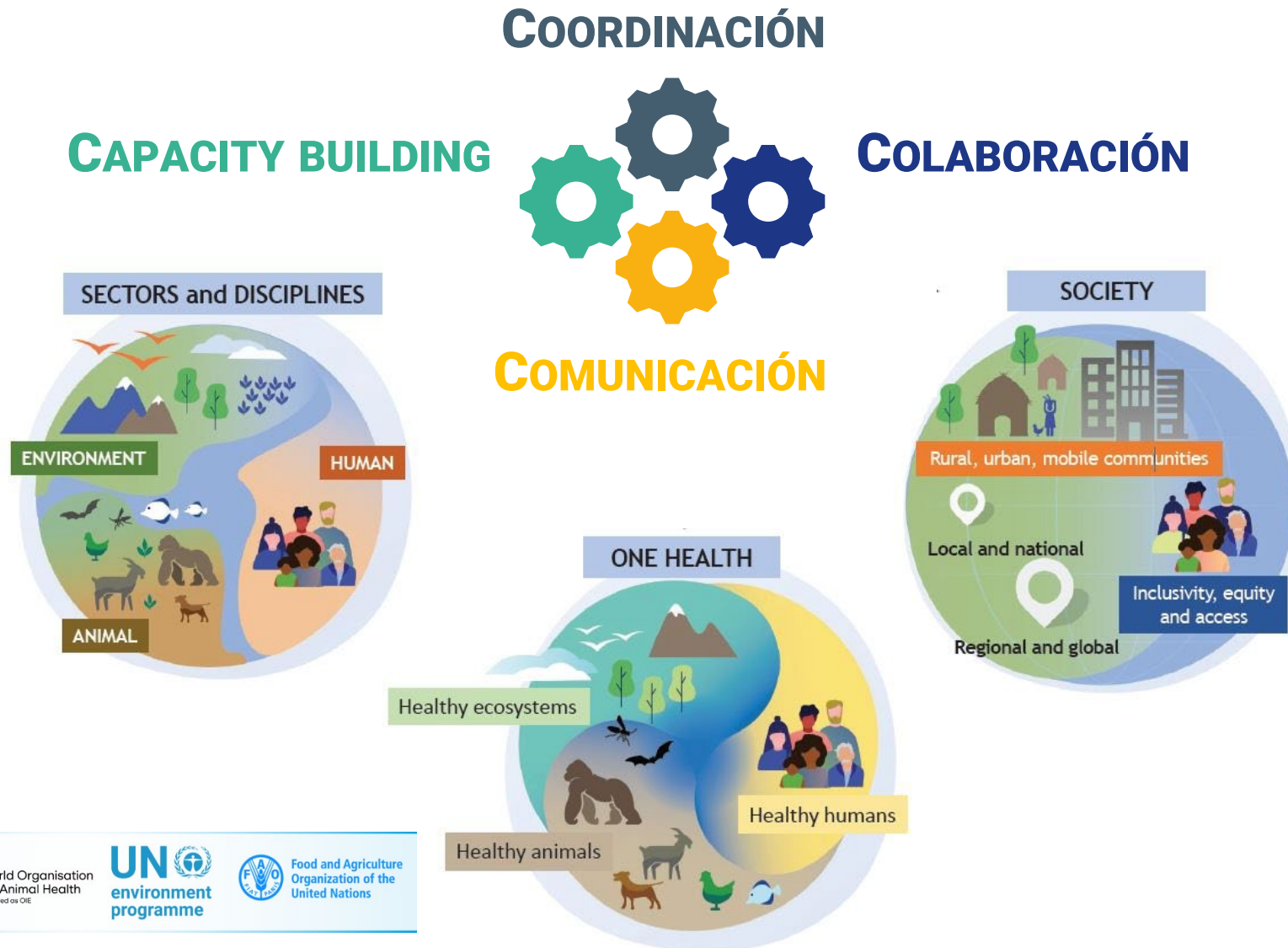
DESTACANDO LA **CONTRIBUCIÓN DE ESPAÑA**



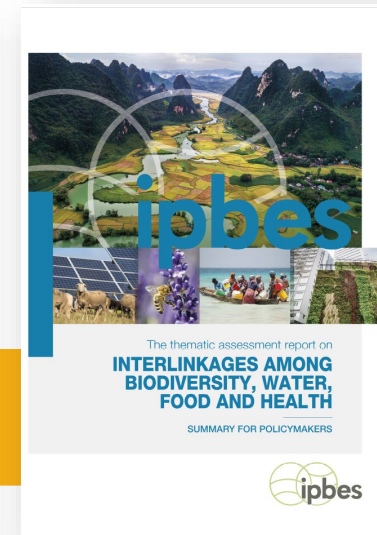
PARTICIPACIÓN EN EL ESQUEMA ACTUAL (CICLO 2022-2023)



UN ENFOQUE DIRECTO... ¡UN VIAJE DIFÍCIL!



