Agricultural Public
Development
Bank Coalition

Awareness Paper

Integrating Biodiversity into Agricultural and Rural Finance

Agri-PDB
Platform
Agricultural Public Development Bank Coalition

Awareness Note for Public Development Banks (PDBs):

Integrating Biodiversity into Agricultural and Rural Finance

Executive Summary

Public Development Banks (PDBs) play a central role in financing agriculture, rural development, and food systems. Their portfolios are therefore highly dependent on biodiversity - the natural capital base that underpins soil fertility, water regulation, pollination, and climate resilience. Rapid biodiversity loss is not only an environmental issue. It directly increases climate risk, credit risk, portfolio volatility, and economic vulnerability for rural borrowers and the institutions that finance them. At the same time, growing demand for sustainable and climate-resilient food systems is creating new investment opportunities for agriculture-focussed PDBs. Nature-positive agriculture can improve productivity and resilience, open access to premium and deforestation-free markets, unlock blended climate and biodiversity finance, and crowd in private capital.

This paper provides a practical roadmap for PDBs to integrate biodiversity into agricultural and rural finance. It outlines: (1) the case for biodiversity as a core portfolio asset; (2) priority nature-positive investments aligned with the Kunming–Montreal Global Biodiversity Framework and MDB Common Principles; (3) a tiered approach distinguishing greening finance from financing green.

1. Why Biodiversity Matters for Public Development Banks

Public Development Banks (PDBs) represent a unique and influential group of financial institutions. They invest at very large scale and play a catalytic role in national development pathways. In agriculture in particular, agricultural development banks (e.g., FINAGRO, NABARD) are central to food-system transformation as PDBs cover almost two-thirds of formal agriculture financing, filling gaps left by commercial banks. [1]However, despite this scale, biodiversity is still poorly integrated in most PDB operations. The WWF 2023 report "*Public Development Banks and Biodiversity: The Urgency of Transformative Action*[2]" finds that:

- Fewer than 20% of PDBs have biodiversity strategies.
- Only a minority apply biodiversity screening beyond environmental safeguards.
- Most lack dedicated nature-positive financial products.
- Few report publicly on nature-related risks, despite operating in biodiversity-dependent sectors such as agriculture, fisheries, and water management.

1.1 What is Biodiversity and how it affects agricultural profitability

Biodiversity is the diversity of life at genetic, species and ecosystem levels, and the ecological processes that sustain productivity. In agriculture and rural economies, it provides critical

[1] IFAD, *How the Agri-PDB Platform is transforming food systems*, IFAD Explainer (2025), https://www.ifad.org/en/w/explainers/how-the-agri-pdb-platform-is-transforming-food-systems
[2] WWF & The Biodiversity Consultancy.(2021). Public development banks and biodiversity: The urgency of transformative action.

ecosystem services, [3]underpinning yields, input efficiency, stability of production, and the resilience of farms and landscapes to climate shocks. For PDBs financing agriculture, fisheries, forestry and rural value chains, biodiversity is therefore not an "external" environmental issue, but a core driver of borrower cashflows and collateral quality. Key biodiversity-linked ecosystem services with well-established economic value include:

- **Pollination**: The IPBES global assessment estimates the annual market value of crop production directly attributable to animal pollination at USD 235–577 billion. [4]
- **Soil health and fertility**: FAO notes that soils host around a quarter of the planet's biodiversity, and that soil biodiversity underpins nutrient cycling, soil structure and water retention - critical determinants of input needs and yield stability . [5]
- **Water regulation**: Healthy watersheds and wetlands regulate flows, reduce sedimentation, and improve infiltration, reducing production losses from droughts/floods and lowering infrastructure and maintenance costs (e.g., irrigation canals, reservoirs)

The recent IPBES business–biodiversity assessment also highlights that biodiversity degradation increases systemic financial risk by disrupting supply chains, raising input costs and amplifying climate impacts[6]. As biodiversity declines, farmers often compensate through higher fertiliser, pesticide, irrigation and energy use, increasing costs while reducing long-term resilience. For PDBs, these biophysical changes transmit into financial risk channels:

