PESM: Five Elements, One Earth

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A five-element way of seeing how everyday choices reach our water, soil, air and climate, and come back to us. A concept we are testing with Tamil Nadu villages.

What is PESM?

The **Panchabootham Earth System Model (PESM)** reads any place, from a household to the planet, through five linked elements: **earth** (soil, food, materials), **water**, **fire** (heat and energy), **air**, and **space** (room for water, trees and wildlife). It draws on the Tamil Panchabootham tradition and pairs it with the measuring tools of modern Earth science.

Why it matters

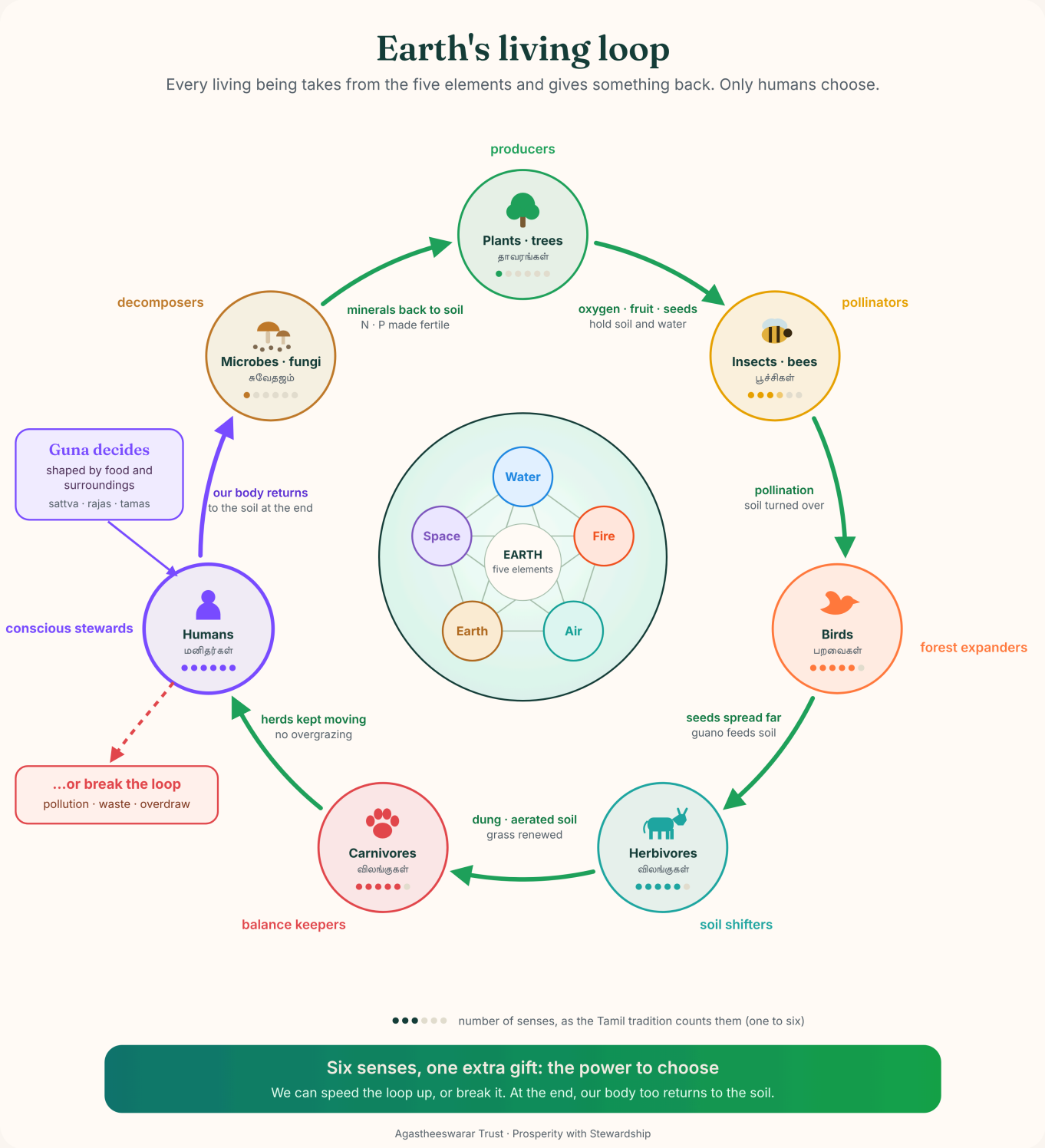
Humanity now uses nature about **1.7 times faster** than Earth can renew it, and Earth Overshoot Day, which marks the date each year when our use of nature passes what Earth can renew in that whole year, came in late July. Scientists track nine limits that keep Earth safe for people; **seven of the nine** have now been crossed (Planetary Health Check 2025). In Tamil Nadu, nearly one in three firkas draws more groundwater than the rain puts back (CGWB 2024).

