



Consortium for
Agroecological
Transformations

LANDSCAPE TRANSFORMATION PROFILES

Agroecological Pathways from Eleven Landscapes



About

The Consortium for Agroecological Transformations (CAT) is an ecosystem orchestrator advancing community-led, landscape-based agroecological transitions across India toward sustainable, climate-resilient, and equitable food systems. Anchored in the belief that agroecology is the most effective pathway to address the crises of soil degradation, water scarcity, biodiversity loss, farmer distress, and climate vulnerability, CAT is a multistakeholder platform that unites actors across civil society organisations, research institutions, farmer-producer organisations (FPOs), market players, funders and the government to catalyse agroecological transitions.

CAT is developing **landscape-based investment plans** for 11 regions in India to support an orbital shift toward mainstreaming agroecology. Under this approach, a landscape is defined as an administrative block or a sub-section of a block comprising multiple Gram Panchayats. This is considered to be the minimum viable unit for planning and action. The landscape here is not only a contiguous area with shared geographical features, but also a governance and planning unit in which multiple actors, including farmers, institutions, markets, and governments, need to synergise effectively.

Recognising that these transitions cannot happen overnight and are essentially long-term efforts, these plans lay a framework for investment to achieve transformation through sustained support from catalytic funding.

What does transformation look like? The hence envisioned landscape-based agroecological transformation is guided by six broad goals:

1. Improve the quality and resilience of natural resources, including soil, water, flora, and fauna.
2. Increase farm incomes and make agriculture a viable and attractive livelihood, particularly for youth.
3. Preserve and enhance biodiversity and ecosystem services.
4. Improve the well-being of smallholder farmers, women, and landless agricultural workers.
5. Enhance food and nutrition security at the household and community levels.
6. Contribute meaningfully to climate mitigation and adaptation.

What do we have here? A window into each of our landscapes. The landscape-based investment plans present a comprehensive, place-based investment and implementation framework comprising interventions to promote agroecology across an array of domains. Each plan has been developed in close collaboration with a landscape partner, an anchoring civil society organisation, drawing on its long-standing engagement with local communities and its understanding of the landscape's unique social, ecological, and institutional context. This publication introduces these landscapes, the key problems faced in each, and the transformation priorities for each landscape, its community, and other social and ecological actors. As this publication presents landscape-level snapshots, certain data points may not always be available at the exact planning-unit scale; where necessary, relevant indicators have been carefully drawn from or extrapolated using the closest available block- or district-level data.



Ahwa

Dang district, Gujarat

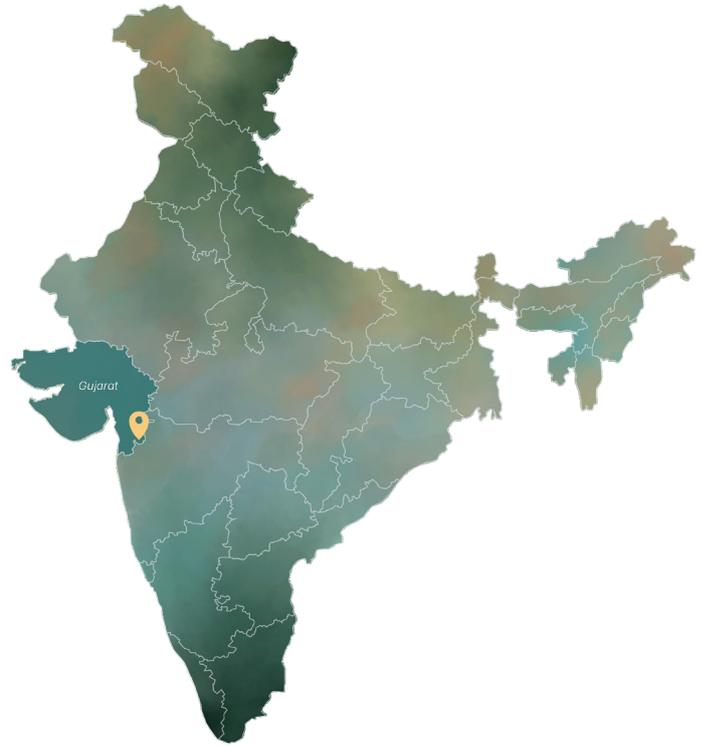
Geographical area
35,000 Ha

Total Population
50,000

Inhabited Villages
65

Households
10,000

The Ahwa Block is a predominantly tribal landscape located in the Dang district of Gujarat, and forms part of the ecologically sensitive Western Ghats–Satpura hill system. The landscape is characterised by undulating highlands, narrow valleys, and isolated plateaus, hilly terrain, dense forest cover, and a network of seasonal streams originating in high-rainfall zones. Its undulating topography, basaltic geology, and heavy monsoonal precipitation make it ecologically significant but highly constrained for irrigation-led agriculture. Livelihoods are closely linked to rainfed farming, forests, and seasonal migration. The agroecological pathway for Ahwa is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Northern Hill Zone of Gujarat (Zone XIII), South Gujarat heavy rainfall area (GJ-1), influenced by the Western Ghats; humid to sub-humid monsoon climate with high rainfall and pronounced seasonality

Land Types



Ecosystem Types



Land Holding pattern



Key Landscape Challenges

1. Persistent **livelihood and ecological constraints** due to its hilly terrain, high forest dependence, and rainfed agriculture.
2. Predominantly **monsoon-dependent farming with limited irrigation** results in single-season cropping, low productivity, and high vulnerability to rainfall variability.
3. Steep slopes, high runoff, and fragile soils lead to **soil erosion, nutrient loss, and degradation of agricultural and common lands**, reducing long-term land productivity.
4. Livelihood options are narrow and largely seasonal, driving **distress migration**, weakening local labour availability for agriculture and allied activities.
5. **Marginal landholdings, poverty, and limited access to technical services** constrain households' capacity to invest in resilient farming systems and diversify livelihoods.

Landscape Transformational Priorities

1. **Build diversified, locally rooted livelihood systems** that strengthen food and nutrition security for tribal households while conserving forest and hill ecosystems.
2. **Strengthen rainfed farming through agroecological practices**, soil and water management, and diversification over intensification to reduce climate risk.
3. **Promote low-risk, resource-conserving strategies** integrating agriculture, livestock, forest-based activities, and homestead production.
4. **Women and smallholders as key agents** through strong institutions, access to knowledge, and local livelihood services.
5. **Increase incomes, reduce distress migration**, and ensure sustainable natural resource use across the Ahwa landscape.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Strengthening traditional seed conservation and crop diversity

Through community-managed, farmer-led seed systems. To protect agrobiodiversity and strengthen climate resilience.

Strengthening integrated crop development and value chains

To stabilise yields, improve quality, and enable market-linked surplus through cluster- and block-level FPOs.

Promoting a modified Wadi model

To diversify farm income, enhance biodiversity, and strengthen climate-resilient livelihood assets for small and marginal farmers

Promoting vegetable cultivation

To diversify livelihoods, enhance nutrition, and improve market-linked income opportunities

Forestry & NTFP



Promoting community-led plantation of native forest species on forest and common lands

Through MGNREGA to restore biodiversity and strengthen access to non-timber forest produce (NTFPs).

Livestock Management



Scaling backyard poultry

Indigenous breeds to improve household nutrition, generate supplementary income, and strengthen women-led livelihoods.

Strengthening goat rearing

Pashu Sakhi-led model units, and FPO-managed revolving funds to overcome subsidy and access barriers for poor households and support diversifying the livelihoods

Biodiversity



Establishing a biodiversity register and community volunteering programme

To document, monitor, and strengthen agriculture-relevant biodiversity and ecosystem services.

Natural Resource Management



Facilitating GPDP planning and implementation

Using a ridge-to-valley approach to strengthen integrated natural resource management across villages.

Implementing decentralised irrigation systems

Lift- and diversion-based solutions, to improve water access, stabilise production, and support agroecological livelihoods.

Nutrition



Implementing community-based nutrition education

In schools, via awareness campaigns, and frontline worker training to improve food choices and nutrition outcomes.

Energy



Introducing dairy-linked biogas units

To provide clean energy, reduce fuelwood dependence, and support circular nutrient use in agroecological farming systems.

Institutional Strengthening



Strengthening Farmer-Producer Organisations

To support aggregate, process, and market agricultural, livestock, and NTFP products, improving price realisation and market access for tribal farmers.

Knowledge Building



Strengthening local agroecological extension

Training CRPs, Prakrutik Krishi Sakhis, and Pashu Sakhis to improve last-mile outreach, farmer handholding, and knowledge transfer across agriculture and livestock.

Establishing village-level Farmer Field Schools

Led by CRPs and Prakrutik Krishi Sakhis to enable hands-on, peer-based learning and demonstration of agroecological practices.

