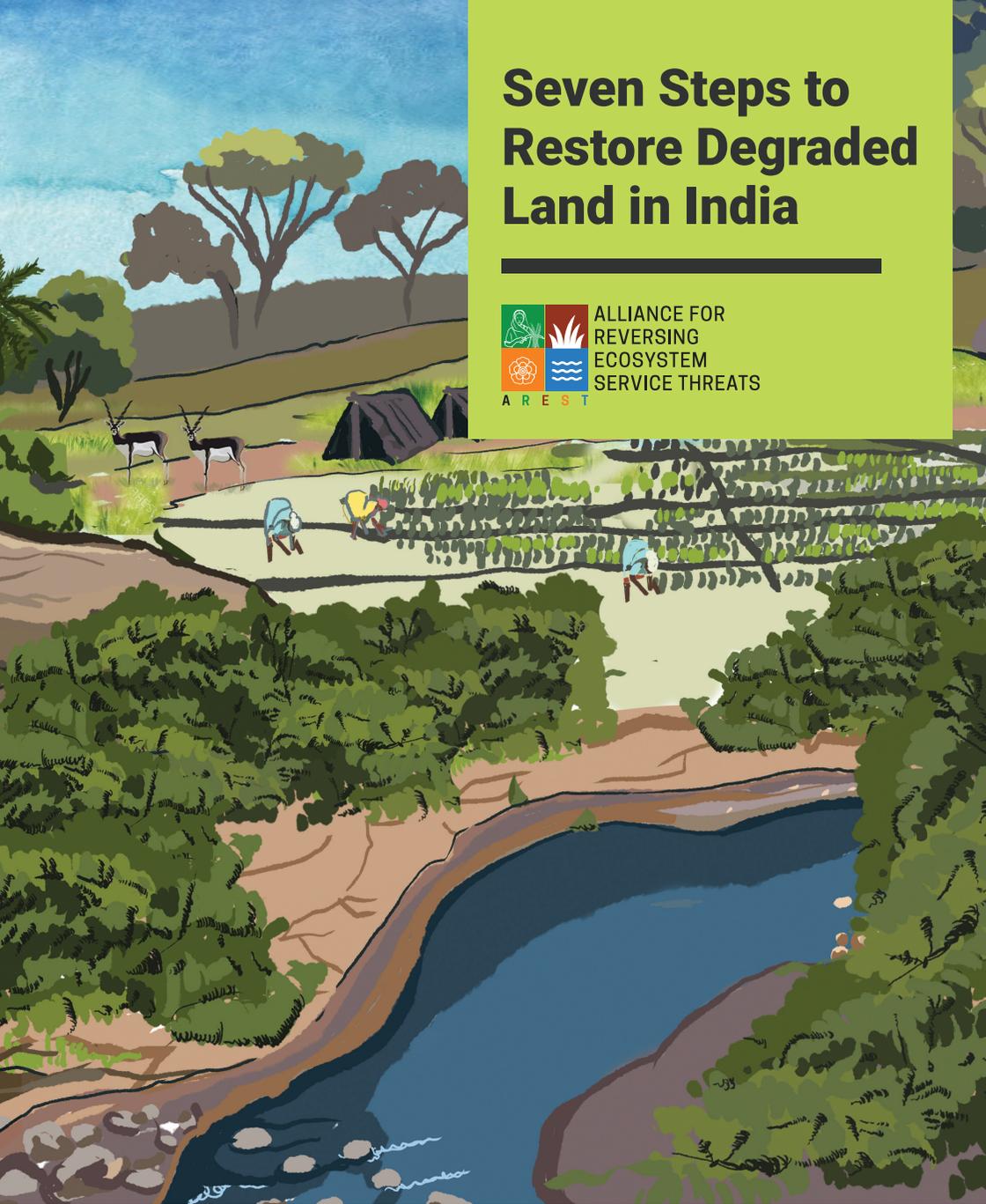


# Seven Steps to Restore Degraded Land in India



ALLIANCE FOR  
REVERSING  
ECOSYSTEM  
SERVICE THREATS



The Alliance for Reversing Ecosystem Service Threats (AREST) is a coalition of partners working to build and execute a strategy to restore India's degraded lands.

AREST aims to restore 12 million hectares of land in 13 states, 204 districts and for 90 million households in semi-arid and sub-humid zones of peninsular India, across **three critical ecosystems: Agricultural Lands, Riparian Habitats, Open Natural Ecosystems (ONE)**

Here is how we plan to go about it.

The AREST approach entails seven steps to be followed in any landscape targeted for restoration:



