

Which indicators show the state a place is in, and what to prescribe there?

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Summary

- **Problem.** Gains from external support often do not last, and the same problems recur. Effort is spread without a shared picture of where each place stands.
 - **Hypothesis.** In some places there is a tipping point beyond which gains sustain themselves. Places are in different states, and what holds them back differs by state.
 - **Proposal.** Diagnose the state of small areas using public indicators and rules, then let the state, rather than habit, visibility or politics, determine what to prescribe.
 - **Ask.** Which indicators best show a place's state and what binds there? We offer a hypothesis and a prototype, not an answer. A better discussion of that question would already be a success.
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1. The problem

Externally supported progress often fails to persist. Three examples:

- **Water.** Estimates of the share of water points in sub-Saharan Africa that are out of service at any one time range from 20% to 34% [1], and UNICEF notes that many pumps are abandoned within one to two years of a projected lifespan of ten years or more [2].
- **Safety.** Estimates of how often civil war recurs vary widely with definitions: roughly 21–26% in re-analyses of the first years of peace [3], and 57% over 1945–2009 in another count [4].
- **Funding.** Official development assistance from DAC members fell 23.1% in real terms in 2025, the largest annual contraction on record [5].

These cases share a feature: there is no common, public picture of where a place stands relative to the point at which gains hold on their own. In our view, effort is therefore spread thinly, restarted after reversals, and hard to compare across places and funders.

2. The idea: states and transitions, diagnosed before prescribing

Degraded drylands offer a useful picture. In ecology, a state is a resistant, resilient combination of soil and vegetation. Crossing a threshold moves a site into another state, and returning to the earlier one requires active restoration [6]. Thresholds are of two kinds: abiotic (soil, hydrology) and biotic (vegetation), and abiotic limitations need to be assessed and addressed before biological restoration begins [7]. Scattering seed over bare soil is an attempt to cross a biotic threshold while an abiotic one still holds. How a site behaves near a threshold depends on interactions among several variables, so indicators of threshold behaviour have to be multivariate [8].

We borrow three ideas. Places are in states, separated by thresholds. Different states call for different treatments, sometimes in a fixed order. And the state has to be diagnosed before a remedy is prescribed. The third idea is not new in economics: growth diagnostics identifies a country's most binding constraints with a decision tree and matches remedies to context [9][10]. What we propose is to apply this logic to small areas, to several dimensions including safety, and to states defined by whether gains persist.

Two cautions apply. First, tipping points are a hypothesis. In ecology, the early-warning indicators proposed for such transitions, such as vegetation patterns, are themselves contested [11]. In human development, one large study found an asset threshold in Bangladesh above which households grew out of poverty and below which they slid back [12], while a broader review concluded that poverty traps of the classic kinds are rare and largely limited to remote or disadvantaged areas [13]. Second, we speak of states, not stages. Stage models such as Rostow's assume a single linear path and have been widely criticised: places can skip steps, move backward or follow different paths [14].

3. Why now

- **Budgets are shrinking.** Official development assistance from DAC members fell 23.1% in real terms in 2025 [5], and the OECD projects a further decline of about 7% in 2026 [15]. When budgets fall, errors in where and how to spend cost more. This argues for diagnosis; it does not show that thresholds exist.
- **Small-area measurement has become feasible for some indicators.** Relative-wealth estimates at 2.4 km resolution exist for all 135 low- and middle-income countries, validated against household surveys in 18 countries and published with confidence intervals; the public dataset covers about 93 countries [16]. In Togo, the same approach was used to target cash transfers, with 42% better targeting precision than geographic targeting of the poorest cantons [17]. For water, sensors on handpumps are being piloted, and one study in East Africa reports a 40% reduction in the relative risk of pump downtime [18]. For safety, geolocated event datasets such as ACLED and UCDP GED exist, the most timely updated weekly [19].
- **It is not yet feasible for all indicators, and the measures carry biases.** Event datasets record reported events only, and coverage varies with media density and source networks, so an area with no recorded events is not necessarily peaceful [19]. We have not identified comparable small-area data for learning outcomes or institutional quality. The public wealth index is relative within each country. Satellites have difficulty in some dryland landscapes [21], phone-based schemes exclude people without phones [20], and all of this raises privacy questions.