Chitrakonda

Chitrakonda block, Malkangiri district, Odisha

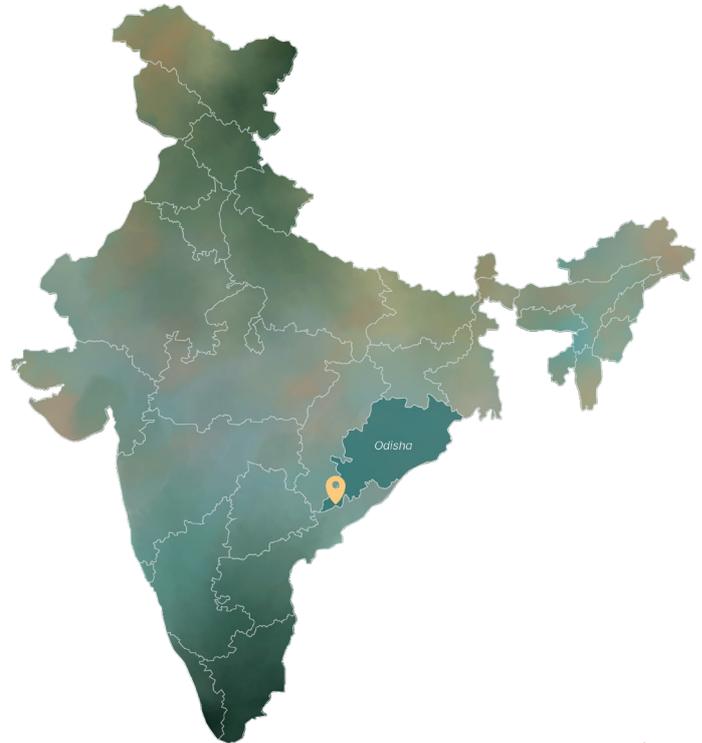
Geographical area
1,02,880 Ha

Total Population
62,739

Inhabited Villages
267

Households
14,568

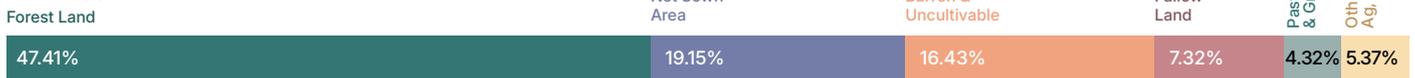
Characterised by steep hills, dense forests, and rich biodiversity, the area features a unique terrain drained by the Sileru, Sabari, and Machkund rivers. Land use here is heavily skewed toward natural cover, with forests and water bodies accounting for a large share of the area. Historically known as the "Cut-off Area" due to its severe isolation by the Balimela Reservoir, the region is currently undergoing significant transformation. Livelihoods are shifting from traditional Podu cultivation to settled farming, and the Odisha government is placing strong emphasis on development following the construction of the strategic Gurupriya Bridge. The agroecological pathway for Chitrakonda is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Eastern Plateau and Hills Region, The landscape falls within the Southern Eastern Ghats, under Agro-Climatic Zone VII (Eastern Plateau and Hills Region) as classified by the Planning Commission. The area receives an average annual rainfall of 1279.12-1553.73 mm.

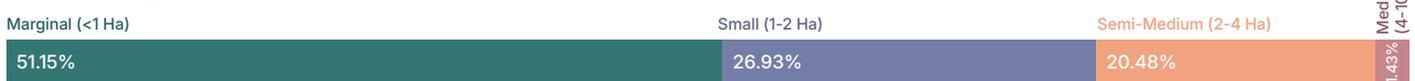
Land Types



Ecosystem Types



Land Holding pattern



Key Landscape Challenges

1. Steep slopes and **erratic rainfall cause severe erosion**, limiting agriculture to a single rainfed season.
2. Decades of **geographic isolation** by the Balimela Reservoir continue to hinder market access despite recent improvements in connectivity.
3. Over **95% of households live in poverty**, trapped in subsistence cycles with no financial capacity to invest in farm improvements.
4. **Marginal landholdings constrain food security**, while minimal wildlife disturbances add occasional uncertainty to livelihoods

Landscape Transformational Priorities

1. Build a **climate-resilient, nutrition-secure** tribal agrarian system that prioritises diversified, low-input food production over high-input monocultures to reduce poverty within ecological limits.
2. **Restore soil fertility** and arrest erosion on sloping lands by scaling agroecological practices, indigenous seed conservation, bio-inputs, and expanded watershed infrastructure.
3. Promote integrated farming systems to **enhance incomes and food security**, fostering self-esteem and reducing distress migration through improved natural resource productivity.
4. Build on community rights over forest lands (CFR/IFR) and agroforestry to **sustain biodiversity** and NTFPs, **reducing pressure** on natural forests via productive tree-based systems.
5. **Empower women and youth** as change agents through **strengthened FPOs and scheme convergence**, ensuring local control over resources to meet food and fodder needs sustainably.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Poly-cropping & Rice Fallow

Transition from monocultures to pulse, millet, and turmeric-based poly-cropping - introducing short-duration Rabi pulses in rice fallows to optimise residual moisture and cropping intensity.

Bio Resource Centres

Build a self-enabling local ecosystem for bio-input production, ensuring chemical-free farming and input self-sufficiency.

Organic Value Chains

Facilitate organic certification for niche markets and institutional supply, along with organic vegetable clusters and fruit orchards (Cashew, Mango, Banana) for year-round income and nutrition.

Natural Resource Management



Silvicultural Agroforestry on Uplands

Rejuvenate degraded forests using farmer-preferred species for fuel and fodder, supported by community nurseries to provide a local supply of high-quality planting materials.

Water & Watershed

Harness mountain streams via gravity-flow and solar-lift irrigation. Implement ridge-to-valley measures (contour bunds, trenches, farm ponds) to control erosion and enhance groundwater recharge.

Integrated Ponds

Transform farm ponds into integrated units to optimise water utilisation and support allied production systems.

Livestock Management



Integrated Backyard Farming

Combine poultry, small ruminants, and vegetables at the household level to diversify income, recycle nutrients.

Health & Housing

Train "Prani Mitras" for decentralised veterinary care. Construct improved goat shelters.

Institutional Strengthening



Build FPO Capacity

For aggregation, processing, and collective marketing. Support entrepreneur-run Bio-Resource Centres.

Knowledge Building



Breeder Seed Models

To conserve indigenous landraces

Agroecology Education

Integrate agroecology into school curricula and lead community nutrition campaigns targeting women's groups and youth to address malnutrition and promote resilient dietary habits.

Energy & Infrastructure



Renewable Processing

Deploy solar- or hybrid-powered units for primary processing and cold storage at local markets. Promote mobile, tractor-mounted processing units to provide essential services at the doorstep.

Establish Decentralised Custom Hiring Centres

Provide site-specific small equipment to reduce farm drudgery and enhance operational efficiency for smallholders and tenant farmers.

Dantewada

Dantewada block, Dantewada district, Chhattisgarh

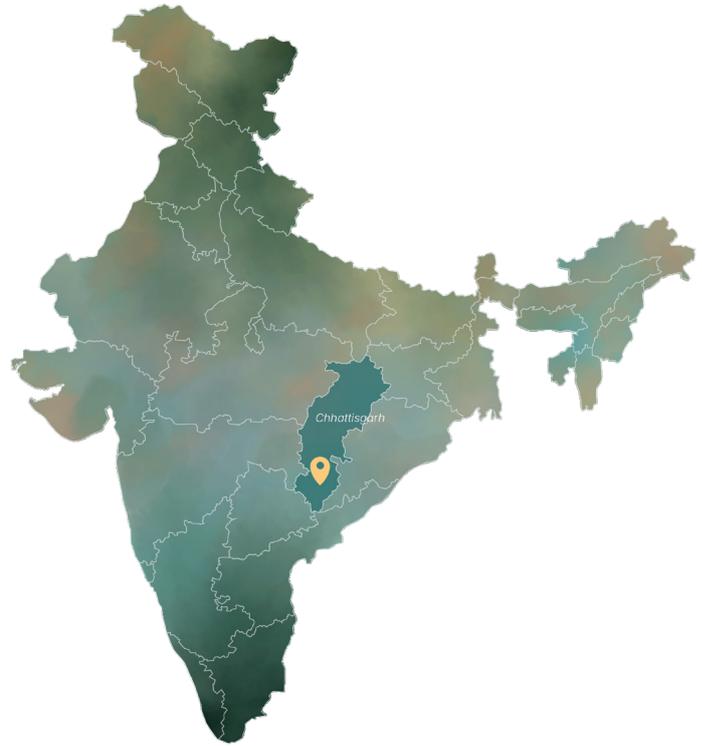
Geographical area
58,428 Ha

Total Population
94,351

Inhabited Villages
64 (Including 4 uninhabited)

Households
13000

The Dantewada block in Chhattisgarh's Bastar Plateau features highly undulating terrain (elevation of about 50–1,025 m) with hills, valleys, plateaus, forests, and rivers. It is predominantly rural and tribal, home to Gondi, Madiya, Muriya and Halba communities. Farming is mostly rainfed on lateritic, yellow clay, sandy loam and black soils. Dantewada is a national leader in organic farming, with 110 villages under Large Area Certification, and supports rich NTFP-based livelihoods from mahua, tamarind, tendu leaves and diverse indigenous crops. The agroecological pathway for Dantewada is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Bastar Plateau agroclimatic zone, part of the Eastern Plateau & Hills region. Sub-humid to semi-humid climate with hot summers and moderate rainfall.

Land Types



Ecosystem Types



Land Holding pattern



Key Landscape Challenges

- Water scarcity and minimal irrigation** (only 2.33% of the cropped area irrigated) keep agriculture highly monsoon-dependent, limiting diversification and year-round cultivation.
- Climate variability**—erratic, delayed and heavy rains with prolonged dry spells—disrupts sowing, damages crops and undermines NTFP quantity and quality.
- Undulating terrain, intense monsoons and light soils drive **severe erosion**, nutrient loss and declining crop productivity.
- Weak storage, processing**, and road connectivity cause post-harvest losses, distress sales, and limited market access.
- The high Multi Dimensional Poverty Index (MPI) of 0.135, nearly double the rural state average, signals **deep socio-economic vulnerability** and poor access to basic services.

