Biodiversity Management

in

REEL Programmes

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1. Introduction

Biodiversity is a foundational element of sustainable and regenerative cotton production. Both the REEL and REEL Regenerative Standards integrate biodiversity requirements to protect sensitive ecosystems, enhance ecosystem services, and build resilience into farming systems.

CottonConnect has set a **target to train more than 90% of REEL Programme farmers on biodiversity-focused regenerative practices by 2030**, while also establishing systems to track, restore, and enhance biodiversity through farm-level actions, community initiatives, and landscape-level collaborations.

2. Key Requirements

REEL Standard

- **Restoring Unproductive Land (6.3.1):** Farmers must not convert unproductive land into cotton fields; instead, they must implement restoration measures such as planting native vegetation. Farmer groups must contribute to tree plantation drives in their localities, including cotton trees.
- **Buffer Zones (6.2.1 & 6.2.2):** Farmers must maintain buffer zones around ecologically sensitive areas (e.g., water bodies, natural habitats), restore degraded/naked buffers through reforestation, and respect safe distances from roads and human settlements when applying chemicals. Where distances cannot be maintained, vegetative buffers must be established.
- **Agrobiodiversity (6.4.1):** Farmers must diversify their production systems through intercropping, cover crops, and border crops, improving both environmental sustainability and economic resilience.

In addition to the above, the REEL Regenerative Standard also requires:

- **Sensitive Area Conservation (6.1.1.4):** Farmers must identify and conserve sensitive areas of high biodiversity, natural vegetation, fauna, soil, and water near cotton farms.
- **Wildlife Awareness (6.1.1.5):** Farmers must be provided with a list of native wildlife species, with emphasis on identifying vulnerable, endangered, or critically endangered species (IUCN Red List).
- **Multifunctional Agroforestry (6.4.1.4):** Agroforestry systems that integrate trees with crops/livestock must be actively promoted, providing food, income diversification, and ecological benefits.

- **Native Species Nurseries (6.4.1.5):** A nursery of native tree and plant species must be established or identified for restoration activities.
- **Climate Change Mitigation (6.4.1.6):** Climate-smart practices must be identified and implemented to strengthen mitigation and adaptation.

3. Data Collection and Monitoring

The following measures[1] are recommended for tracking and managing biodiversity in the project areas.

- **Plant Diversity:** Number and type of plant species per hectare (applicable for agroforestry initiatives), with emphasis on locally relevant cover crops, intercrops, and border crops.
- **Tree Sapling Regeneration:** Sapling survival per hectare as a measure of agroforestry and restoration progress for focussed projects
- **Pollinator Presence:** Monitored using Polly bioacoustics devices and farmer/community observations.
- **Crop Diversity:** Tracking number of crops harvested and extent of diversification.
- **Wildlife & Endangered Species:** Identification and preservation of native species, with training on IUCN Red List categories.
- **Invasive Species:** Monitoring and management of invasive flora and fauna that disrupt local ecosystems.
- **Farm-Level Biodiversity Registers:** Maintained for sampled farms to record species, practices, and ecological outcomes.

4. Programme-Level and Community Interventions

4.1 Farmer Training & Capacity Building

- Train 90%+ of farmers on regenerative practices focused on biodiversity (cover cropping, intercropping, buffer management, preserving beneficial insects, improving soil health, promoting bio-inputs etc).
- Provide specific training on endangered species identification, multifunctional agroforestry, and climate-smart agriculture.
- Farmers are provided with list of invasive species and beneficial insects for tracking and management / preservation

[1] May differ based on nature of the project and regional context and availability of resources

4.2 Farm-Level Actions

- Adoption of locally relevant cover crops, intercrops, and border crops to enhance diversity and soil health.
- Establishing buffer zones with natural vegetation around water bodies, sensitive habitats, and roads.
- Promotion of bird perches and habitats to encourage natural pest control.
- Encouraging beneficial insects through reduced chemical use and increased floral diversity.

4.3 Community-Level Initiatives

- Tree plantation drives, seed-ball campaigns, and afforestation led by Producer Groups.
- Establishment of native plant nurseries for use in agroforestry and restoration.
- Habitat restoration projects in degraded lands and ecological buffers, in partnership with communities.
- Joint programmes with Government authorities for restoration of degraded landscapes, water conservation, and afforestation.

4.4 Brand-Supported Initiatives

- Implementation of brand-funded biodiversity projects with a focus on nature-positive outcomes (e.g., ecological monitoring).
- Collaboration with brands to scale innovative pilots, including biodiversity monitoring technologies and landscape-level restoration projects.

4.5 Ecological Restoration and Compensation

- Promote restoration of unproductive land through natural regeneration, tree plantation, and soil rehabilitation.
- Ecological buffers and degraded zones actively restored through community-led reforestation and protection from grazing or human interference.
- Invasive species managed and controlled to allow native biodiversity to thrive.

4.6 Ecological Restoration and Compensation

- Engage Technical Experts and Research Institutions for guidance on invasive species management, promoting beneficial insects and agroforestry models.
- Civil Society and Local Communities to protect endangered species, restore degraded ecosystems, and promote awareness on biodiversity stewardship.

5. Reporting and Verification

- **Annual Impact Reporting:** Biodiversity data integrated into the CottonConnect Impact Report.
- **Verification:** Certification bodies review documents in light of field practices
- **Hotspot Identification:** Mapping and analysis of biodiversity hotspots and degraded zones for prioritised intervention.
- **Adaptive Management:** Continuous refinement of biodiversity actions based on monitoring data, stakeholder input, and scientific recommendations.

Expected Outcomes

- Farms show measurable increases in **plant and crop diversity**, with adoption of cover crops, intercrops, and border crops.
- **Pollinator populations and beneficial insects** are actively tracked and supported through improved habitats.
- **Sensitive ecosystems and endangered species** are identified, preserved, and restored.
- **Tree plantations and sapling regeneration** increase canopy cover and carbon sequestration.