

Finance mechanisms supporting implementation of pesticide risk reduction approaches

CABI Regional Consultation Meeting, The Hague, 15 May 2025

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Agrifood systems: Key data related to the Triple Planetary Crisis



CLIMATE ACTION

31% of total anthropogenic **GHG emissions** (FAO, 2021)

Food loss and waste generates **8-10%** of global GHG emissions (UNEP 2021)

In terms of single gases, agri-food systems generated 21% of carbon dioxide emissions, 53% of methane emissions and 78% of nitrous oxide emissions globally in 2019. (FAO 2021)



NATURE ACTION

Agriculture irrigation accounts for **70% of water use worldwide**. (OECD)

50% of deforestation is due to conversion of forest into cropland,40% comes from livestockgrazing. (FAO 2021)

Restoration of **350 million hectares** of degraded land between now and 2030 could generate **USD 9 trillion in ecosystem services** and take an additional 13-26 gigatons of greenhouse gases out of the atmosphere. (UNEP, 2019)



CHEMICALS AND POLLUTION ACTION

Global pesticides use in agriculture in 2019 represents **4.2 million tonnes**, equivalent to **0.6 kg/person**. (FAO 2021)

Each year, **200 million tonnes** of reactive nitrogen – **80** % – is lost to the environment, leaching into soil, rivers and lakes and emitted to the air. (UNEP, 2019)

About **385 million cases of non-fatal unintentional pesticide poisonings** have been estimated to occur every year, with approximately **11,000** deaths. (UNEP 2021)



Cost of doing nothing

COST OF DOING NOTHING IS ENORMOUS





hidden social, economic and environmental costs/ yr due to the way food systems operate





Projected **obesity** cost by 2035





143,000



Collective losses of businesses in LMICs/ yr due to malnutritionrelated productivity reductions



Lives that could be saved in the EU in 2030 by repurposing 100%

of agricultural subsidies towards sustainable & healthy diets

THE WAY FORWARD



REINFORCING

INNOVATIVE COLLABORATIVE FUNDING MODEL



REDEPLOYING

HEALTHY DIET SAVINGS



REPURPOSING

PUBLIC & DEVELOPMENT **EXPENDITURES**





ക്കൂ Global land degradation

(10 - 17% of the world economy)



Source: Good Food Finance Network

Some critical drivers of change



Regulatory pressure

Both KM-GBF and GFC have targets to eliminate HHPs from agriculture, forthcoming plastics treaty, and the Global Alliance on HHPs! Mandatory CSRD ESRS in Europe.



Physical risks, liabilities and costs

FAO estimate that USD 10 trillion of environmental, social and health costs are hidden in current food and farming systems.



Consumer preference

Growing consumer pressure with concerns about food quality, diets, and health



Access to finance

Sustainable finance taxonomies increasingly requiring screening of projects against biodiversity, circularity and pollution metrics



Growing pressure for disclosure

Frameworks and metrics on pollution that can be considered for corporate disclosures differ in the level of specificity. Stricter **supply chain due diligence laws** (especially in the EU) will require businesses to track **pollution indicators across value chains**.





The Financing Agrochemical Reduction and Management (FARM) programme works globally and across seven countries: Ecuador, India, Kenya, Lao PDR, Philippines, Uruguay and Viet Nam.

FARM's aim: to reduce the use of harmful pesticides and plastics in agriculture.

How we do it: by shifting policies and funds toward safer agrochemical management – and a healthier future for the planet.

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FARM works to:

- promote low- and non-chemical alternatives,
- incentivize farmers to adopt sustainable practices,
- leverage finance from public resources and the financial sector,
- align policy, enforcement, and finance for sustainable management of pesticides and agricultural plastic.

...and to deliver global environmental benefits:



51,000 tons of hazardous pesticides from being released



20,000 tons of plastic waste from being released



Improve the lives of **3.8 million people**



Avoid **35,000** tons of carbon dioxide emissions



3 millionhectares of land from degradation



How can the FARM project support changing the landscape?



Collaboration

- Working agrifood value change stakeholders, banks and financial institutions (current footprint, commitments, key challenges, etc.).
- Building on the existing networks UNEP-FI, ABIM, CABI, UNRCs
- Support the value chain actors to set roadmaps and targets on pollution



Outlook

Scoping studies and research on

- the current pollution baselines and guidelines,
- tools,
- regulations and standars aligned to regional and national contexts,
- sustainable finance taxonomies



Awareness

- On hazardous impacts and material risks from agrochemical and agricultural plastics pollution to the banking sector,
- financial viability of alternative technologies, financing models, nonfinancial risk reduction approaches.



Policy

Work with public sector finance institutions and government to:

- restructure subsidies to reduce pollution,
- develop green finance models,
- boost sustainable public procurement and consumer information.