**Step 1**  
Map degradation across ecosystem types



**Step 2**  
Validate types of degradation on-site



**Step 3**  
Understand community aspirations



**Step 4**  
Identify potential interventions



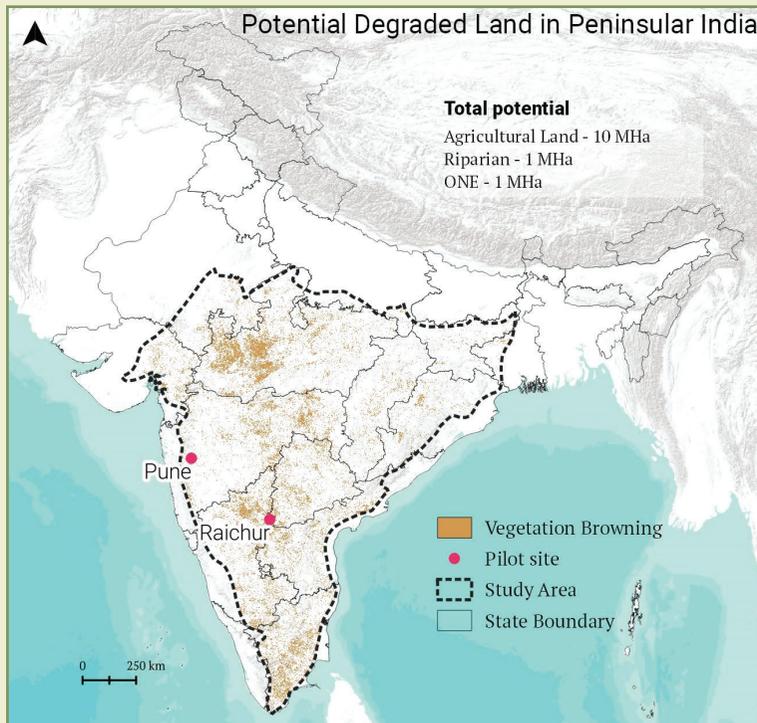
**Step 5**  
Map stakeholders and institutions



**Step 6**  
Identify transition financing options



**Step 7**  
Set protocols for monitoring and evaluation



## Step 1: Map degradation trends across ecosystem types

Existing degradation maps have classified deserts, grasslands and flood-prone agricultural lands as 'wastelands'. This misrepresents their environmental and economic value.

For an ecologically accurate classification, we attempted analysis using a 'Greening and Browning' technique. To do this, we used satellite-observed decreases in vegetation greenness (i.e. 'browning') captured in the post-monsoon months from 2000 to 2020. This indicates loss of land productivity, to generate estimates of land degradation for the three ecosystem types.

## Step 2: Validate types of degradation on-site

Next, it's important to go into more specific aspects of degradation. We shortlisted potential greening and browning sites and visited them, to verify.

We identified four categories of degradation across each of the three landscapes:

Ecosystem Type	Soil Erosion	Loss of Soil Organic Carbon	Soil Salinisation	Invasive Species
ONEs		✓		✓
Agricultural	✓	✓	✓	✓
Riparian	✓			✓

## Step 3: Understand community aspirations

Accounting for local preferences and needs is critical. We identified two sets of tools to understand demand for services most suitable for communities:

- i) Household-level surveys of people's aspirations
- ii) Social network analysis

This effort will help us understand what types of livelihoods are acceptable to the community. Do they aspire to diversify their livelihoods beyond agriculture? Are certain occupations considered to be the province of just one caste or community? This helps co-design restoration interventions with local stakeholders.

## Step 4: Identify potential interventions

We tailored interventions to meet community aspirations, and to complement local ecology. We recommend a journey mapping exercise — a method that helps clarify economic and social activities of an actor (in this case, households in affected areas): current livelihood sources, spending patterns, shift in farming choices etc.

We prioritised options specific to the degradation in each ecosystem to present a bouquet of possible interventions:



**Agroforestry & reforestation**



**Assisted natural regeneration**



**Conservation**



**Community centric efforts for improving soil health.**



**Removal & management of invasive species**

## Step 5: Map stakeholders and institutions

A restoration strategy must carefully consider ecological, economic and socio-cultural nature of the landscape, as well as the political economy of local bioresources. These are affected by a range of stakeholders — local, regional and national — each with different interests, influences and conflicts.

AREST built an extensive stakeholder map of all actors relevant to restoration work in Karnataka's Raichur and Chikkaballabur. Below is a small snapshot:

Land users	Government departments	Grassroot facilitators	Funding sources
<p>Part-time farmers, landowners</p>	<p>Agriculture, tribal, women &amp; child welfare</p>	<p>Gram panchayats (village councils), NGOs, labour groups</p>	<p>CSR funds, NABARD (rural development bank)</p>

## Step 6: Identify transition financing options

Restoration takes time. Its costs and benefits don't often accrue to the same stakeholders. So, it's important to match stakeholders to funds at each step.

Ecological restoration can be leveraged as a cost-effective way to 'build back better' post pandemic, as it helps create jobs, protect communities and infrastructure from extreme climate events, improve human health and more. These benefits can be leveraged to different sources, which is why AREST proposes an interplay of private and government funding.

For instance, parts of the restoration roadmap might sync with government initiatives, targets and commitments like the Sustainable Development Goals. This allows collaboration over budgetary allocations.

## Step 7: Set protocols for monitoring and evaluation

Monitoring and evaluation should begin once the sites are identified and before restoration activities start. At this stage, baseline data should be collected for indicator variables — bio-physical and socioeconomic parameters that are sensitive to changes caused by restoration. Eg: AREST has listed soil PH, evapotranspiration, and biodiversity such as earthworms and insect pollinators as some of the indicators to track when restoring agricultural land.

## Way Forward

**Test methodology in pilot sites** - We identified 200 hectares of degraded land in two districts - Raichur in Karnataka and Pune in Maharashtra - to co-create a scalable sandbox.

**Refine the methodology** - Since we adopt a people-centric approach, the methodology will adapt each time to local socioeconomic and ecological contexts.

**Develop playbooks and tools** - A multilingual restoration handbook will serve as a step-by-step guide.

**Organise capacity building for partners** - To successfully scale, we will support local capacity building of Gram Panchayats, people's committees, institutions, government officers and policymakers.



Scan to read the full methodology on [arest.in](http://arest.in)

Write to us at [arest@atree.org](mailto:arest@atree.org)