Landscape Transformational Priorities

1. Shift Dantewada from rainfed, single-season paddy monoculture to a **climate-resilient, water-efficient, diversified** agroecological system.
2. **Reinforce agrobiodiversity** by strengthening Indigenous seed systems and reviving traditional millets and pulses.
3. **Enhance incomes to arrest migration** in the landscape.
4. Integrate livestock and NTFP value chains **to reduce climate risk and improve household nutrition and incomes.**
5. Deepen agroecology through **green manuring, women-led bio-input enterprises and digital weather advisories.**
6. Reduce post-harvest losses and enhance incomes through improved value chains.
7. Enable women and tribal communities to **lead biodiversity-friendly, community-owned transitions** via SHGs, bio-resource centres, NTFP value addition and collective marketing.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Integrated Organic Paddy Production Systems

Enhance the productivity of 20+ indigenous paddy varieties through improved practices like SRI, line transplantation, and bio-input application while maintaining organic certification and cultural preferences.

Initiating Second and Third Cropping Cycles

Utilise residual soil moisture and expanded irrigation to introduce pulses (chana, moong, kulthi), oilseeds (mustard), and vegetables, breaking the rice-fallow pattern and improving soil health.

Lift Irrigation

Provide lift irrigation systems on rivers/streams in rainfed/water-scarce areas, enabling multiple cropping, reducing crop failure risk, and improving farm incomes.

Green Manuring with Dhaincha/Sun Hemp

Regenerate soil organic carbon and fertility through green manuring, reducing chemical dependency and enhancing moisture retention in upland and midland areas.

Nutrition



Promotion of Nutri-Millets & Vegetable Cultivation

Address household nutritional insecurity by promoting the cultivation of traditional millets (kodo, kutki, ragi) and vegetables in upland areas and baadi plots for consumption and market sale.

Natural Resource Management



Landscape-Level Soil & Water Conservation

Control soil erosion and enhance groundwater recharge through contour bunds, check dams, farm ponds, and watershed interventions in upland and midland areas with undulating terrain.

Restoration of Commons & Forest Fringes

Regenerate degraded grazing lands and forest interfaces through community forest rights management, fodder plantation, and sustainable grazing practices supporting livestock livelihoods.

Knowledge Building



Strengthening Jaivik Karyakartas Network

Expand the cadre of community resource persons providing last-mile technical support, training farmers on agroecological practices, and facilitating adoption across 60 villages.

Agroforestry & NTFP



Mahua Seedling Plantation & Net Provision

Strengthen household livelihoods through mahua seedlings plantation on private lands and provision of nets, supporting culturally significant NTFP collection.

NTFP Value Addition & Processing

Enhance income from mahua (flower/seed), tamarind, and tendu leaves through processing units, quality improvement, and market linkages via Bhoomgaadi FPC, benefiting households engaged in NTFP collection.

Livestock Management



Strengthening Small Ruminant & Cattle Management

Support households rearing goats and cattle through improved breeds, veterinary services, fodder development, and cattle shed improvements, with urine collection for bio-inputs.

Azolla Cultivation for Livestock Fodder

Address fodder scarcity by cultivating Azolla as a protein-rich livestock feed, reducing grazing pressure on commons and supporting year-round livestock nutrition.

Institutional Strengthening



Strengthening Bhoomgaadi FPC & Market Linkages

Build the capacity of Bhoomgaadi FPC for aggregation, processing, and marketing of organic produce supported by godowns, processing infrastructure, and certification support.

Women-led Bio-Resource Centres (BRCs)

Establish community-owned enterprises managed by SHG members for the production and sale of bio-inputs (Jeevamrit, neem oil, compost), ensuring the availability of low-cost organic inputs at the village level.

Market Development



Post-Harvest Infrastructure & Cold Storage

Reduce post-harvest losses and distress sales by establishing dry godowns, cold storage facilities, and drying yards for horticultural produce and paddy.

Dharashiv

Dharashiv Block, Dharashiv District, Maharashtra

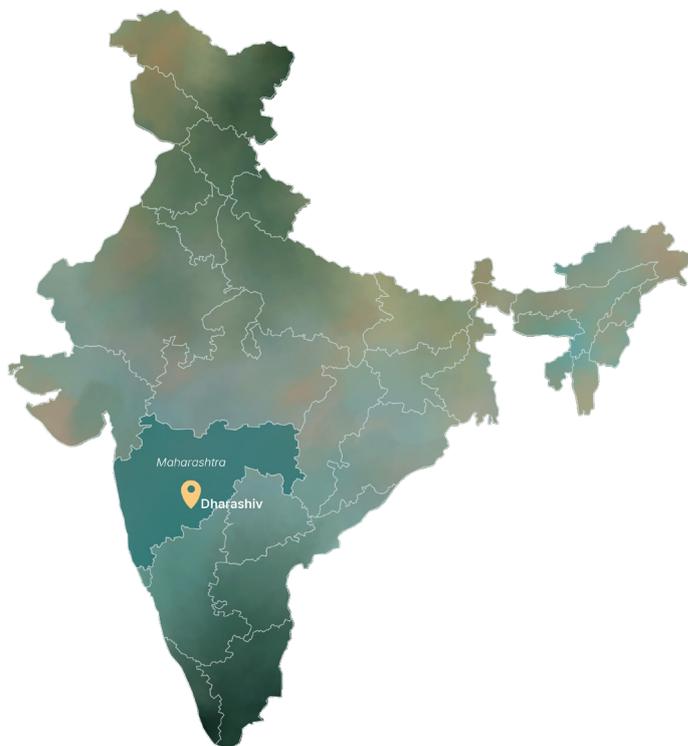
Geographical area
1,32,615 Ha

Total Population
75,656

Inhabited Villages
50

Households
16,707

The landscape is a predominantly rural block located at the administrative core of Dharashiv district (formerly Osmanabad) in the Marathwada region of Maharashtra. It lies in the hot semi-arid eco-region of the Deccan Plateau and is characterised by gently undulating basaltic terrain, black cotton soils, and a highly variable southwest monsoon. Agriculture is largely rainfed and closely tied to monsoon behaviour, while its central location facilitates access to markets, public offices, and essential services for surrounding villages. The agroecological pathway for Dharashiv is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Deccan Plateau, Hot Semi-Arid Eco-Region, located in the rain-shadow of the Western Ghats; characterised by a hot semi-arid climate with gently undulating basaltic terrain, black cotton soils, and highly variable monsoon rainfall

Land Types

Agricultural Land



Ecosystem Types

Agricultural / Cropland



Land Holding pattern



Key Landscape Challenges

1. **Erratic monsoons**, recurrent droughts, and extreme rainfall events create twin challenges of water scarcity and inadequate drainage, driving **soil degradation**, groundwater depletion, and declining productivity of black cotton soils.
2. **Input-intensive, monocrop** agriculture leads to high costs, seasonal unemployment, **distress migration**, and limited income diversification.
3. Semi-critical basaltic aquifers, low tree cover, and degraded commons reduce ecological buffering and **water security**.
4. **Persistent poverty**, fragmented holdings, nutrition insecurity, and uneven access to extension services, particularly for women and marginal farmers, shape the current socio-economic context of the landscape

Landscape Transformational Priorities

1. Build a **climate-resilient, smallholder-centred rural economy** that secures food, nutrition, and stable livelihoods for marginalised households, especially women, in the semi-arid Deccan.
2. Promote **diversified, low-input agroecological farming** to restore soil health and enhance soil organic carbon.
3. **Strengthen water security** through watershed assets, moisture conservation, and micro-irrigation, without further stressing semi-critical aquifers.
4. Develop integrated **crop–livestock–homestead nutrition systems and diversify livelihoods** to reduce dependence on risky monocropping.
5. Enable women's collectives, Sakhis, and FPOs to anchor **convergence, extension delivery, and market engagement** for inclusive landscape transformation.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Climate-Resilient Cropping

Shift from soybean–sugarcane monocultures to millet–pulse–oilseed intercropping on black cotton soils to reduce external input dependence, mitigate weather risks, and stabilise yields.

Community Seed Banks

Conserve indigenous landraces through local seed banks to ensure timely access to adapted varieties and reduce dependence on external markets.

Tree Integration

Promote fruit and multipurpose trees on farm bunds and homesteads to build long-term livelihood assets and enhance year-round biomass availability.

Nutrition



Women-led One-Acre Model

Enable women farmers to manage diversified plots with cereals, pulses, and vegetables to secure household nutrition and reduce market dependence.

Livestock Management



Small Ruminant & Poultry Systems

Enhance cash incomes through Pashu Sakhi-led health services, improved housing, and preventive care for goats and backyard poultry.

Fodder & housing

Address chronic scarcity via rainfed fodder on bunds and common lands. Upgrade cattle sheds to enable systematic collection of urine and dung for circular nutrient management.

Natural Resource Management



Soil Organic Carbon (SOC) Restoration

Rebuild soil structure and moisture-holding capacity by scaling composting, crop-residue retention, and green manuring, while replacing chemical inputs with on-farm bio-inputs.

Water Security & Budgeting

Maintain watershed structures (check dams, ponds) and implement village-level water budgeting to protect semi-critical aquifers and align crop plans with water availability.

