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Counted but Unknown

Why reaching the most vulnerable countries is not the same as verifying which people benefit from adaptation finance; and how to establish reach without identifying anyone

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FOR CLIMATE FUNDS AND THEIR BOARDS, ACCREDITED ENTITIES, IMPLEMENTERS, ADAPTATION FINANCE NEGOTIATORS AND SCHOLARS

ABSTRACT

Who are the particularly vulnerable that adaptation finance is for? And did they become less vulnerable because of it? The climate treaties name these people: those "particularly vulnerable to the adverse effects of climate change". This working paper reads the full portfolio of the largest dedicated fund, the Green Climate Fund (372 projects, US$21.31 billion, frozen 12 October 2026), against that mandate, in a registered analysis. The good news comes first, and it is real. The Fund sends 62.1 percent of its adaptation funding to Least Developed Countries, Small Island Developing States and African States, above the floor of 50 percent its Board aimed for in 2014. A registered test for underfunding of the most vulnerable countries is defeated under two vulnerability indices. The Fund's simplified approval track reaches first disbursement in 8.8 months, against 14.1 for regular proposals. Then the bad news: the record answers neither question. Nobody can say who these people are, let alone whether they are less vulnerable. The record holds a country and a count, and the count cannot be read as people. By the Fund's own adaptation indicator, adopted in 2014 as the "total number of direct and indirect beneficiaries; number of beneficiaries relative to total population", 18 single-country projects reach more than 100 percent of their country, because the convention lets a project add direct beneficiaries on top of indirect ones, and ten projects count nearly the whole nation as indirect; under the most generous reading, 3 still exceed it. The implementers followed the form; the form cannot tell a resident from a beneficiary. Cost per direct beneficiary runs from US$0.57 to US$143,182. The Fund's own Board paper says why: its framework never specified "how substantial the support must be for a person to be counted". The fix does not require anyone to surrender a name. Confidential reach verification certifies the count, not the person: four tiers, from a population ceiling that needs no personal data to field verification of a sample and deduplication by encoded keys held by a trustee. It can supply the deduplicated beneficiary record that the Fund's harmonized results framework proposes, while the most vulnerable people at the end of the chain remain unnamed and are counted honestly.

KEYWORDS

adaptation finance; Green Climate Fund; beneficiaries; vulnerability; results measurement; confidential verification; privacy; recursive tail; Tail-End Standard

INTERACTIVE MAP

Counted but Unknown: interactive map

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Argument

Who are the particularly vulnerable that adaptation finance is for? And did they become less vulnerable because of it? These are the only two questions that matter to the people the money is named for, and the largest adaptation fund in the world can answer neither.

Adaptation finance is the stream of climate money that is about people. Mitigation is measured in carbon. Adaptation is measured, or is supposed to be measured, in the lives of those who bear a climate they did not make. The United Nations Framework Convention on Climate Change (Article 4.4), the Paris Agreement (Articles 7.5 and 9.4) and the Green Climate Fund's own Governing Instrument (paragraphs 2 and 52) all name the same people: the particularly vulnerable.

This paper holds the Fund to those words and delivers its verdict in the order the evidence demands. The good news comes first, stated as it is, because it is true and because funds that do the hard part well deserve to hear it. Then the bad news, which is simpler and worse: the Fund cannot say whom its money reaches, because it never defined who counts. Then the solution.

This paper makes three claims. First, across countries, the Green Climate Fund broadly honors its mandate: the most vulnerable countries are not shortchanged, and its fast track is fast. Reaching the most vulnerable countries is not the same as reaching the most vulnerable people. Second, inside countries, the record is blind by design: a beneficiary is anyone "likely to benefit", counted on assumptions, and the convention lets a project count the whole nation. Third, the remedy that the Fund's harmonized results framework proposes, a deduplicated record by sex, age and vulnerable group, can be delivered without building a register of the poor. Verify the count, not the person.

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The good news, as it is

The analysis was registered and checksummed before any figure was compared with vulnerability, any delay was computed, or any rule was tested. The data are the Fund's open portfolio (372 approved projects, frozen 12 October 2026), the INFORM Risk Index (Mid 2026) as the primary measure of country vulnerability, the ND-GAIN index (2023) as a sensitivity, and World Bank population. Every deviation from the registration was logged; one, a more generous reading of the population test, was added after the first results were seen and is reported beside the stricter reading.

TEST	RESULT	HOLDS FOR THE MANDATE?
Share of adaptation funding to LDCs, SIDS and African States	62.1 percent (floor aimed for: 50 percent)	Yes
Tail underfunded per person, most vulnerable half (INFORM)	Ratio 2.56 (0.75 to 5.21)	Yes: not underfunded
Tail underfunded per person, LDCs, SIDS and African States within that half (INFORM)	Ratio 0.86 (0.37 to 1.66)	Yes: not underfunded
Tail underfunded per person, most vulnerable fifth (INFORM; ND-GAIN)	Ratio 1.50 (0.62 to 2.99); 2.57 (1.09 to 5.75)	Yes: not underfunded
Simplified track faster to first disbursement	8.8 vs 14.1 months; −5.4 (−7.3 to −2.9)	Yes
Delay falls harder on the most vulnerable third	13.3 vs 12.7 months; +0.6 (−2.0 to 2.8)	Yes: it does not

The country floor holds. Of US$10.36 billion in adaptation-weighted funding, 62.1 percent goes to Least Developed Countries, Small Island Developing States and African States, above the floor of 50 percent the Board aimed for in 2014 (Decision B.06/06, paragraph 1(b)).