4. What we would measure

We start with safety, water and education. They are basic conditions on which other outcomes plausibly depend (a hypothesis), data exist for them, and practitioners we spoke to in Kolkata and Nairobi described them as interacting. This is a starting set, not an answer.

Safety is decomposed into threat, exposure and protective capacity, a standard risk decomposition that INFORM uses with a different grouping [23]. The outcome we care about, persistence or recurrence, is kept separate from these conditions.

Component	What it covers	Example indicators	Known problem
Threat	How often and how intensely violence occurs: organised armed violence (state-based, non-state, or one-sided against civilians, following the UCDP typology [22]) and non-organised violence (criminal, communal, domestic)	Georeferenced event counts	Reported events only; non-organised violence is poorly measured
Exposure	What lies within reach of the threat: people, service assets (schools, water points, clinics), connections (main roads, market routes)	Population and assets within a set distance of recent events	Needs linked layers of people and assets
Protective capacity	Who can prevent and respond: the state, the community, external actors	Institutional quality, as used in the World Bank's fragility classification [24]; community mediation (surveys)	Sub-national measures are scarce

Each indicator is assigned by what it measures. An occurrence of violence is threat. A location relationship between violence and people or assets is exposure. An ability to prevent or respond is protective capacity. Displacement is an outcome. How an indicator is measured (event records, surveys, administrative data, remote sensing) is a data-quality attribute, not a category; perceived safety is a survey measure of threat.

Water should be measured by whether service keeps working, not by whether a facility exists. **Education** should be measured by learning, not attendance. Further candidates to test are institutional quality, climate exposure, livelihood assets and health. In the literature on repeat civil war, strong political institutions are reported as the main determinant of whether countries get caught in a conflict trap, ahead of per-capita income [25], which is why protective capacity belongs in the set.

Safety may act as a gate, in the sense that violence can nullify gains in the other dimensions. Or it may be one indicator among others. This is a question to test, not an assumption.

5. States and prescriptions: a hypothesis

We diagnose a place by asking questions in order, so that each place falls into exactly one state.

Test, in order	State	Direction of prescription
Can services operate at all? No	S0 Unreachable	Protection and a minimum of support; seek access; re-assess the state regularly
If external input stopped, would the foundations hold? No	S1 Externally held	Make the foundations durable first: maintenance systems, protective capacity, local institutions
The foundations hold. Do gains sustain themselves? No	S2 Stalled	Identify the most binding constraint and apply a targeted, larger push
Gains sustain themselves	S3 Self-sustaining	Monitor lightly and hand over

This tree is a hypothesis. The definition of the states will be derived from persistence data (Section 8), and it will include backward moves, for example from S3 to S1.

Concentrated effort is one prescription for one state, not a general strategy. The Bangladesh study illustrates why: households above an asset threshold kept accumulating, while those below it slid back [12]. Where that holds, a transfer that leaves a household below the threshold is eventually lost, so the kind and size of support must differ by state.

No place is classified as beyond help. What that does and does not mean is set out in Section 9.

6. Principles for classifying places

A label should not be a black box, and it should not be a political decision in disguise. Judgement cannot be removed, because the choice of indicators, thresholds and weights involves values. The aim is to make that judgement visible and open to challenge. We propose six principles.

1. **Published rules.** The indicators, thresholds and decision tree that assign a state are public.
2. **Reproducible.** Data and code are public, so anyone can reproduce a place's state.
3. **Uncertainty shown.** Each state comes with the range within which it could change, such as the confidence intervals of its inputs.
4. **Challenge and history.** Counter-evidence is accepted, and every change to a rule or a label is logged.
5. **Classification separate from allocation.** The map shows state only. Who receives what is a separate decision, made by others.
6. **Sensitivity shown.** The effect of changing a threshold or a weight on each place's state is published.

Governments, funders or communities may reject a label. The principles do not prevent that; they make the grounds for disagreement explicit.

7. How this differs from existing work

Several lines of work cover parts of this ground.