Post-harvest, Processing & Markets



Village-level Value Addition

Establish FPO-led facilities for cleaning, grading, and small-scale processing (e.g., dal milling) to reduce post-harvest losses and improve price realisation.

Energy



Clean Energy & Biogas

Introduce biogas units for cooking and slurry-based nutrient management to reduce women's drudgery and fuelwood use.

Institutional Strengthening



To strengthen women-led SHGs, Sakhis, and FPOs to advance agroecology and improve smallholder incomes through collective action.

Knowledge Building



Knowledge Building

Establish Livelihood and Agroecology Service Centres to provide decentralised technical support through trained women and youth para-professionals linked to KVK, ATMA, and PoCRA.

Rural Finance and Risk Mitigation

Improve access to affordable credit and climate-risk insurance through KCC, SHGs, and FPOs, supported by financial literacy and digital systems.

Khatarshnong–Laitkroh

Khatarshnong–Laitkroh Block, East Khasi Hills, Meghalaya

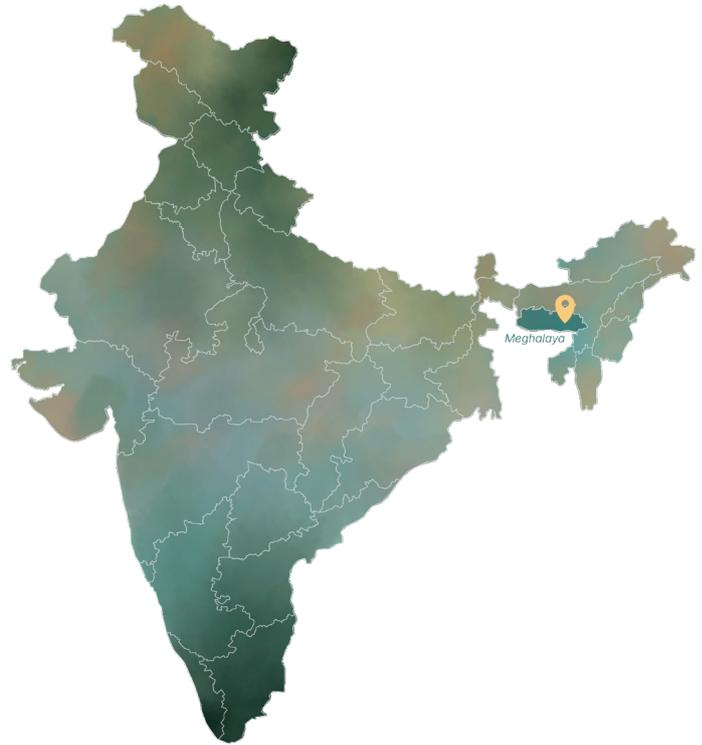
Geographical area
32,400 Ha

Total Population
33,570

Inhabited Villages
94

Households
6,587

The Khatarshnong–Laitkroh Community Development Block lies in the high-rainfall southern slopes of the Meghalaya Plateau. Khasi is a significant tourist destination, forming part of the Sohra (Cherrapunjee) region. The landscape is governed under the Sixth Schedule through Hima Sohra and village Dorbar shnong institutions and is characterised by extremely high rainfall, dissected plateaus and valleys, and Indigenous food systems based on bun, jhum and bri cultivation. The agroecological pathway here is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Eastern Himalayan Region (Zone 2) characterized by, humid and warm, very high rainfall 400–1,000 cm; mild subtropical highland climate.

Average annual rainfall

→ 12,204 mm (Sohra station proxy, 1901–2023 average).

Seasonal temperature

→ Summer: max ~30.1°C, min 8.5°C; Winter: max 27.9°C, min 4.5°C.

Seasonal humidity

→ Summer: 96%; Monsoon: 96%; Winter: 49%.

Land Types

Land use in Khatarshnong–Laitkroh is dominated by small, rainfed Indigenous farming systems (bun, jhum, bri), forming a slope-controlled mosaic of agricultural, forest, and fallow patches rather than clearly demarcated areas.

Ecosystem Types

The landscape hosts a tightly interwoven mosaic of agroecosystems, subtropical and temperate forests, plateau grasslands, deep river gorges and dispersed village settlements. These ecosystems are ecologically interdependent, with forests, grasslands and riverine gorges buffering extreme rainfall and supporting Indigenous food systems, while small Khasi settlements maintain low-density, ridge- and plateau-based habitation.

Land Holding pattern



Land is governed primarily under customary tenure: clan/lineage land, communal raid (Ri-Raid) land and homestead gardens (bri), with Panchayati Raj not applicable; nearly all forest land is community-owned.

Key Landscape Challenges

1. **Extremely high rainfall, steep slopes (>50°), and shallow soils** cause high runoff (~80%) and low groundwater recharge.
2. **Entirely rainfed farming** with short monsoon-tied cropping windows; winter crops limited to homestead gardens.
3. Soil fertility decline, **shortened jhum/bun fallows** and erosion undermine Indigenous agro-ecosystems.
4. **Rising use of hybrid seeds, synthetic fertilisers and pesticides** threatens ecological balance.
5. **Poor transport access and headloading raise drudgery and costs**, limiting market engagement.
6. **Stunting, anaemia and 25–30% BPL** reflect persistent livelihood and nutrition vulnerabilities.

Landscape Transformational Priorities

1. Safeguard and revitalise **Indigenous Khasi food systems and biodiversity** across plateaus and valleys by strengthening bun, jhum and bri as core agroecological systems; restore soil health, extend fallows and enhance nutrient cycling.
2. Integrate **agroforestry, green manures, bio-inputs and livestock-crop** systems to close nutrient loops and build resilience.
3. Promote diversified, nutrition-rich **production of millets, tubers, vegetables, fruits and wild edibles** over input-intensive monocultures.
4. Support self-provisioning and carefully scaled market engagement through **women-led cooperatives and value addition**.
5. Empower youth, women and customary institutions via barefoot research, ALCs, Children's Dorbars and biodiversity parks.
6. **Sustain unique cultural and agroecological traditions** and offer them as an alternative way of living to the tourists.
7. **Reduce external chemical dependence**, restore 4,200 ha of degraded land and establish a biocentric restoration model for the Northeast.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Forming a pool of barefoot agroecology researchers from local youth

To generate evidence and support community-led transformation.

Deeper study of the three Indigenous food systems (bun, jhum, bri) across 96 villages

To document practices, changes, costs, yields, and millet diversity, and to inform interventions.

Forming Agroecology Learning Circles (ALCs) in all 96 villages

To co-create, test and document agroecological solutions with farmers.

Setting up an International Training Centre on Agroecology at Laitsohpliah

A hub to promote Indigenous food systems learning, training and exchanges.

Community seed banks and seed farmers

For conserving indigenous seeds (including millets) and strengthening local seed systems.

Creating soil health demonstration plots (0.5–1 acre bun/jhum/bri)

To test and package soil-restoring practices (mulching, composting, green manures, legumes, alder, bamboo windbreaks).

Millet revival through diversified actions

Testing varieties, seed conservation, farmer promotion, millet-based foods and value-added products.

Livestock Management



Integrating livestock (pigs, poultry, cattle, goats)

With agroecological practices through improved composting, manure use and diversified household nutrition.

Strengthening local animal health and feeding practices

To improve the productivity and resilience of smallholder livestock systems.

Fisheries



Supporting small-scale aquaculture in ponds and reservoirs where feasible

To promote complementary livelihoods and protein sources.

Natural Resource Management



Watershed and spring-shed management

Protecting community springs, contour trenches and vegetative bunds, upgrading the Laitsohpliah check dam, and enhancing recharge.

Biocentric restoration and biodiversity parks

For the restoration of degraded lands and community-led Landscape Management Plans (PPLMP), and enhancing eco-tourism.

Energy



Exploring alternative energy options using biomass residues, coppicing species like Alnus

To reduce unsustainable fuelwood extraction, with pilots on pelletisation and fuelwood producer groups.

Institutional Strengthening



Strengthening customary and community institutions

Like Hima Sohra, Dorbar shnong, BMCs, cooperatives and forming Primary Cooperative Societies and women's cooperatives towards enhanced value addition and marketing.

Knowledge Building



Children's Dorbars, biodiversity walks, Mei-Ramew Learning Centre and online Indigenous Peoples Food Systems course

To build inter-generational knowledge and pride in agroecology.