- **Higher credit risk**: greater yield volatility and production losses translate into weaker repayment capacity and higher default probability.
- **Higher restructuring and contingency costs**: more frequent climate and pest shocks increase demand for rescheduling and emergency liquidity.
- **Asset value risk**: land productivity and long-term collateral value can deteriorate where soils, water availability, and ecosystem integrity decline.
- **Strategic portfolio risk**: biodiversity loss is increasingly recognised as a macro-financial issue. For example, WEF analysis highlights that USD 44 trillion of economic value (over half of global GDP) is moderately or highly dependent on nature—with agriculture among the most nature-dependent sectors. [7]

1.2 Climate resilience and biodiversity are inseparable

Climate change and biodiversity loss are deeply interconnected challenges, particularly in agriculture. Most climate risks faced by rural producers (droughts, floods, heat stress, pest outbreaks, and soil degradation) are intensified when ecosystems are degraded. Conversely,

[3] *Ecosystem services* are the benefits that people and economies obtain from ecosystems. They include provisioning services (e.g. food, fibre, freshwater), regulating services (e.g. climate regulation, flood control, pollination, pest and disease regulation), supporting services (e.g. soil formation, nutrient cycling, primary production), and cultural services (e.g. recreation, tourism, cultural and spiritual values).
[4] Potts et al (2016). *Summary for policymakers of the assessment report on pollinators, pollination and food production*. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).
[5] Food and Agriculture Organization of the United Nations. (2020). *Soil biodiversity and its functions in sustainable agri-food systems*. FAO. https://www.fao.org/global-soil-partnership/areas-of-work/soil-biodiversity/en
[6] **IPBES (2026).** *Business and Biodiversity Assessment – Summary for Policymakers.* Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES
[7] World Economic Forum. (2020, January 19). *Half of the world's GDP is moderately or highly dependent on nature, says new report*. World Economic Forum Press Release.

healthy ecosystems act as buffers that reduce exposure and vulnerability to climate shocks. Nature-based solutions play a critical role in climate adaptation:

- **Agroecological and diversified farming systems** have been shown to increase adaptive capacity compared to simplified monocultures [8].
- **NbS (often in green–grey approaches)** can reduce lifecycle costs while increasing development benefits compared with purely "grey" infrastructure

1.3 Expanding Finance and incentives to Unlock Nature-Positive Transitions

The urgency of biodiversity loss, combined with climate imperatives, is reshaping the financial landscape. For Public Development Banks, this creates both a **risk management imperative** and a **strategic opportunity**. As demand grows for climate-resilient, low-impact and traceable production systems, new financing opportunities are emerging at the intersection of biodiversity, climate and rural development, including blended climate–nature finance and results-based mechanisms. While specific financial mechanisms are detailed in Section 3, the key message is that biodiversity is becoming increasingly embedded in how capital is mobilised, priced, and allocated.

At the same time, regulatory and market scrutiny on nature-related risks is accelerating. Therefore, integrating biodiversity early allows PDBs to stay ahead of evolving regulatory requirements, supply-chain due diligence regulations and growing expectations from investors and stakeholders. Aligning with emerging initiatives such as TNFD also provides a practical structure for assessing and communicating nature-related **dependencies, impacts, risks, and opportunities**, improving transparency and investor confidence

2. What PDBs Can Finance: Nature-Positive Agriculture Aligned with the GBF and MDB Principles

The MDB Common Principles for Nature-Positive Finance, provides a shared framework for multilateral development banks to align their investments with nature-positive outcomes. These principles are explicitly aligned with the 23 targets of the Kunming–Montreal Global Biodiversity Framework (GBF), the global agreement adopted by countries to halt and reverse biodiversity loss by 2030 and ensure the sustainable use of biodiversity.

To make this guidance actionable for Public Development Banks (PDBs), nature-positive agriculture and rural investments can be organised into **four complementary activity groups**. Importantly, these groups align with two distinct but complementary roles for PDBs:

- **Activity Group 1** supports **greening finance**—that is, reducing biodiversity-related risks and negative impacts across existing portfolios through safeguards, screening, and improved risk management.
- **Activity Groups 2–4** fall under **financing green**, actively directing capital toward investments that deliver positive biodiversity outcomes, often alongside climate and livelihood benefits.