- **Growth diagnostics** identifies binding constraints with a decision tree, at country level [9][10].
- **Sub-national development indices.** The Subnational Human Development Index covers 1,625 regions in 161 countries, with a series from 1990 (to 2022 in the latest version), but fills missing years by interpolation [26]. The Global MPI is disaggregated into 1,281 subnational regions, with trends for 84 countries [27]. Both describe levels at province scale and have no safety dimension.
- **Risk indices.** INFORM Subnational combines hazard and exposure, vulnerability, and lack of coping capacity for specific regions and countries [23]. It describes risk, not the persistence of gains.
- **Conflict forecasting.** ViEWS forecasts violence on a grid of cells of roughly 55 km [22][32]. It covers violence only.
- **Sector databases.** WPdx hosts over 650,000 water point records and provides failure-risk predictions [1]. FEWS NET classifies food security by livelihood zone since 2009, for about 20 countries [28]. Each covers one dimension.
- **Household and neighbourhood research.** Evidence on asset thresholds [12], on geographic poverty traps in household panel data from rural China [30], and a theory of development resilience centred on avoiding and escaping chronic poverty over time [31]. FAO's RIMA estimates household resilience capacity from household surveys [29].

We searched for a public, small-area, multi-dimensional system that includes safety and is validated against the persistence of gains, and did not find one. Each piece exists; the combination does not, to our knowledge. We may have missed it, and we welcome counter-examples. Appendix A shows what we checked.

8. How we could find out

1. **Persistence backtest.** Using historical small-area data, test whether indicators measured at one time predict persistence or relapse ten years later (definitions in Appendix B).
2. **Derive the states from data.** Use the persistence outcomes to find where relationships change sharply, and compare the result with the decision tree in Section 5.
3. **State-dependent effects.** Stratify places by state and randomise the prescription within each stratum, then compare persistence per unit of cost. If the same prescription is best in every state, diagnosis adds little.
4. **Beyond violence history.** In forecasting systems, conflict history and conflict in neighbouring areas are the main predictors, and forecasting the onset of conflict is very hard [32]. We will test whether water, education, exposure and protective-capacity indicators add information beyond violence history and neighbours.

5. **Neighbour effects (secondary).** Test whether the state of neighbouring areas affects a place's persistence once common shocks are removed. Observational studies find positive spatial dependence in growth: in one global study, a region's growth was associated with about 0.64% growth in its neighbours for each 1% of its own, and shrinking regions pulled neighbours down [33]. Theory also allows the opposite, a backwash from the periphery to a growth centre, so the net effect can be positive or negative [34]. A cash-transfer experiment in Kenya randomised allocation beyond individual households, which gives a precedent for the design [35]. We state in advance that if the effect disappears once common shocks are removed, we will not claim diffusion.
6. **Publish data and code**, so that others can repeat and challenge each step.
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9. Risks and ethics

- **What “no place is classified as beyond help” means.** Every place has a state, and every state has a prescription. This is a commitment about prescription, not a guarantee of delivery. In S0, insecurity may prevent direct provision, and some prescriptions cost more than the budget allows. The state determines what is prescribed; the budget determines how fast; a minimum floor of support is kept regardless of state and is not subject to cost-effectiveness comparison. Conditions for withdrawing and for resuming engagement are stated in advance, and states are re-assessed as data change.
 - **Prioritisation does not disappear.** Budgets are finite, so some places will wait for the prescription their state calls for. We make the criteria explicit and open to challenge. Today such choices are often made on other grounds: a user of the WPdx platform reported that before it, water point sites were chosen by assumption and political decisions [1].
 - **Indicators as targets.** Once funds or reputations depend on an indicator, it can stop measuring what it measured. Publishing the rules and the sensitivity of each label (Section 6) helps but does not solve this.
 - **Stigma and misuse.** Labels can stigmatise the places they describe, and fine-grained data on insecure places can be misused by hostile actors. Phone- and satellite-based estimates raise privacy questions, and some people are not captured at all.
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10. Open questions for reviewers

1. At what unit do thresholds operate (household, community, watershed, district)? We hypothesise a small area. Where is the evidence strongest?
2. Which indicators best predict persistence of gains, which can be measured at small scale now, and which need new data collection?
3. Is the tree in Section 5 the right structure? Are four states too few or too many, and are the tests the right ones?
4. Does safety act as a gate, or as one indicator among others?
5. Is a composite score useful or harmful? Averaging lets strength in one dimension offset a bottleneck in another, the opposite of a threshold logic. Would a minimum, or a profile, be better?