CARPE DIEM.... ¡EUROPA! CARPE DIEM... ¡ESPAÑA!



¡UN ATLÁNTICO QUE TAMBIÉN PUEDA UNIR PARA LA SEGURIDAD ALIMENTARIA!



©FAO/ Daniela Marín

27 Oct
2025

IBEROAMÉRICA Y EL CARIBE REFUERZAN DESDE MÉXICO SU ACCIÓN PARLAMENTARIA CONJUNTA POR LA SEGURIDAD ALIMENTARIA

EU-MERCOSUR

PARTNERSHIP AGREEMENT



COHESIÓN SOCIAL CONOCIMIENTO COOPERACIÓN CULTURA GÉNERO INNOVACIÓN SOSTENIBILIDAD ESPECIALES QUIÉNES SOMOS

Seguridad alimentaria
La seguridad alimentaria en el camino al hambre cero



GARANTIZAR LA PREPARACIÓN PARA FUTURAS NECESIDADES DE ANÁLISIS DE RIESGOS



Una red colaborativa global para la preparación



Iberoamérica.
Juntos construimos nuestra Comunidad.
Juntos la proyectamos hacia el futuro y hacia el mundo.

¡ALGUNOS DIRÁN QUE NOSOTROS, EFSA/AESAN, LLEGAMOS 400 AÑOS TARDE!

Diario: Olla (cocido), salpicón (carne fría picada con vinagre, aceite y cebolla).

Sábados: Duelos y quebrantos (plato a base de huevos, tocino y casquería como sesos de cordero).

Viernes: Lentejas, siguiendo la abstinencia religiosa.

Domingos: Algún palomino (ave) de añadidura.

efsa
EUROPEAN FOOD SAFETY AUTHORITY

How to use the DRV Finder Disclaimer FAQ Glossary & Abbreviations Conversion Factors <Share EN

DRV Finder

Dietary Reference Values for the EU

The DRV Finder* is an interactive tool that gives quick and easy access to EFSA's Dietary reference values (DRVs) for nutrients. It is intended for end users of these values, such as nutrition and health professionals, risk managers, policy-makers, food manufacturers and scientists.

DRVs are science-based nutrient reference values for healthy populations. They vary by life stage and gender. They have many purposes, such as assessing the nutritional quality of diets of individuals or groups, designing diets (e.g. school meals), creating nutrition guidelines, dietary counselling, setting reference values for food labelling, and for the development of nutrition and food policies.

*DRVs are not nutrient goals or recommendations for individuals.

Do you want to find DRVs per "Population" or per "Nutrients"?

TARGET POPULATIONS NUTRIENTS

Categoría	Nutrientes	Don Quijote	DRV EFSA
Carbohidratos	Fibra dietética	16,5 g/día	25 g/día
Minerales	Calcio	67,19 mg/día	950 mg/día
Minerales	Hierro	8,20 mg/día	11 mg/día
Minerales	Magnesio	96,55 mg/día	350 mg/día
Minerales	Fósforo	570 mg/día	550 mg/día
Minerales	Potasio	1099 mg/día	3500 mg/día
Minerales	Zinc	5,7 mg/día	16,3 mg/día
			330 µg de
Vitaminas	Folato	357 µg de EFC/día	DFE/día
Vitaminas	Riboflavina	0,38 mg/día	1,6 mg/día
Vitaminas	Thiamin	0,68 mg/día	0,1 mg/MJ
			750 µg de energía
			reproductiva por
			día
Vitaminas	Vitamina A	225,82 µg RE/día	
Vitaminas	Vitamina B6	0,79 mg/día	1,7 mg/día
Vitaminas	Vitamina C	3,63 mg/día	110 mg/día
Vitaminas	Vitamina E	1,05 mg/día	13 mg/día