[8] Dittmer et al. (2023). *Agroecology can promote climate change adaptation outcomes without compromising yield in smallholder systems*. **Environmental Management, 72**, 333–342.

Activity Group	Illustrative Eligible Activities
1. Addressing mitigation risk for biodiversity	• Avoidance of illegal deforestation and habitat conversion • Basic biodiversity screening • Application of exclusion lists and safeguard policies • Screening for proximity to protected or sensitive ecosystems
2. Reduce the Direct Drivers of Biodiversity Loss *Land-use change, overexploitation of natural resources, pollution, climate change impacts, invasive alien species*	• Crop diversification & rotations • Reduced/zero tillage • Integrated Pest Management (IPM) • Sustainable small-scale fisheries (seasonal closures, gear improvements) • Organic inputs, reduced chemical fertilisers • Soil health management (composting, biofertilisers)
3. Restore & Conserve Biodiversity and Ecosystem Services	• Agro-biodiversity conservation (seed banks, heritage varieties) • Native species reforestation & agroforestry • Riparian buffers & vegetative strips • Wetland/watershed restoration • Grassland regeneration & rotational grazing • Floodplain & recharge area protection
4. Enabling Policies, Tools, & Financial Mechanisms	• Deforestation-free & biodiversity-certified value chains • Payment for Ecosystem Services (PES) • Biodiversity credits / natural capital markets • Land tenure strengthening & community governance • Environmental training, information systems & MRV

Figure 1: Nature-Positive Activity Groups for PDBs (Aligned with GBF Targets & MDB Principles)

Box 1: What Enabling Activities Mean in Practice for PDBs
For PDBs, enabling activities rarely generate immediate financial returns but help reduce risk, unlock demand, and improve the bankability of nature-positive investments. This may include co-financing policy-aligned programmes, supporting traceability and certification systems that open access to premium markets, investing in MRV systems for results-based payments, or partnering with IFIs to de-risk early-stage projects. A practical example is the **eco.business Fund** (supported by KfW and partners), which combines technical assistance, standards alignment and credit lines to local banks, helping place over 1.4 million hectares under sustainable management while reducing water use and chemical inputs.

3. A Tiered Approach for PDBs: From Greening Finance to Financing Green

Public Development Banks differ widely in mandate, size, sectoral focus, and institutional capacity. Experience from WWF and other global analyses highlights two complementary pathways through which PDBs can integrate biodiversity into their operations [9]:

1. **Greening finance** – reducing biodiversity-related risks and negative impacts across existing portfolios; and
2. **Financing green** – proactively directing capital towards nature-positive investments.

[9] WWF & The Biodiversity Consultancy. (2021). *Public development banks and biodiversity: How PDBs can align with the Post-2020 Global Biodiversity Framework* (Abridged version). WWF France, Paris.

All PDBs investing in agriculture, regardless of size, should implement **greening finance** measures as a baseline. These actions protect portfolio quality, reduce long-term risk, and align PDBs with evolving regulatory and disclosure expectations. **Financing green** typically requires additional institutional capacity, partnerships, and financial instruments. However, even smaller PDBs can engage through entry-level approaches, with more advanced institutions scaling towards landscape-level investments.

3.1 Greening Finance: Reducing Biodiversity Risk Across Portfolios

Greening finance focuses on **avoiding and reducing harm to biodiversity** while strengthening risk management and portfolio resilience. Specific activities may align with activity groups 1 and 2 in figure 1. Greening finance are often low-cost, build on existing ESG or climate systems, and can be introduced incrementally.

Entry-level actions (basic, low-cost, rapid to implement)

Suitable for smaller or less experienced PDBs

- Introduce **basic biodiversity screening** at project appraisal, such as checks on proximity to protected areas, sensitive ecosystems, or risks of land-use change.
- Adopt or align with **standard exclusion lists**, including no financing of illegal deforestation or conversion of natural habitats. PDBs partnering with IFIs are typically required to align their exclusion lists with IFI standards.
  Begin collecting **minimum biodiversity-relevant data** from clients (e.g. land use, crop/livestock type, input use, water abstraction), using simplified templates that build on existing reporting requirements.