6. What should count as an adequate prescription for places in S0, and what data-governance and privacy standards should apply to small-area data on them?
 7. Who should maintain such a picture, so that it is trusted?
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11. What would change our mind

- The same prescription is best in every state, so diagnosis adds little.
 - Tipping points are rare in the domains and at the scales that matter, so a smooth-trend view is enough.
 - Water, education, exposure and protective-capacity indicators add no information beyond violence history and neighbouring conditions.
 - Existing indicator systems already predict persistence as well as any combination we would propose.
 - Neighbour effects disappear once common shocks are removed. We would then not claim diffusion.
 - Publishing small-area states worsens allocation, for example if funds chase scores or places are penalised for low ones.
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12. Known weaknesses of our current work

- The website's prototype map covers 94 countries with hand-entered approximate values. It is a display prototype at country level, not an application of the method described here. It no longer shows a weighted-average composite, which contradicts the threshold logic.
 - The country is the wrong unit for the question we are asking. The map is national as a first step, because small-area data for all of our indicators do not yet exist.
 - The four states are a hypothesis, not a validated typology.
 - The field account on the website is one organisation's description of its community. It is not evidence for tipping points or for state-dependent prescriptions.
 - Our search for similar work was not exhaustive (Appendix A).
 - Safety, water and education are a starting set, not a validated one.
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13. What we ask of reviewers

- Evidence on thresholds and persistence at small scale, for or against.
- Critique of the state tree, the indicators and the persistence definitions.
- Pointers to similar work that we should build on instead.

- Written comments, or a 20 to 30 minute conversation. Public critique is welcome.

Contact: via LinkedIn or X (@3principles_org). A direct email address will be added.

Appendix A: What we checked

This is our judgement, not an exhaustive review. ○ = yes, △ = partly, × = no. The four attributes are: (1) small area, finer than province; (2) safety included, alongside other dimensions; (3) persistence or relapse used as the outcome; (4) linked to external inputs.

Effort	(1) Small area	(2) Safety and other dimensions	(3) Persistence as outcome	(4) Linked to inputs
Subnational HDI [26]	× (regions)	× (no safety)	△ (levels over time)	×
Global MPI, subnational [27]	× (regions)	× (no safety)	△ (trends, 84 countries)	×
INFORM Subnational [23]	△ (administrative units, specific regions)	△ (risk, including coping capacity)	×	×
FEWS NET [28]	△ (livelihood zone by administrative unit)	× (food only)	△ (short-term projections)	×
Relative Wealth Index [16]	○ (2.4 km)	× (wealth only)	× (repeated estimates not checked)	×
WPdx [1]	○ (point)	× (water only)	○	△
UCDP, ACLED, ViEWS [22][32]	○	× (violence only)	○ (violence)	×
FAO RIMA [29]	× (household)	△ (several dimensions, household level)	△ (limited panels)	△
Household-level research [12][30][31]	△ (household, neighbourhood)	×	○	○ (Bangladesh)

To our knowledge, no effort scores ○ on all four. INFORM Subnational is closest in structure, but it describes risk for particular regions and has not been validated against the persistence of gains.

Appendix B: Defining persistence

A gain is an improvement. Persistence is whether it holds after external input ends, or after a set time. A place is treated as having crossed a threshold when gains persisted for N years after input ended. N and K below are to be chosen with

reviewers.

Dimension	Gain	Persistence (outcome)	Candidate data	Issues
Water	A new or repaired water point	Functional at revisit after N years	WPdx: GPS, visit date and functional status, with records of the same point linked [1]	Revisit frequency and contributor bias vary
Safety	A set period with no recorded violent events	No recurrence within K years	UCDP GED, with ACLED as a supplement [19]	Reported events only; no record is not peace
Wealth and livelihoods	A rise in wealth or assets	Stays above a set level	Subnational HDI and MPI series [26][27]; whether the wealth index has repeated vintages needs checking [16]	Regions are large; HDI values for years without observations are interpolated [26]
Education	A rise in attendance or learning	The gain is maintained	Household surveys are candidates; small-area series not yet verified	Unverified

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