GOVERNMENTS



CONCESSIONAL & CATALYTIC FINANCE



DONOR AGENCIES



INNOVATORS





- Leverage existing assets like sovereign wealth funds and state-owned enterprises to provide land and facilities for food infrastructure
- Utilize public investment vehicles creatively through asset monetization instead of fiscal spending
- · Support aggregation of small-scale farmers into cooperatives to enable efficient lending
- Strategically reallocate agricultural subsidies towards sustainable farming



- Provide low-cost loans, grants, credit quarantees to derisk investments in sustainable agriculture
- Enable affordable financing for low- and middle-income countries to support food system transformation
- Multilateral agencies and development banks are major providers of concessional finance



- Supply grant funding for technical training, advisory services, and institutional strengthening
- Provide initial capital for investments to be repaid through project returns
- Serve as collaborators sharing sustainable farming knowledge and expertise



- Partner in investments to accelerate development of emissions-reducing technologies
- Receive incentives like lowered innovation costs and IP rights to rapidly scale solutions



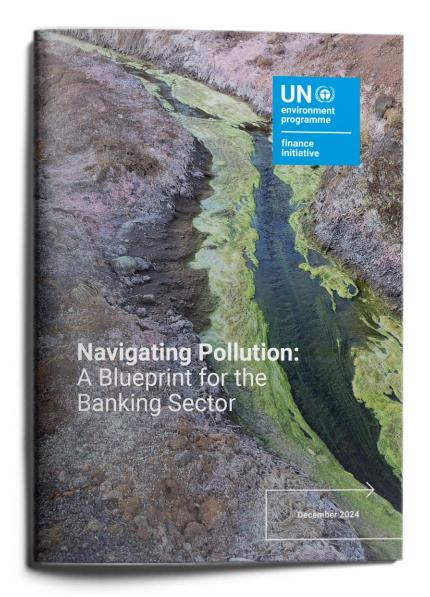
- Leverage partnerships to mitigate risks across food system investments
- Tap into concessional finance, government approvals, sustainability expertise
- Monetize opportunities in regenerative agriculture, alternative proteins, reduced waste
- Apply investment acumen to generate financial returns with social and environmental impact



Navigating Pollution: A Blueprint for the Banking Sector

The report highlights:

- Economic and social costs of pollution
- Double materiality approach: environmental and social impacts of pollution and increased risks for financial institutions
- Application of the framework to five sectors, including agriculture





Impact of lending and investment has environmental, social and economic costs:

- Combined they represent approx.
 USD 20 trillion per annum (or 20% of the entire global economic system)
- Estimating the costs and risks is challenging:

Direct economic costs Indirect economic costs

- Readily quantifiable
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- Hard to quantify
- 1. Complexity of pollution
- 2. Measurement and data availability
- 3. Lack of markets and cost reflective prices
- 4. Complexity of economic systems

Media	Direct economic costs	Indirect economic costs/losses	Annual loss (USD)
Air	 Medical expenses for pollution-related illnesses Agricultural losses Reduced property values Control and cleanup measures 	 Reduced labour productivity Loss of tourism revenue Yield decline from soil acidification Damage to infrastructure 	8.1 trillion (World Bank 2022)
Soil	 Reduced crop yields Increased production costs Loss of property value Soil remediation costs 	 Health care costs Loss of ecosystem services Loss of biodiversity Loss of amenity value 	6.3-10.6 trillion (ELD 2015)
Fresh water	 Increased water treatment costs Reduced agricultural productivity Loss of fisheries revenue Property value decline 	 Health care costs Industrial losses Loss of ecosystem services Loss of amenity value 	0.5 trillion (UNDP 2016)
Oceans	 Fisheries decline Coastal property damage Cleanup costs Loss of fisheries revenue 	 Loss of ecosystem services Increased costs for industries Impact on food security Amenity value decline 	3.7 trillion (plastics only) (WWF 2021)



Source: Navigating Pollution: A Blueprint for the Banking Sector

A life-cycle approach indicates upstream and downstream opportunities - Agricultural Value Chain

Lifecycle Stage

Design & Development

· Avoiding built-in agro-

chemical dependence

and associated agro-

chemical persistence,

bioaccumulation,

biomagnification,

mobility, toxicity,

degradability.

Distribution

End-of-Life

Some Priorities

Some Sustainable Finance Opportunities

Low input (high systems design; low input systems Integrated pest

- yield) and biodiverse financial services for
- management (IPM)
- Biomimicry
- · Physical weed management

 Minimising accidental releases, unintended hazardous byproducts, operational errors, fugitive emissions

Production

- · Design and operationalisation of sustainable (biodiverse) intensification systems incl. perennialisation, agroforestry, mixed cropping, minimum tillage
- Biological alternatives
- Precision agriculture (PA)

- Lowering transportation emissions, accidental spills, storage leakages
- Ensure agrochemicals are distributed with appropriate health and safety information and training
- Sustainable packaging
- Safe biodegradeable materials
- Realtime supply chain monitoring loT

· Eliminating pesticide, herbicide, insecticide contamination and residues (in air, water, soil and food);

Use

- · Minimising biodiversity loss; nutrient run-off; salinity from irrigation; GHGs
- · Integrated Pest Management (IPM) and Precision Agriculture (PA) services
- · Biological alternatives
- · Premium markets for certified agri-products
- Cleanup and remediation services
- Net-zero and carbon negative systems

· Ensuring effective agricultural waste management, land degradation and contamination

- Crop residue value addition (bioenergy, soil amendments, biochar)
- Microbial processes for decontamination
- · Safe disposal of unused product and associated plastic containers



Five key messages



Pollution from lending and investment by banks has **impact materiality** – environmental, social and economic impacts



There are significant challenges accounting for financial costs and risks – data and uncertainty



Impact materiality of pollution creates risks to **financial materiality** that can affect a banks health.