Mau

Mau Block, Chitrakoot District, Uttar Pradesh

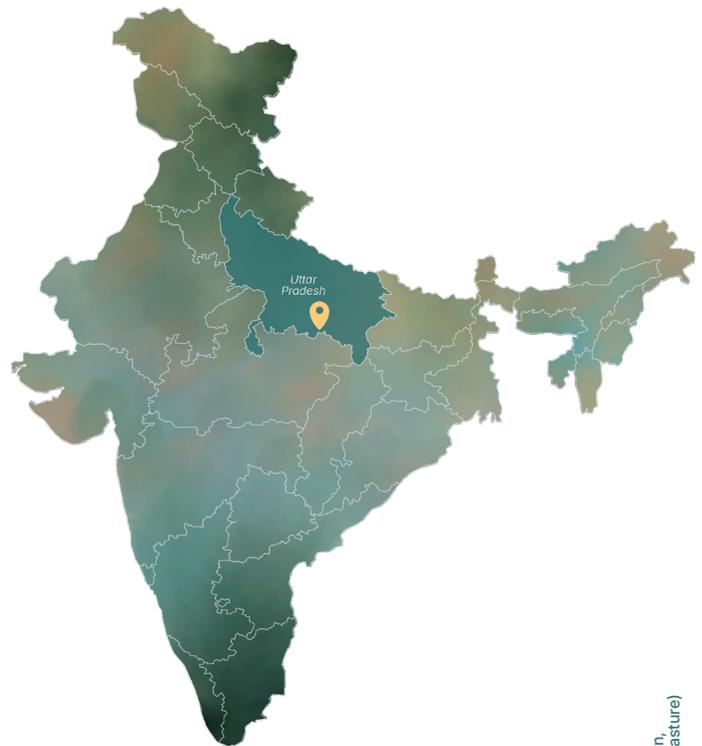
Geographical area
21,837 Ha

Total Population
97,515

Inhabited Villages
44

Households
14,663

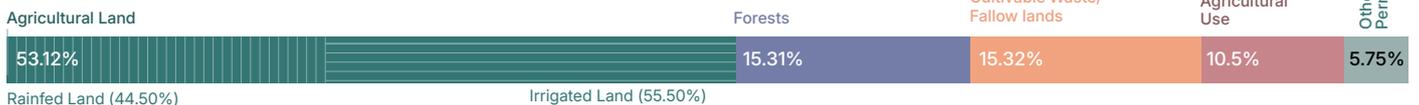
Located in the Bundelkhand plateau, Mau Block is a semi-arid landscape characterised by rolling undulations, rocky land patches and extreme moisture stress. The Yamuna River and seasonal streams define its hydrology. Agriculture is dominated by fragmented smallholdings, while forests face degradation from overgrazing. High poverty and reliance on low-value wage labour intensify local vulnerability. The region remains ecologically sensitive, necessitating a transition toward climate-resilient agroecological systems. The agroecological pathway for Mau is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Central Plateau and Hills Region, hot semi-arid climate (dry sub-humid to dry-arid) with monsoonal rainfall pattern. Elevation ranges from 87.5-213m with mean elevation around 127m. Rolling undulations are typical of the transitional landscapes of Bundelkhand.

Land Types



Ecosystem Types

Mau landscape exhibits a mosaic of ecosystems. Croplands dominate the landscape, interspersed with dry deciduous forests, scrublands, riverine habitats and settlements.

Land Holding pattern



Key Landscape Challenges

1. Erratic rainfall and prolonged dry spells cause **crop failures** despite irrigation, creating acute climatic stress.
2. Lateritic soils have **low fertility, declining organic carbon** and severe erosion.
3. More than half of children are **malnourished and anaemic**, with similar deficiencies among women.
4. **Grazing pressure and degraded forests** limit fodder, undermining livestock productivity.
5. High **poverty, fragmented landholdings, divided society**, migration and reliance on low-value wage labour intensify vulnerability and limit diversification.

Landscape Transformational Priorities

1. Prioritise household nutrition first (**"Eat First, Sell Surplus"** model) using diversified millets, pulses, vegetables, and livestock before selling surplus.
2. Transition to **diversified, climate-resilient agroecological systems** using decentralised bio-input centres and community seed banks to cut costs and boost net farm income.
3. **Regenerate soil and recharge water** through organic matter enhancement, recharge structures, and efficient irrigation to stabilise yields and strengthen long-term farm productivity.
4. Develop women-led, landless-friendly **livestock enterprises** for household nutrition and reliable, low-risk cash flow.
5. Build **aggregation and enterprise systems** to convert surplus into scalable, market-linked income growth.
6. To foster **self-esteem and dignity** among the poor and marginalized by significantly reducing migration and enhancing the productivity of natural resources.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Climate-Smart Crop Demonstration

Natural farming demonstration plots with millet, pulse and vegetable diversification to improve soil health, nutrition, and farm profitability.

Prakritik Krishi Kendra cum Seed Bank

Women-led bio-input and seed centres to reduce input costs, restore soil biology, and to strengthen local seed sovereignty.

Custom Hiring Centers

Affordable farm mechanisation services to reduce drudgery, improve efficiency and enhance timely climate-adaptive cultivation.

Fruit-Based Agroforestry

Integrated fruit and timber systems on degraded lands for long-term income, carbon sequestration, and agrobiodiversity restoration.

Forestry & NTFP



NTFP Value Addition

Community-based drying and processing of forest produce to enhance income, reduce losses, and incentivise conservation.

Livestock Management



Improved Dairy Management

Scientific dairy practices with improved feeding and health management to increase milk income and soil-enriching manure use.

Improved Goat Rearing

Low-cost housing, fodder systems and vaccination to reduce mortality and strengthen livestock-based household incomes.

Natural Resource Management



Soil and Water Conservation

Watershed structures to reduce erosion, recharge groundwater, stabilise production, and enable multi-season cropping.

Lift Irrigation

Community-managed irrigation systems to convert rainfed land into productive multi-cropped agricultural assets.

Processing, Value Addition and Markets



FPO Strengthening

Professionalised farmer collectives to improve aggregation efficiency, price realisation, and market-linked production.

Value Addition Units

Women-led processing enterprises adding value to millets, pulses, fruits and NTFPs for improved margins and shelf life.

Institutional Strengthening



Community Resource Persons

Local agroecology facilitators enabling last-mile advisory, adoption of practices, and climate-resilient farming scale-up.

Women Producer Groups

Strengthened women collectives to drive enterprise development, financial inclusion, and inclusive market participation.

Knowledge Building



Farmer Field Schools

Experiential learning platforms to strengthen farmer innovation, soil stewardship, and climate adaptation.

Digital Extension and weather services

Mobile-based advisories delivering weather, pest and market intelligence for informed and timely farm decisions.

Pangi

Pangi Block, Chamba District, Himachal Pradesh

Geographical area
1,60,052 Ha

Total Population
24,426

Inhabited Villages
60

Households
6,107

The Pangi landscape is a high-altitude Himalayan region in the upper reaches of Chamba district, Himachal Pradesh, between the Pir Panjal and Zanskar ranges. Marked by rugged terrain, alpine ecosystems, and extreme climate, the region remains isolated for nearly six months each year due to heavy snowfall. A short growing season, traditional farming, and dependence on the indigenous livestock system and forest resources shape livelihoods. In April 2025, Pangi was declared Himachal Pradesh's first natural farming subdivision following sustained advocacy by local traditional governing institutions, the Praja Mandal. The agroecological pathway for Pangi is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Agro-Climatic Zone IV, a cold temperate to alpine Himalayan (Cold Dry) zone, characterised by cool summers, low rainfall, severe and prolonged winters, snow-fed hydrology, elevations ranging from ~3,000 to over 4,000 m, with skeletal soils in upper reaches and sub-mountain soils in lower valleys.

Land Types



Ecosystem Types



Land Holding pattern



Key Landscape Challenges

1. Long, severe winters and six months of isolation restrict farming to a **short growing season and limit access to markets, services, and inputs.**
2. **Small and marginal farms face high climate risk**, with recent crop failures due to unusual weather events reducing productivity, incomes, and agricultural reliability.
3. The shift to commercial crops has reduced traditional grain cultivation, **increased dependence on government rations, and weakened food security.**
4. **Declining herd sizes and rising losses from predators** such as snow leopards, wolves, and bears stress livestock-based livelihoods.
5. **Poor energy, transport, and digital connectivity** constrain extension services, enterprise development, and market access, while fuelwood dependence.
6. Climate change **heightens risks to snow-fed water systems.**

Landscape Transformational Priorities

1. **Strengthen climate-resilient, food-secure, and livelihood-sustaining systems** that are rooted in traditional agroecological practices and adapted to extreme high-altitude conditions.
2. **Revival of climate-adapted, integrated crop-livestock-forest systems** and promote indigenous high-value crops and trees to diversify livelihoods and reduce dependence on external food supplies, climate-vulnerable cash crops, and extractive resource use.
3. **Reduce climate risk while protecting fragile alpine ecosystems** through community-led traditional natural resource management and the adoption of clean energy
4. **Conserve Pangi's unique trans-Himalayan biodiversity** by protecting critical habitats and species, while anchoring ecosystem stability, climate resilience, and climate-responsible sustainable tourism.
5. **Strong local institutions and community stewardship** will anchor this transformation, ensuring that development pathways enhance food security, ecological integrity, and long-term resilience amid accelerating climate change.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry

Dissemination of Integrated Scientific Horticulture Approaches

To improve orchard productivity, optimise input use, reduce costs, and strengthen climate-resilient and environmentally sustainable incomes.

Promotion of Cultivation of Traditional Crops

Strengthened farming practices and community seed banks to enhance seed security, improve productivity, strengthen household food self-reliance, and generate income from climate-adapted crops.

Promoting the cultivation of medicinal plants

Farmer capacity building, nursery development, and collective aggregation to enhance productivity, diversify incomes, and support sustainable use of local biodiversity.

Forestry & NTFP

Promoting sustainable harvesting, cultivation, and aggregation of NTFPs through FPOs

To improve price realisation, strengthen forest-based livelihoods, and ensure conservation of high-value medicinal and aromatic species.

Forest Area Regeneration through Plantation of Native NTFPs and high-value tree species

To restore biodiversity, strengthen ecological resilience, and support sustainable forest-based livelihoods.