The registered finding is defeated. The registration predicted that the most vulnerable countries would receive less adaptation funding per person than their less vulnerable neighbors, at one or more levels of a recursive tail. They do not. At no level, under either index, is the tail underfunded; under ND-GAIN, the most vulnerable fifth receives 2.57 times the per-person funding of the rest (90 percent interval 1.09 to 5.75). A registered prediction that fails is reported as a failure. This one failed in the Fund's favor.

The fast track is fast. The Governing Instrument promises "a streamlined programming and approval process to enable timely disbursement" (paragraph 53). Projects approved through the Simplified Approval Process reach their first disbursement in a median of 8.8 months; regular proposals take 14.1 (difference −5.4 months, 90 percent interval −7.3 to −2.9), in every run. And delay does not roll downhill: the most vulnerable third of countries waits 13.3 months, the least vulnerable 12.7, a difference indistinguishable from zero (+0.6, −2.0 to 2.8).

One caution belongs in the good news, because it is part of it. The two indices disagree about which countries are most vulnerable. Under ND-GAIN, which measures climate vulnerability, funding per person is unrelated to vulnerability (Spearman 0.05, −0.11 to 0.20). Under INFORM, which weighs displacement, conflict and food insecurity, the more vulnerable a country, the less it receives per person (−0.29, −0.43 to −0.15): a median of US$12.54 per person in the least vulnerable third, US$3.73 in the most. Climate-vulnerable countries get their share. Fragile ones may not.

The bad news: we do not know who they are

The mandate names a who. The record holds a where and a how many. For each project the Fund's portfolio records the countries served and two numbers, direct and indirect beneficiaries. There is no field for the community, the group, the household, the gender, or the vulnerability of a single person reached. The particularly vulnerable are written into the treaty and written out of the data.

The count cannot be read as people, and the fault lies in the rule. Every one of the 288 adaptation and cross-cutting projects reports beneficiaries. Among the 216 single-country projects with population data, 18 score above 100 percent on the Fund's own adaptation indicator. That indicator is not this paper's construction. In 2014 the Board adopted, as its core indicator for adaptation, the "Total number of direct and indirect beneficiaries; number of beneficiaries relative to total population" (Decision B.07/04, paragraph (d)). The Fund adds the two counts and divides by the population; this paper only did the arithmetic the Board asked for.

The Board adopted the ratio and never defined its parts. Its integrated framework of 2021 keeps "direct and indirect beneficiaries reached" as a core indicator, counted in individuals, converted from households "based on average number of people per household" where individual data are missing, and concedes that "the same beneficiaries can be impacted by two outcomes", with the guidance to prevent it deferred to a results handbook. Nowhere does it say whether indirect beneficiaries exclude direct ones. So, before reading the 18 as overcounts, give every implementer the most generous reading. Allow that indirect beneficiaries may already include the direct ones, so that the claim is the larger of the two numbers rather than their sum. Allow that counts are lifetime projections, so that the ceiling is the highest population on record from 2020 to 2025 or the population grown to the project's end year, whichever is larger. Under that reading, 3 of the 216 exceed the population: two in the Marshall Islands, whose population has been falling by about 3 percent a year, and one in Barbados that exceeds it by less than 1 percent. Not one is evidence that anyone invented a beneficiary.

PROJECT	COUNTRY	DIRECT, PERCENT OF POPULATION	INDIRECT, PERCENT OF POPULATION	SUM: THE FUND'S INDICATOR	LARGER OF THE TWO, GENEROUS CEILING
FP112	Marshall Islands	43	152	195	129 (above)
FP060	Barbados	67	101	168	101 (above)
FP066	Marshall Islands	129	32	161	110 (above)
SAP020	Micronesia (Federated States of)	60	99	159	99
FP094	Comoros	51	91	142	89
SAP018	Liberia	40	94	134	94
FP169	Micronesia (Federated States of)	48	81	129	80
FP288	Jordan	46	76	122	53
SAP022	Uzbekistan	30	87	118	84
SAP062	Dominica	13	98	111	96

PROJECT	COUNTRY	DIRECT, PERCENT OF POPULATION	INDIRECT, PERCENT OF POPULATION	SUM: THE FUND'S INDICATOR	LARGER OF THE TWO, GENEROUS CEILING
SAP014	Armenia	11	98	109	95
SAP003	Bahrain	8	100	108	100
SAP048	Togo	16	92	108	84
SAP041	Albania	30	78	107	72
FP154	Mongolia	15	90	105	82
FP213	Barbados	80	23	103	79
FP298	Bahamas	53	50	103	52
FP040	Tajikistan	22	80	102	80

What the other 15 reveal is the convention. Ten projects count 90 percent or more of the national population as indirect beneficiaries: the whole country, by assumption. Direct beneficiaries are then added on top. The Fund's definition treats the two as distinct (direct beneficiaries are targeted, indirect ones are not), so the sum is exactly what its record invites, and its own Board paper calls the result "institutionally sanctioned double-counting". The same convention compounds across projects. In Barbados, the Federated States of Micronesia, the Marshall Islands and Tajikistan, direct beneficiaries summed over the Fund's single-country projects exceed the national population (213, 176, 172 and 110 percent). A person can benefit from four projects. Without a deduplicated record, nobody can say how many people that is.