Intermediate actions (systems integration and improved decision-making)

For PDBs with established ESMS or climate risk tools

- Integrate biodiversity more explicitly into **Environmental and Social Management Systems (ESMS)**, including procedures, responsibilities, and mitigation requirements aligned with the mitigation hierarchy (avoid → minimise → restore).
- Apply **spatial biodiversity screening tools** (e.g. IBAT, ABC-Map, national biodiversity maps) early in project design to avoid high-risk locations and reduce costly redesign later.
- Use **portfolio-level risk tools** (e.g. ENCORE, Trase) to identify sectors and geographies with high dependence on, or impact on, biodiversity.
- **Build staff capacity** through targeted training on biodiversity risk, nature-related dependencies, and practical mitigation measures (e.g. land-use change risks, pesticide impacts, water stress).

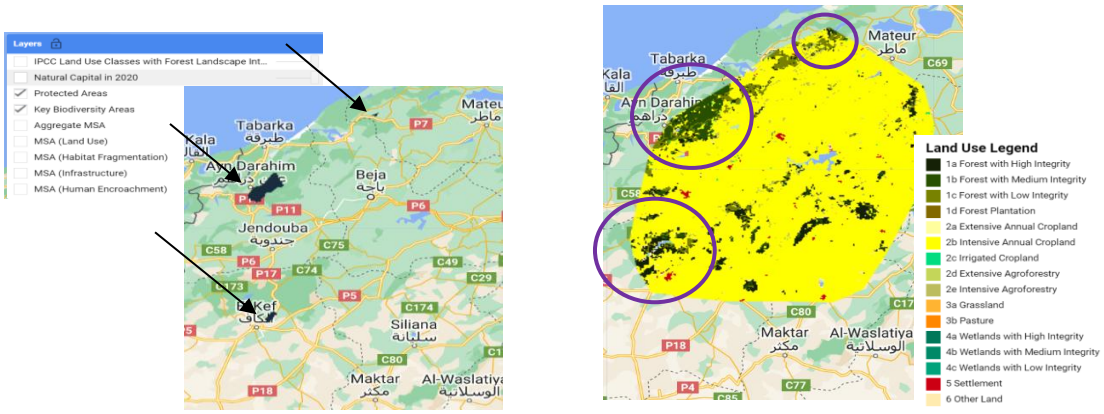

Figure 1: ABC-Map tool for spatial screening of risks to biodiversity

Advanced actions (full risk integration and disclosure)

For larger or more advanced PDBs

- Align risk management and disclosure with TNFD recommendations, assessing nature-related dependencies, impacts, risks, and opportunities across priority sectors.
- Strengthen monitoring through **remote sensing and MRV systems**, tracking land-use change, deforestation alerts, and compliance with biodiversity-related covenants.
- Introduce **biodiversity-linked loan conditions**, such as deforestation-free sourcing, integrated pest management, buffer zones near waterways, or limits on chemical inputs.
- **Develop institutional capacity at scale**, including training-of-trainers programmes for staff on biodiversity risk reduction, agroecological practices, etc.

Outcome

Greening finance reduces credit and reputational risk, protects long-term asset value, strengthens portfolio resilience, improves eligibility for IFI co-financing, and prepares PDBs for evolving ESG, regulatory, and nature-related disclosure requirements.

3.2 Financing Green: Scaling Nature-Positive Investment

Financing green refers to the **proactive allocation of capital to investments that generate positive biodiversity outcomes**. This typically requires stronger systems and financing instruments than basic risk management and may therefore be more challenging for some smaller PDBs. However, many PDBs **are already financing elements of nature-positive investment**, often under climate-smart or adaptation portfolios, without explicitly identifying, tracking, or maximising biodiversity benefits.