Livestock Management

Strengthening the traditional Adhwari livestock system

Local extension facilitators and predator-proof shelters to improve animal health, milk quality, livestock survival, and the resilience and safety of high-altitude pastoral livelihoods.

Pasture development

Regeneration of degraded alpine pastures to enhance fodder availability, improve livestock productivity, and strengthen ecological resilience.

Strengthening wool- and dairy-based value addition

To increase incomes and sustain traditional pastoral livelihoods.

Other Livelihood Sources

Promoting rural and eco-tourism

Capacity building of homestay owners to create alternative livelihoods and ensure sustainable tourism development.

Natural Resource Management

Reviving traditional Kuhls

Community-led restoration to enhance irrigation efficiency, strengthen agro-biodiversity management, and build climate-resilient agriculture.

Biodiversity

Strengthening community-led management of Biodiversity Heritage Sites and identifying OECM hotspots

To conserve high-altitude biodiversity while sustaining traditional livelihoods.

Energy & Infrastructure

Upgrading traditional water mills (Gharats) with improved technologies

To enhance milling efficiency, reduce drudgery, strengthen local food security, and sustain renewable, community-managed energy systems.

Nutrition

Introducing nutrient-rich, high-altitude-adapted crops in kitchen gardens with improved greenhouse integration

To enable year-round vegetable cultivation, enhance household nutrition, reduce dependence on distant markets, and strengthen food self-sufficiency

Patharpratima

Kakdwip subdivision, South 24 Parganas, West Bengal

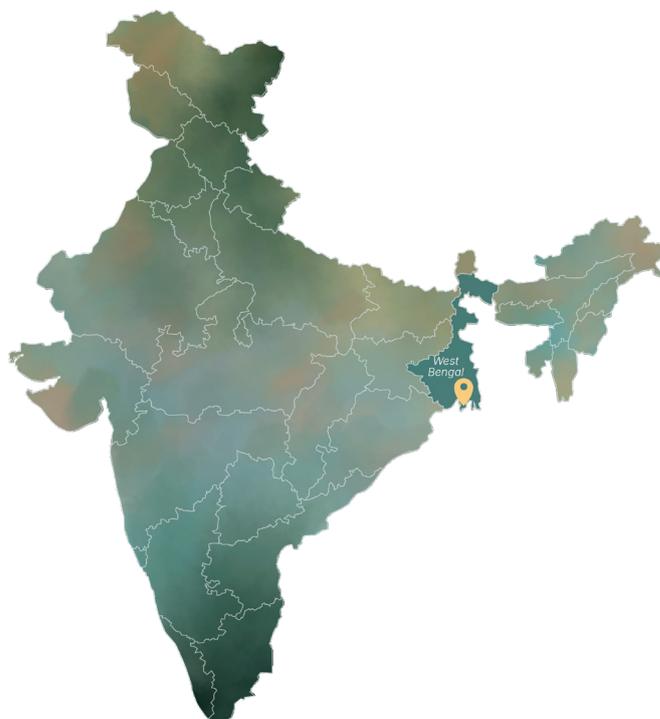
Geographical area
48,448 Ha

Total Population
96,839

Inhabited Villages
32

Households
20,459

The Patharpratima Community Development (C.D.) Block is a predominantly rural region located at the southernmost tip of West Bengal. As part of the Sundarbans deltaic system, the landscape is defined by a dense network of tidal channels, creeks, and distributaries of the Ganga River. Its low-lying, estuarine setting forms a unique mangrove-dominated ecosystem but also makes it highly vulnerable to cyclones, tidal surges, and embankment breaches. Limited local livelihood opportunities mean seasonal and long-term migration is a reality for many households, with remittances playing a significant role in sustaining the local economy. The agroecological pathway for Patharpratima is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



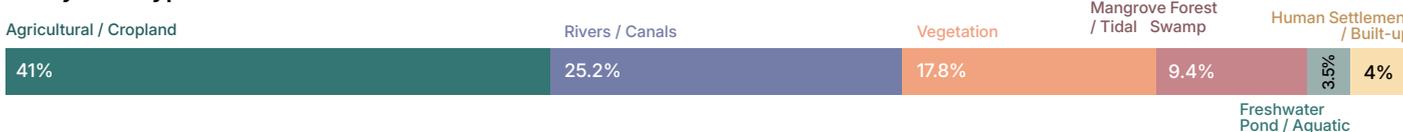
Agroclimatic Zone

→ Lower Gangetic Plain (Agro-Climatic Zone III) and the Coastal Saline Zone (WB-6), characterised by a sub-tropical climate - eastern coastal plain, hot subhumid to semi-arid ecoregion, and a flat alluvial deltaic landscape with tidal creeks, estuarine channels, and reclaimed embanked land.

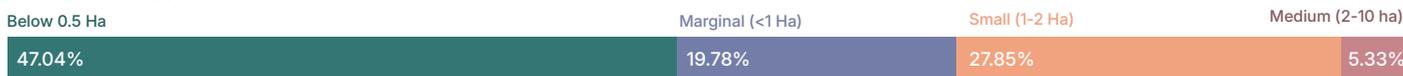
Land Types



Ecosystem Types



Land Holding pattern



Key Landscape Challenges

1. The Sundarban landscape faces **chronic ecological vulnerability** due to **recurrent cyclones, tidal flooding, and saline water ingress**, which severely affect agriculture, settlements, and natural ecosystems.
2. Agriculture is **predominantly synthetic chemical inputs led**. Exorbitant use of chemical inputs has adversely affected the soil health resulting in lower crop yields.
3. Livelihoods are predominantly **climate-sensitive and poorly diversified**, resulting in **low productivity, seasonal unemployment, and distress migration**.
4. **Weak physical connectivity**, fragile embankments, small marketable surpluses, limited storage and processing infrastructure **restrict market access and income potential**.
5. **Persistent poverty, marginal landholdings, and gendered vulnerabilities** constrain households' capacity to adapt and invest in resilient livelihoods.

Landscape Transformational Priorities

1. **Build a climate-resilient, self-sustaining food and livelihood system** that ensures nutrition security and well-being of marginal households, especially women, within the ecological limits of a highly climate-vulnerable delta.
2. **Focus on sustainable food production for self-consumption** rather than market-driven intensification.
3. **Restore soil health and manage soil salinity** by transitioning towards agroecological practices, reducing chemical inputs, improving water harvesting, and managing freshwater.
4. **Diversify livelihoods and reduce climate risk** through Integrated farming systems combining agriculture, livestock, fisheries, and homestead production.
5. **Conservation of unique local biodiversity**, including mangroves and wetlands, will be central to building resilience against climate risks.
6. **Women and small holders as primary agents of change** through strengthened institutions and access to knowledge & resources.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Land shaping-based integrated Farming

Crops-fishery-livestock-poultry farming model convert waterlogged paddy fields and current land area into a climate resilient agroecological production systems, improve household food and nutrition security through diversified on-farm production

Eliminating the use of chemical synthetic inputs and promoting diversification

Restore soil health, improve household food & nutrition security, and enhance resilience to climatic stress.

Strengthening of Community Seed Bank (CSB)

To ensure timely access to climate-resilient indigenous seeds, thereby reducing vulnerability of smallholders to external seed markets.

Promotion of Fruit-Bearing Trees in Homestead Land

To enhance year-round access to nutrition

Improved Betel Vine Management practices

Stabilise household livelihoods by reducing disease incidence, lowering input dependence, and sustaining productivity.

Livestock Management



Promoting improved small ruminant and poultry rearing practices

Increase household nutrition, reduce mortality, and strengthen women-led livelihoods

Improving existing cattleshed

Support agroecological farming with dung-urine collection, and enhance animal health.

Energy & Infrastructure



Introducing household biogas units

To meet clean energy needs, reduce dependence on fuelwood, improve women's health, and recycle organic waste for circular farm nutrient systems.

Aquaculture



Promotion of polyculture pond-based fisheries - Indian Major carp (IMC) + Small Indigenous Species (SIS)

Increase the availability of fish for household consumption and enhance the resilience of homestead waterbodies.

Supporting crab fattening using cage technology

To diversify coastal livelihoods, generate short-cycle income, and reduce pressure on wild crab populations,

Rejuvenation of the local hatchery

Ensure timely access to climate-adapted, indigenous fish seeds and strengthening self reliant, sustainable aquaculture in the landscape.

Natural Resource Management



Promoting farm ponds for rainwater harvesting and bunds for vegetable cultivation

Improve fresh water availability, support diversified production, and reduce climate-induced risks in agriculture and allied livelihoods.

Embankment protection (coastal and riverine region)

Restore mangrove and coastal biodiversity, protect lives and livelihoods, and enhance ecosystem services for long-term climate proofing.

Institutional Strengthening



Strengthening women-led FPC (Alor Thikana)

To support aggregation, improve market access, and enterprise sustainability that enhances livelihood stability for smallholder farmers.

Knowledge Building



Establishment of Livelihood Service Centres (LSCs)

To provide decentralised, last-mile technical support and handholding, enabling the adoption of climate-resilient and sustainable practices.