Yet we tackle these problems one sector at a time. Earth does not work in sectors. When a water table falls, fluoride rises in the same wells, pumps burn more power, the land heats up, life in the tank thins out, and people feel it in their bodies and minds.

The cost is already counted. In India, polluted air was linked to about 2.1 million deaths in 2021 (State of Global Air 2024), heat is becoming deadlier each decade (Lancet Countdown 2025), and monitored wildlife populations have fallen by 73% since 1970 (WWF Living Planet Report 2024).

Five simple ideas

1. **Everything is linked.** Pressure on one element spreads to the other four.
2. **Balance is set by the weakest element.** Clean air cannot make up for a dry aquifer. A place is healthy only when no element is pushed past its limit.
3. **All life is in the loop, but not in the same way.** Other living beings run their own give-and-take cycle with Earth. A bird eats a fruit and drops the seed far away, and a new tree grows. Bees carry pollen, earthworms build soil, trees bring shade and rain. They take what they need and give back. Humans draw the most, often past the limit, and the strain comes back to us in the **body** (heat illness, lung and heart disease, unsafe water) and the **mind** (stress, poor sleep, anxiety, anger, loneliness). Other life feels our overdraw first: fewer homes, fewer species, and less of the giving back that renews the land.
4. **Guna, our inner nature, is in the loop too.** This is what the five-element tradition adds. What we eat, drink, breathe and hear, and the surroundings we live in, shape our guna: calm and clear (sattva), restless and wanting (rajas), or dull and heavy (tamas). Strained elements bring poorer food and harsher surroundings, which can tip us toward wanting more and drawing more. We offer this as an idea to test, not a settled fact.
5. **How much we want is the part we can change.** What each household draws shapes the village, and the state of the village comes back into every home. Knowing how much we take, and sharing fairly, with room left for other life, is where balance starts.



How we measure results

PESM is **built on proven practice and new in how it measures**. Reviving tanks, recharging groundwater and planting native trees already work. Every project we run delivers on its own; PESM shows what else improved, or slipped, alongside it. Over two monsoons we will work with partner villages in Tamil Nadu, each paired with a comparison village. We will track a small set of plain numbers, such as groundwater levels, water quality, heat, green cover, air, the living species seen, and (with consent) people's health and wellbeing, against official limits. Our claims are written down before we start, we will invite an independent college to check the results, and we will publish what works and what does not.

Our stance

Growth matters. We ask that **every growth plan move at the pace Earth can recover**. PESM does not replace government, SDG or CSR programmes. It stands beside them, checking that progress on one goal is not paid for by quietly overdrawing another element. We offer this ancient five-element view as a concept worth trying on the global journey to a healthier Earth, judged only by what it measures.

Join us

Volunteers are welcome to apply the PESM method and test it with us, as are researchers, colleges, panchayats and CSR partners. Write to info@agastheeswarartrust.org. A short concept note is available on request.

Earth’s living loop, group by group

GROUP	SENSES · TAMIL TERM	TAKES FROM EARTH	ROLE	GIVES BACK
Microbes · fungi	1 · சுவேதஜம்	Dead leaves, carcasses, waste	Decomposers: break complex matter down	Minerals, nitrogen and phosphorus back to the soil
Plants · trees	1 · தாவரங்கள்	Sun’s heat, groundwater, air, soil nutrients	Producers: turn the elements into living food	Oxygen, fruit, seeds; hold soil and moisture
Insects · bees	3–4 · பூச்சிகள்	Nectar, sap, pollen, detritus	Pollinators and soil aerators	Pollination for about 80% of plants; ants and termites recycle tough plant matter
Birds	5 · பறவைகள்	Wild fruit, seeds, insects, fish	Forest expanders	Seeds dropped far and ready to sprout, with rich droppings as fertiliser
Herbivores	5 · விலங்குகள்	Grass, leaves, bark, water	Soil shifters: graze, roam, churn the ground	Dung that feeds earthworms and beetles, and loosens the soil
Carnivores	5 · விலங்குகள்	Herbivores	Balance keepers	Keep herds moving, so grassland, riverbanks and forest recover
Humans	6 · மனிதர்கள்	Something from every group above	Conscious stewards (பகுத்தறிவு): can speed the loop up or break it	At the end, the body returns to the soil and the loop goes on

- **Samashti and viyashti.** The tradition names two scales: *samashti*, the whole (Earth, a State, a village), and *viyashti*, the part (a household, a person). Harm and healing travel both ways between them.
- **One pattern at every scale.** *“What is in the universe is in the body”* (அண்டத்தில் உள்ளதே பிண்டம், பிண்டத்தில் உள்ளதே அண்டம்). The tradition holds that every element carries a share of the other four, in

the land and in the body alike. We treat this as an idea to test, not a fact.

- **What PESM adds.** Global climate models are excellent at physics. PESM works where they do not reach: knock-on effects across departments, people’s choices as a live part of the system, and the scale of one tank, one village, one household.