In practice, **many climate-smart investments can become nature-positive with limited additional cost**. As the example below shows, a climate-smart irrigation project financing efficient irrigation systems and drought-resistant seeds can deliver additional biodiversity benefits by incorporating cover crops, buffer strips, or soil organic amendments to reduce erosion and improve soil health. Achieving ecosystem-level benefits, such as protecting wetlands, maintaining

environmental flows, or safeguarding groundwater recharge areas, typically requires greater coordination, aggregation of investments, and partnerships at landscape scale.

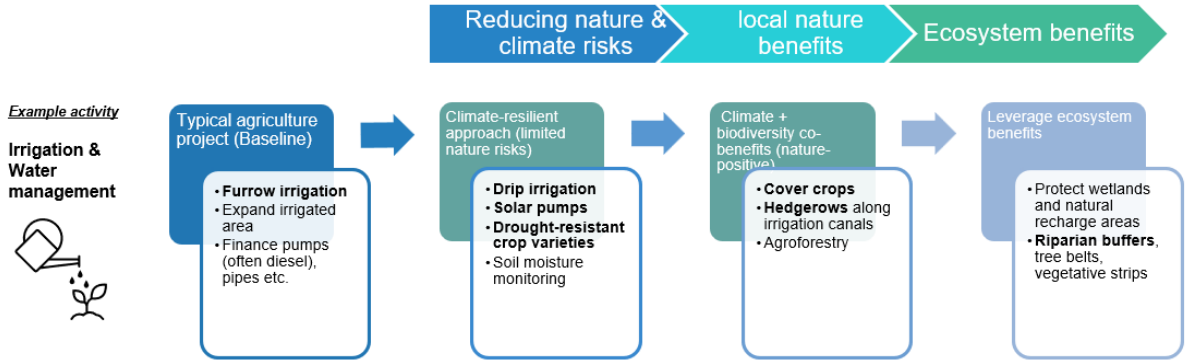

Figure 3: Evolution towards climate-smart and nature-positive irrigation investments

Entry-level financing

Simple products that fit existing agriculture/climate operations (low institutional change)

- **Create "nature add-ons" inside existing agri/climate lending**
  - Add eligibility criteria for nature-positive practices within standard crop/livestock/fisheries loans (e.g., crop rotation/diversification, cover crops, agroforestry elements).
  - Introduce preferential terms (tenor, grace period, pricing step-down) for verified adoption.
- **Pilot targeted credit lines:** Small dedicated credit windows for agroecology / NbS and on-farm resilience (often easiest to start where PDBs already run climate-smart lines).
- **Combine small grants with loans for transition costs:** Use grants to cover training, initial inputs, basic monitoring, certification readiness.

Intermediate financing

De-risking and aggregation and value chains (usually needs IFI/partner support)

- **Build bankable pipelines** by aggregating demand (critical missing piece for most PDBs)
  - Work through farmer organizations/cooperatives/aggregators to bundle small investments into a pipeline large enough for efficient appraisal and supervision.
  - **Support pipeline incubation and pre-investment readiness**, including feasibility studies, landscape planning, farmer mobilisation, and business case development
  - Align pipeline with national priority landscapes and plans.

- **De-risk borrowers and intermediaries**
  - Deploy partial credit guarantees / risk-sharing for SMEs, cooperatives, and MFIs lending into nature-positive upgrades.
  - Offer longer tenors/grace periods where nature-positive investments have longer payback.

- **Bundle finance with technical assistance**
  - Bundle credit with TA for business planning, certification/traceability readiness, producer training, MRV basics (often delivered by IFIs, donors, extension services, or NGOs).
  - Support "transition" investments with TA for large borrowers/off-takers (deforestation-free sourcing, supplier compliance systems).

Advanced financing

Capital mobilisation and landscape transformation (requires strong partnerships and structuring capacity)

- **Investable landscape programmes**
  Develop landscape/territorial programmes bundling sustainable production, conservation/restoration, and livelihoods -linked to national strategies and priority geographies.
- **Blended finance vehicles** (concessional tranches / first-loss / guarantees: Structure vehicles where public/IFI/concessional capital takes first-loss or provides guarantees, enabling commercial investors to participate.
- **Capital markets instruments**: Issue green / sustainability-linked / nature bonds tied to credible land-use/biodiversity KPIs (requires strong frameworks and reporting).
- **Performance-based revenue streams:** Enable PES / carbon / emerging nature credit approaches where integrity and MRV are strong, to generate supplemental cashflows (must be part of a larger landscape programme rather than stand-alone farm loans).
- **Public–private partnerships (PPP)** at landscape/value-chain scale: Co-invest with off-takers, utilities, insurers and impact funds to share risks and align incentives across the territory.