Patratu

Patratu Block, Ramgarh District, Jharkhand

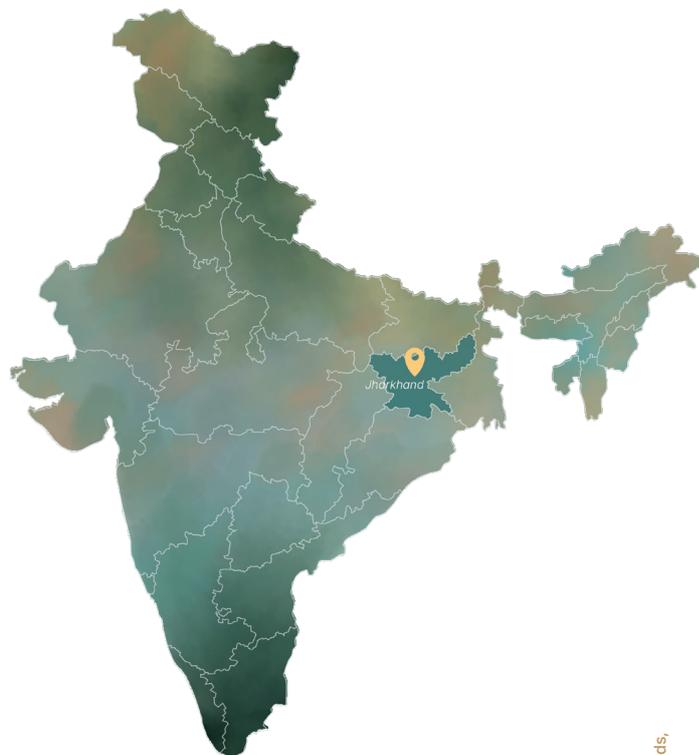
Geographical area
14,537 Ha

Total Population
48,387

Inhabited Villages
42

Households
9,020

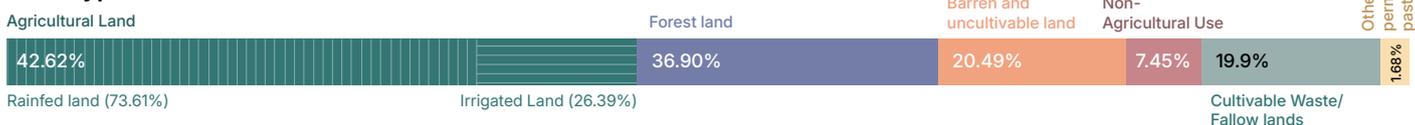
Situated on Jharkhand’s Chotanagpur plateau, Patratu is a humid subtropical landscape defined by the Damodar and Nalkarni river systems. Despite high rainfall, the region faces seasonal water scarcity due to rapid runoff across sloping, coarse-soiled terrain. Agriculture is predominantly rainfed and smallholder-based, often limited to mono-crop paddy. Mining-related fragmentation and soil acidity further constrain productivity, while proximity to urban markets offers significant potential for high-value agro-ecological diversification. Patratu stands out as one of NABARD’s most successful JIVA projects, with plans for scaling up as a CAT’s landscape. The agroecological pathway for Patratu is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Eastern Plateau and Hills Region (Zone VII), A humid subtropical climate with pronounced summer and winter seasons characterises the Eastern Plateau and Hills Region (Zone VII). Elevation ranges from 322-988m with a mean elevation of around 430m.

Land Types



Ecosystem Types



Land Holding pattern



Key Landscape Challenges

1. Coarse soils and sloping terrain lead to **rapid runoff**, limiting water retention even during high rainfall.
2. Dependence on **single-crop paddy** leads to seasonal unemployment and distress migration among tribal households
3. **Acidic soils with low organic carbon** reduce productivity and increase erosion.
4. **Poor market access** allows for middleman exploitation, and inadequate housing and disease management lead to high livestock mortality.
5. Limited **diversification and inadequate** post-harvest infrastructure constrain income realisation.

Landscape Transformational Priorities

1. Shift to **diversified, high-value agroecological production** for higher per-acre returns, increased marketable surplus, and sustainable income growth.
2. Convert rain-fed, degraded land into productive assets by harvesting rainwater, implementing precision irrigation, and regenerating soil to boost long-term yield **stability and climate resilience**.
3. Scale livestock and fisheries as **high-cash-flow** portfolios for women, landless, and tribal households.
4. Strengthen NTFP, orchard, and horticulture **value chains** through local processing and aggregation to increase value capture, margins, and rural job creation.
5. Build **FPO-led aggregation and post-harvest systems**, including solar cold storage, to improve price realisation, reduce leakage, and enable scalable market integration.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Sustainable Rice Intensification (SRI)

Transplanting young seedlings with alternate wetting-drying to increase yields, save water, reduce emissions, and improve soil health.

Vegetable Clusters

Organised off-season vegetable production with collective marketing for diversified income, improved nutrition, and climate-resilient livelihoods.

Forestry & NTFP



NTFP Value Addition

Community processing of forest produce to increase tribal incomes and promotes sustainable forest management.

WADI Orchard Expansion

Diversified orchards with intercropping for stable incomes, degraded land restoration, and carbon sequestration.

Livestock Management



Piggery Promotion

Improved pig rearing systems for high-return livelihoods and enhanced protein nutrition.

Goat Rearing

Scientific goat management to reduce mortality and strengthen household financial security.

Fisheries



Fisheries Development

Sustainable aquaculture in ponds and mine pits for income generation and protein access.

NRM - Private



Bio-Resource Production

Women-led bio-input production to restore soil fertility and reduce chemical dependency.

NRM - Community



Rainwater Harvesting

Community water budgeting and harvesting structures for groundwater recharge and climate-resilient agriculture.

Biodiversity



Biodiversity Registers

Community documentation of agrobiodiversity to conserve traditional varieties and strengthen stewardship.

Market



FPO Strengthening

Strengthening farmer collectives for aggregation, improved price realisation, and better market access.

Solar Cold Storage

Solar-powered storage units to reduce post-harvest losses and improve farmer returns.

Mango Processing

Women-led fruit processing enterprises for value addition and year-round income generation.

Institutional Strengthening



Community Resource Persons

Training local agroecology facilitators for last-mile advisory and climate-resilient farming support.

Agritech



Weather Monitoring

Automated weather stations to enable climate-informed farming decisions and reduce crop risks.

Rajnagar

Rajnagar Block, Chhatarpur District, Madhya Pradesh

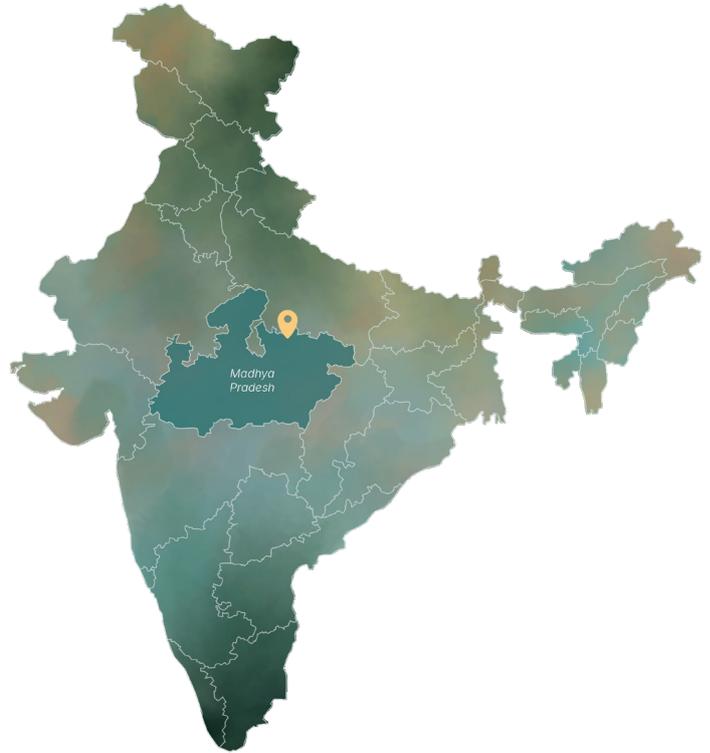
Geographical area
1,37,835 Ha

Total Population
99,111

Inhabited Villages
75

Households
18,906

Rajnagar Block is a predominantly rural block in northern Madhya Pradesh, situated in the Bundelkhand region and forming a transition zone between the Central Plateau and the Northern Plains of Chhatarpur district. The gently undulating landscape, under semi-arid conditions, is shaped by seasonal streams that drain into the Ken River system, with production dominated by rainfed agriculture and a high dependence on smallholder cultivation and wage labour. The agroecological pathway for Rajnagar is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



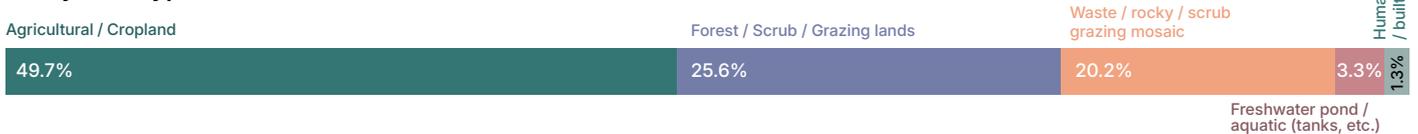
Agroclimatic Zone

→ Bundelkhand Agro-Climatic Zone (Zone V) within the Central Plateau and Hills Region (Region VIII); Agro-Ecological Sub-Region 10.1 – Northern Madhya Pradesh, Bundelkhand Plateau.