A life cycle approach indicates biggest opportunities spanning upstream (design of systems) and downstream (circular economy principles)



The dynamic of regulatory push and technology pull/consumer preference shapes risk and the **opportunities for eco-innovation** and beyond compliance benefits



Unlocking the sustainable transition for agribusiness



How we can engage the entire value chain to finance agrochemicals reduction?

This report shines a spotlight on agribusinesses:

- the potential role they could play in fostering transformative change in the food system at scale and at pace
- the political and market structures, or "system lockins", that are stifling this potential





50%

Seeds

4 companies control 50% of the market: • Bayer • Corteva • ChemChina/Syngenta • BASF æx

60%

Agrochemicals

4 companies control 60% of the agrochemical market: • Bayer • Corteva • ChemChina/Syngenta • BASE 56

40%

Farm Machinery

4 companies account for 40% of the global sales: • Deere & Company • Kubota • CNH Industrial • AGCO

Trading ->

40%

Traders

10 major traders control 40% of the global market: • Cargill • COFCO Corp • Archer Miller Daviels (ADM) • Wilmar, Bunge • Itochu • Louis Dreyfus Company • Viterra • Olam International • Conagra

Processing ->

34%

Food and Beverage Processors

10 major processors account for 34% of global sales: • PepsiCo, Nestle • JBS, Anheuser-Busch InBev • Tyson • Foods, Mars • Archer Miller Daniels (ADM) • Coca-Cols • Carpill • Danone

Retail ->



10%

Retailers

10 major retailers account for 10% of global sales: • Waimart • Schwarz Group • Kroger • Costoo • Carrefour •

Krager • Costoo • Carrefour • Aldi Sud • Tesco • Seven and I Holdings • Ahold Delhaize • Rewe Group Compared to other sectors, change comes from regulators, innovative finance or emerging companies that disrupt the market (Innovators, Regional leaders & Technology Enablers). To reduce the use of agrochemicals and plastics, we must address the right levers for change

	Food & agriculture	Transportation	Energy
REGULATORS	Changes through subsidies , floor prices and standards (e.g., organic product labels, pesticide regulations), and sector-wide road maps (ie EU farm to fork strategy, deforestation)	Change through subsidies & max. emissions constraints (e.g., subsidies on electric cars, CO2 taxes)	Change through subsidies & bans (e.g., Germany's nuclear power ban)
INVESTORS	After FSS interest has increased, both private sector investments as well as public-private investment & risk solutions. Attractiveness for financial sector remains low, but has the potential to become significant change agent	High investment appetite and high valuations for innovators (e.g., Tesla)	Change through large investments form investors and large national power companies
EXISTING COMPANIES	Increasing interest in change from multinationals (e.g., Nestlé) largely via demand signals. Increasing volatility starts to affect incumbents' businesses. Large incumbents feel pressure from innovators & changing regulation	Large incumbents follow the innovators	Change centralized with multinationals and governments on large energy generation
EMERGING COMPANIES	Role of Innovators & Regional leaders are growing, accelerating the transition: alternative proteins, pest control, technological solutions etc are starting to be serious alternatives,	Innovators/start-ups (e.g., Tesla, NIO, Geely) demonstrate feasibility of tech. and create demand	Few smaller tech players enable some decentralization
	leading market reconfiguration.	Little change Some change Much c	hange SEADA

Source: Expert opinions

Be part of a community that champions safe and sustainable farming

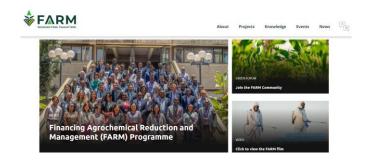
Join the FARM community



Engage in a community space for interaction, collaboration, and learning to jointly reduce the use of harmful pesticides and agricultural plastics.

FARM group at the Green Forum

Get the latest updates



Access news, knowledge resources, and announcements on the field from the programme and beyond.

GEF-FARM.org

Be the first to know and subscribe to our newsletter



Join the FARM mailing list :

Stay up to date with FARM initiatives through newsletters and event invites.

FARM Mailing List



If you are committed to promoting healthier and safer agriculture and food systems, especially in the management of agrochemicals and plastics:



Join our FARM Community of Practices:

- 1. Scan the QR code above or visit the Green Forum homepage.
- 2. Click "Sign up".
- 3. Once a member, you can join the <u>FARM Group</u> by going to the group page and selecting "Join".
- 4. Start sharing your work, connect with like-minded partners, and contribute to peer-learning activities in the group.





THANKS!

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