Outcome

Financing green enables PDBs to diversify portfolios, access new concessional and blended climate–nature funding windows, and crowd in private capital through stronger investment cases. It can unlock new revenue streams linked to value-chain premiums, sustainability-linked finance and ecosystem service payments, while strengthening client resilience and long-term asset performance

Example (PDB partner)	What it finances	How the finance structuring works	Evidence of results / performance

eco.business Fund (KfW as lead public investor/partner)	Sustainable agriculture, forestry, fisheries, and nature-positive rural SMEs via local financial institutions (LATAM + SSA).	Blended fund structure: public investors (incl. KfW/EU and others) provide cornerstone capital; the fund on-lends (private debt instruments) via partner banks/financing institutions, often paired with advisory/capacity building to improve pipelines and ESMS.	Reported impacts include 1.4M ha under sustainable management, 31M m^3 water saved, 8.5M tCO_2 stored (net), and reduced herbicide use.
&Green Fund (FMO as Dutch public development bank, backed by GCF + others)	Deforestation-free commodity supply chains (e.g., cocoa, palm oil, soy, cattle), with explicit forest/biodiversity objectives in key tropical countries.	Concessional/catalytic capital + commercial capital: GCF provides large-scale funding through FMO to unlock/crowd-in private capital; fund invests in "front-runner" companies and embeds transition plans/conditions (e.g., NDPE, traceability, forest protection).	- $156m capital deployed, - >3.1M ha protected; fund also positions itself as offering "downside-protected" opportunity to commercial investors.
IDB "Amazonia Bond" programme	Nature-based and livelihood investments linked to Amazon conservation/sustainable development ("Amazonia Forever").	Use-of-proceeds bond: IDB issues a labelled bond (investors receive a market coupon/return) and allocates proceeds to eligible Amazonia projects under published guidelines; designed as a scalable issuance programme (up to a stated target).	First issuance reported at US$100m with a stated coupon, and an ambition to scale.

Figure 4: Example of PDBs engagement in landscape financing structures

Conclusion: From Risk Management to Opportunity Creation

Biodiversity loss is no longer a peripheral environmental issue for Public Development Banks. It is a core financial, climate, and development risk, but also a growing source of opportunity. As this note shows, integrating biodiversity into agricultural and rural finance strengthens portfolio resilience, unlocks new value chains, and positions PDBs to mobilise public and private capital at scale in support of national and global goals.

The pathway forward does not require a one-size-fits-all approach. Instead, PDBs can integrate biodiversity in alignment with their mandate and capacity:

- **All PDBs,** including smaller institutions, can start by greening finance: introducing basic biodiversity screening, aligning exclusion lists, collecting minimal data, and strengthening ESMS. These actions are low-cost, immediately reduce risk, and improve eligibility for IFI partnerships and TNFD-aligned disclosure.
- **Mid-sized PDBs** can adopt more complex "financing green" solutions, such as introducing biodiversity-linked loan conditions, and more systematically integrating biodiversity into ESMS and capacity building. They can also move beyond risk

mitigation to **pilot financing green**, through dedicated agroecology or NbS credit lines, preferential loan terms, guarantees for SMEs, and bundled technical assistance, often in partnership with IFIs and national agencies.

- **Larger and more advanced PDBs** can lead system-wide transformation by mobilising capital for **landscape-scale programmes**, blended finance vehicles, nature bonds, PES schemes, and emerging carbon and biodiversity markets.

By combining **greening finance** with **financing green,** and operationalising these through partnerships that build pipelines, blend capital, and bundle services, PDBs can play a decisive role in halting biodiversity loss while delivering climate resilience, rural livelihoods, and sustainable economic growth.

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