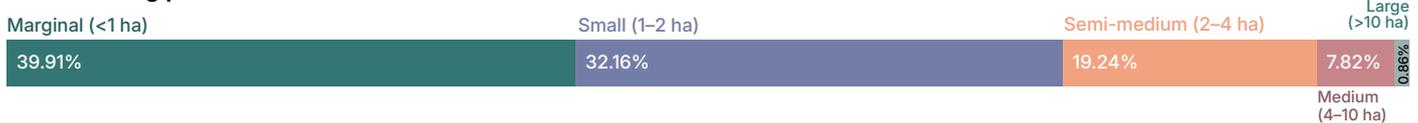
Land Types



Ecosystem Types



Land Holding pattern



Key Landscape Challenges

1. A semi-arid climate, **erratic monsoon, shallow, erosion-prone soils**, and patchy irrigation drive chronic production and **climate risks**.
2. Agriculture-dominated livelihoods with few non-farm options lead to **low, volatile incomes and seasonal underemployment**.
3. **Soil degradation, moisture stress, and fragmented smallholdings** limit the use of inputs and investment in risk-reducing technologies.
4. **Poverty, malnutrition, gendered literacy gaps and low sex ratio** deepen household-level vulnerability.
5. **Uneven access to health services, credit and markets constrains** livelihood upgrading and enterprise growth.

Landscape Transformational Priorities

1. Transform the Rajnagar landscape into a **climate-resilient, nutrition-sensitive, self-sustaining food and livelihood system** for small and marginal households, especially women, within semi-arid Bundelkhand limits.
2. Prioritise **sustainable, diversified food production** for household nutrition and risk reduction over high-input, market-driven intensification.
3. **Restore soil health and moisture** through agroecological practices, expanded use of bio-inputs, in-situ water conservation, and better use of decentralised water bodies and micro-irrigation.
4. **Promote integrated farming systems** that combine field crops, pulses, oilseeds, livestock, and homestead nutrition gardens to diversify livelihoods and diets, enhance income, and reduce climate and market risks.
5. **Empower women and community institutions** (SHGs, FPCs, CRPs, Krishi Sakhis) as primary change agents, improving access to services, markets and certification to climate-proof livelihoods and meet more local food and nutrition needs.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Promotion of diversified, agroecological cropping systems

To develop wheat, mustard, groundnut, and black gram clusters, with soil health improvement, bio-input use, and moisture-conserving agronomy.

Agroecological transition to reduce chemical inputs

Enhance soil organic matter and improve household food and nutrition security under semi-arid conditions.

Seed system strengthening

Through women seed entrepreneurs and local seed production of key crops (wheat, mustard, groundnut, pulses).

Promotion of homestead nutrition gardens and fruit/vegetable cultivation

To improve year-round access to diverse, nutrient-rich foods.

Improved management practices in key cash and oilseed crops (mustard, groundnut)

For better agronomy practices and post-harvest handling to stabilise incomes.

Livestock Management



Promotion of improved small ruminant and backyard poultry rearing practices.

To enhance household nutrition and women-led income.

Improvement of livestock housing and manure management.

To support agroecological farming and increase on-farm organic nutrient availability.

Processing, Value Addition and Markets



Interventions in wheat–mustard–groundnut value chains

By developing market linkages and developing value added products like mustard oil, groundnut products etc.

Enhanced use of crop residues and by-products

In livestock and fish feeding and composting, supporting circular resource use.

Localised seed and input systems (via BRC and Panchayat-level distribution units)

To ensure reliable access to bio-inputs and quality seeds.

Natural resource management



Promotion of farm ponds, bunding and water-efficient practices

For soil and moisture conservation, and to improve water availability and reduce climate-induced risks.

Restoration and protection of degraded commons and grazing lands

To enhance biomass, fodder supply and ecosystem services.

Energy



Promotion of farm- and village-level bio-input and biomass-based solutions.

Aligned with reduced chemical use by incorporating organic methods like composting, green manuring, vermicommat etc.

Institutional Strengthening



Strengthening women-led FPC in Rajnagar

To support aggregation, processing (mustard oil, groundnut), market access and enterprise sustainability.

Knowledge Building



Strengthening Farmer Field Schools, CRPs and Krishi Sakhis

To promote community-based extension platforms and Livelihood Service Centres for agroecological and market advisory services.

Vempalli

Vempalli block, YSR Kadapa district, Andhra Pradesh

Geographical area
19,008 Ha

Total Population
57,044

Inhabited Villages
26

Households
12,914

Vempalli block in YSR Kadapa district serves as the rugged gateway to the Papaghni River. Dominated by the semi-arid Deccan Plateau's rocky outcrops and scrub forests, the terrain varies significantly from ridges to valleys. Yet, this landscape is agriculturally rich; fertile alluvial and black soils support a diverse cropping system. Most notably, Vempalli is historically celebrated as the "Second Bangalore" for its exceptionally high-quality lemon production, which remains a defining feature of the local economy. The agroecological pathway for Vempalli is rooted in building climate resilience, enhancing adaptation and enabling mitigation across the landscape.



Agroclimatic Zone

→ Deccan Plateau (hot, semi-arid/arid) agro-climatic zone. The climate type is semi-arid tropical, characterised by hot summers and low to moderate rainfall.

Land Types



Ecosystem Types



Land Holding pattern



Key Landscape Challenges

1. The Vempalli landscape faces **acute hydrological stress** due to its semi-arid climate, recurrent droughts, and overexploitation of groundwater through deep borewells, leading to **declining water tables and fluoride contamination**.
2. Livelihoods are increasingly vulnerable due to a **shift towards high-input monocropping** of banana, cotton, Bengal gram, Chrysanthemum, and paddy, resulting in soil degradation, rising pest incidence, and exposure to volatile market prices.
3. Severe **human-wildlife conflict** acts as a structural barrier to farmers cultivating diverse food crops such as vegetables and pulses, thereby threatening household nutritional security.
4. **Limited access to grazing commons** due to land-use changes, coupled with **labour shortages**, has constrained the traditional livestock sector, affecting the resilience of landless and marginal households.

Landscape Transformational Priorities

1. Transition from **water-intensive commercial farming to a climate-resilient, water-efficient agroecological system** that secures livelihoods against persistent drought.
2. Prioritise **demand-side water management and soil organic carbon regeneration** to enhance critical moisture retention in groundwater-stressed zones.
3. **Break high-risk monocropping cycles** by reintegrating pulses, millets, and livestock to improve soil health and climate resilience.
4. Implement **ecological biofencing** to mitigate human-wildlife conflict and unlock the potential for cultivating diverse food crops for local consumption.
5. Position **women and youth as key change agents** managing bio-resource centres, value-addition enterprises, and extension services.
6. Collectively, **climate-proof the semi-arid landscape**, restoring ecological balance while ensuring economic dignity for smallholders and tenant farmers.

Important Landscape Interventions

Agriculture, Horticulture & Agroforestry



Integrated Banana Systems

Diversify monocrops through intercropping and ecological disease management; establish fibre processing units to generate additional income from crop waste.

Climate-Smart Paddy

Promote Alternate Wetting and Drying (AWD) and dry direct seeding in command areas to reduce groundwater abstraction and methane emissions.

Nutrition Integration

Address dietary gaps and market dependence by intercropping nutri-millets and vegetables within commercial fields and homesteads.

Soil Health & Diversification

Regenerate soil organic carbon via green manuring and crop rotation to enhance moisture retention and stabilise yields in cotton and groundnut systems.

Natural resource management



Ecological Crop Protection

Mitigate wildlife conflict using live hedgerows and solar fencing, enabling farmers to safely diversify into high-value vegetables and pulses.

Landscape Conservation

Revive tanks and drainage systems through ridge-to-valley measures, including contour bunds and trenches, to enhance groundwater recharge and control erosion.

Commons Restoration

Regenerate degraded grazing lands and forest interfaces by removing invasive species and planting fruit and fodder species to support biodiversity.

Livestock Management



Small Ruminant Systems

Support landless and vulnerable households with sheep/goat assets, integrated with preventive healthcare, vaccinations, and insurance to ensure livelihood stability.

Improved Cattle Sheds

Enhance animal hygiene while facilitating the collection of urine and dung for bio-input production, closing the nutrient loop between livestock and crops.

Institutional Strengthening



FPO & Market Linkages

Build FPO capacity for aggregation and marketing, and provide essential infrastructure such as godowns, to reduce post-harvest losses and prevent distress sales.

Women-led Bio-Resource Centres

Establish community-owned enterprises to produce and sell organic inputs locally, ensuring the availability of low-cost bio-fertilisers.

Energy



Household Biogas

Convert livestock waste into clean energy, reducing women's drudgery while providing nutrient-rich slurry for soil enrichment.

Knowledge Building



Kisan Mitra Service Centres

Provide decentralised technical support and digital extension for weather and pest advisories, lowering costs and enabling data-driven transitions for smallholders.

The landscape-based transformation hopes to support our communities in creating a biodiverse, nutritious, equitable and resilient future.

To know more about these plans and how you can partner with us, contact programmes@agroecologyindia.org.

Visit our website to learn more about our approach.



www.agroecologyindia.org





Consortium for Agroecological Transformations

Cultivating Sustainable Food & Farming Transformations

The Consortium for Agroecological Transformations (CAT) is a national ecosystem orchestrator advancing community-led, agroecological transitions across India's rural landscapes to strengthen both societal and ecological well-being. CAT brings together civil society organisations, technical experts, and farming communities to design and implement landscape-driven agroecological transformation. Its work focuses on generating evidence to inform policy change, enabling blended-finance pathways, and strengthening consumer demand for chemical-free food—advancing resilient, equitable, and sustainable food futures.