Adecuado

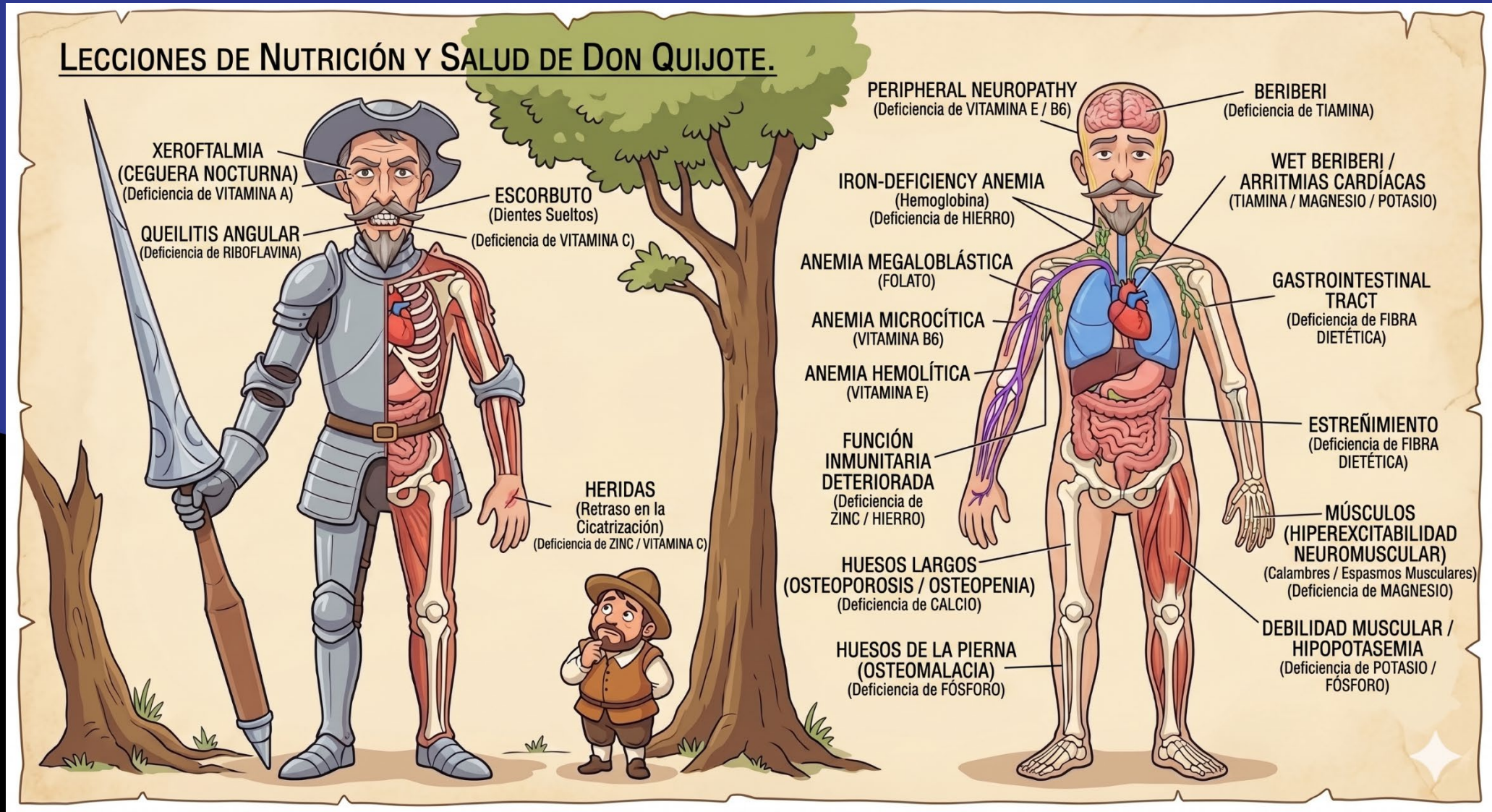
Insuficiencia Marginal

Insuficiencia Clínica

Deficiencia Grave


¡ALGUNOS DIRÁN QUE NOSOTROS, EFSA/AESAN, LLEGAMOS 400 AÑOS TARDE!

LECCIONES DE NUTRICIÓN Y SALUD DE DON QUIJOTE.



EL ORIGEN DE UN PROYECTO EUROPEO – EL PRONOMBRE **NOS/NOSOTROS**



ONE FINAL THOUGHT
AND REFLECTION. 



EL ORIGEN DE UN PROYECTO EUROPEO – EL PRONOMBRE **NOS/NOSOTROS**



Premio Nobel **Craig Mello**

"La ciencia es una empresa unificadora, que **NOS** une para resolver problemas, alimentar nuestro sentido de asombro y entender nuestro lugar en el mundo.

Hay tantas fuerzas que nos dividen: barreras de idioma, costumbres, ideología y creencias. Pero la ciencia **trasciende** estas fuerzas.

El conocimiento resultante **cruza todas las fronteras** y se extiende por todo el mundo. El conocimiento **NOS pertenece a todos.**"



Papa **León XIV**

"En un momento histórico marcado por profundas divisiones y contradicciones, sentirse unido por el vínculo de colaboración no es solo un ideal hermoso, sino un llamado decisivo a la acción. No debemos conformar **NOS** con llenar las paredes con grandes carteles llamativos. Ha llegado el momento de renovar el compromiso que tendrá un impacto positivo en la vida de quienes tienen hambre y esperan acciones tangibles de **NOSOTRO** para sacarlos de su miseria."





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española de
seguridad
alimentaria y
nutrición



Gracias—Gràcies—Grazas—Eskerrik asko—Mercés

