

# WHAT COUNTS AS GREEN IN AGRICULTURE

## REFRAMING CROP PROTECTION AS AN INVESTABLE ASSET CLASS



India's agriculture sector remains central to economic stability, livelihoods, and food security. The sector contributes nearly 18% to GDP and supports over 40% of the workforce, while sustaining steady growth of around 5% annually between FY2017 and FY2023, driving it into centre of India's climate transition, with significant capital interest. Global investors and development finance institutions are seeking credible and scalable green assets in emerging markets, and agriculture presents a significant opportunity. Financial flows to sustainable agriculture have remained high at over US \$234 million annually in recent years, yet growth has been limited; a signal that

capital is available but not reaching the right segments.

One of the most critical of those segments is crop protection. India is estimated to lose 15-25% of crop yields annually to pests and diseases, with losses expected to increase as climate change alters pest cycles and expands their geographic spread. Yet, crop protection remains largely absent from green finance frameworks, overshadowed by more easily classified priorities such as solar irrigation, micro-irrigation, and water-use efficiency, which dominate green bond allocations. The case for reframing crop protection as a climate-smart investment category is both straightforward and overdue. The fact that it has not happened yet reflects how green

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finance frameworks tend to be built (around what is easy to measure, classify and translate into financial language and metrics).

### Why capital is not reaching crop protection

In practice, green agri-finance in India has concentrated around a narrow set of themes such as solar irrigation, micro-irrigation and water-use efficiency, whereas crop protection remains largely absent. A more complete approach to agricultural sustainability requires closer attention to crop protection, given that it directly influences yield stability, farm incomes, and the ability of farmers to manage climate-linked risks. As weather variability increases, pest outbreaks are becoming more frequent and less predictable, making crop protection a critical lever for adaptation as well as productivity.

The significance of the omission of crop protection extends beyond yield losses. Rising agrochemical use is contributing to soil degradation, resistance build-up, and growing regulatory scrutiny. These compounding pressures make the transition to climate-smart crop protection a financial imperative, where, without intervention, the credit quality of agri-lending portfolios is itself at risk.

Adoption of climate-smart crop protection remains constrained by a set of structural financing barriers. NBFCs continue to fund conventional solutions as they are standardised, widely understood, and embedded within existing value chains. In contrast, climate-smart alternatives often involve higher upfront costs, fragmented supply chains, and uncertain demand, making them harder to scale through traditional lending models.

A key barrier lies in classification ambiguity. Many climate-smart crop protection activities do not clearly align with existing ICMA and SEBI green bond frameworks, limiting the ability of lenders to categorise these exposures as green. This restricts their inclusion in GSS+ bond portfolios and reduces incentives for financial institutions to prioritise such lending. Moreover, this

## There is a clear opportunity to align financing structures with measurable sustainability outcomes



also creates a disincentivising structure where lending for activities that can be clearly labelled and counted towards green portfolios is favoured.

Investor perception further compounds the challenge. Crop protection is often associated with hazardous pesticide use, leading to caution among issuers when considering its inclusion in labelled instruments. Without clear differentiation between conventional and climate-smart practices, the entire category risks exclusion. Measurement is also a barrier as unlike sectors such as renewable energy, where outcomes are easily quantifiable, the benefits of improved crop protection such as reduced chemical intensity or enhanced soil health are more complex to standardise and verify.

These challenges result in a persistent financing gap in a segment that is central to climate adaptation in agriculture. Addressing this gap will require clearer definitions, improved measurement approaches, and a reframing of crop protection as a climate-smart investment category.

### Building a Bankable Pipeline

A key priority is the development of a clear and unified taxonomy for sustainable agriculture, aligned with India's evolving climate finance taxonomy. Establishing standardised definitions for activities such as precision application, biopesticides, and integrated pest management can enable consistent classification, reduce ambiguity, and support the inclusion of crop protection within green and GSS+ frameworks. This effort

would need to be anchored by public institutions such as the RBI and NABARD, with inputs from financial institutions and market participants, in order to unlock capital for under-financed segments like crop protection and enable better monitoring of financial flows and identification of priority interventions. Additionally, upcoming frameworks such as the National Adaptation Plan may also bring further clarity to the sector.

Strengthening asset performance is equally important for improving credit quality and investor confidence. Bundled models that combine financing with advisory services, pest monitoring, and input optimisation have a strong potential in India. For instance, DeHaat integrates credit with agronomic AI-driven advisory and input delivery, leading to higher yields and improved farmer repayment behaviour. It has expanded to serve 1.8 million farmers across 12 states, delivering over 7 million agricultural services. Such models demonstrate how better on-ground outcomes can translate into more robust lending portfolios.

There is also a clear opportunity to align financing structures with measurable sustainability outcomes. Linking lending terms to indicators such as reduced chemical intensity or adoption of integrated pest management practices can strengthen impact credibility. Globally, Olam International has implemented sustainability-linked financing tied to environmental performance metrics in agriculture, which has improved transparency and attracted green focused investors.

### Unlocking the Next Layer Of Green Capital

The expansion of green agri-finance markets presents a clear opportunity. By directing proceeds into climate-smart crop protection, NBFCs can diversify their green portfolios while aligning with global standards. More importantly, this approach channels capital into a segment that directly addresses agricultural risk. As climate change intensifies pest pressures and increases yield volatility, the role of sustainable crop protection will become more central to resilience.