Across the 289 projects that report direct beneficiaries, GCF funding per direct beneficiary runs from US$0.57 to US$143,182, with a median of US$114. At the bottom, a US$5 million grant to Tajikistan's hydrometeorological agency (FP075) claims 8,735,000 direct beneficiaries, more than 80 percent of the country's population, each reached with 57 cents. A forecast service may well serve a whole nation. But then the word beneficiary means a resident, and it cannot tell a funder whether a single herder in the Pamirs received a warning she could act on.

The money travels a long chain. Accredited entities with international access carry about four-fifths of adaptation funding to the most vulnerable third of countries (79.6 percent) and to the least vulnerable third alike (81.4 percent). The people at the far end of that chain are exactly those the record cannot see. In India, the Fund's adaptation money comes to US$0.15 per person; in Uganda, US$2.13; in Bolivia, US$7.83. International entities carry 25 percent of India's adaptation money, 80 percent of Uganda's and all of Bolivia's. None of their projects says who was reached.

The second question fares worse than the first. If the record cannot say who was reached, it cannot say whether they became less vulnerable. A beneficiary is counted when a project is designed, on assumptions, as a lifetime projection; nothing in the record returns to the same people to ask whether their exposure, their losses or their capacity to recover changed. Whether adaptation finance made anyone less vulnerable is, on this record, unknowable.

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Why: the Fund's own words

The blindness is written into the rules. The Fund's Harmonized Results Management Framework, prepared for the Board meeting of 26 to 29 October 2026 (GCF/B.46/11/Rev.01), states the definition and its gap in a single paragraph:

Direct beneficiaries "receive targeted support"; indirect beneficiaries "are not targeted but are likely to benefit, with their number usually estimated using conservative assumptions. The IRMF did not, however, specify how to establish whether support is targeted, or how substantial the support must be for a person to be counted." (paragraph 28)

The same paper finds that "vulnerability dimensions (gender, vulnerable groups, Indigenous Peoples) are not consistently disaggregated across existing indicators" (Finding 8); that the framework "produces institutionally sanctioned double-counting" (Findings 2 and 3); and that accredited entities name "double counting or ambiguity in indicators (43 per cent)" and "lack of clarity in indicator definitions (43 per cent)" among their top challenges.

Read the definition again. A person counts if she is likely to benefit, on assumptions, with no threshold of support and no rule for telling targeted from untargeted. A record built on that definition was built to count people, never to know them. It has no way to name the particularly vulnerable.

The remedy is on the table, and it is late. The paper proposes a "shared beneficiary record that distinguishes direct and indirect beneficiaries, female and male beneficiaries, age groups and vulnerable groups, with a deduplicated roll-up so that the same person is counted only once". Twelve years earlier, in 2014, the Board decided that results "should be disaggregated by gender where relevant" (Decision B.07/04, paragraph (i), 21 May 2014). Twelve years is a generation of adaptation projects designed, approved and closed without a record of whom they reached.

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The solution: verify the count, not the person

The obvious fix is the dangerous one. A fund that wants to know who its money reaches could demand names, identity numbers and household lists. That would put the poorest people on earth into a central register held by institutions they cannot hold to account, in countries where being on a list can mean being targeted. The people the mandate protects have a right not to be known.

Confidential reach verification resolves the conflict by separating what must be known from who must know it. Names stay with the household and the implementer. A verifier checks them under seal. The fund receives a certified distribution, with intervals, and never a name. It has four tiers, and a project buys the tiers its claim requires.

TIER	WHAT IT CHECKS	PERSONAL DATA THE VERIFIER SEES	WHAT THE FUND RECEIVES
0. Plausibility	Reported counts against the population of the area served, alone and across overlapping projects	None	A pass or fail against the population ceiling
1. Code to the data	Counts by sex, age, tail group and intensity, computed inside the implementer's systems	None; script and register attested by checksum	Certified aggregates
2. Field sample	Existence, targeting, intensity and tail position of a random sample and a tail sample	A sealed sample, destroyed six months after the report	A verified count with error rates and intervals
3. Deduplication	Overlap between projects serving one area	None; a trustee sees only encoded identifiers	A deduplicated total

Tier 0 needs no personal data at all, and it already sorts the 18 projects above: 15 that exceed the population only when direct and indirect beneficiaries are added, and 3 that exceed it under any reading. Tier 1 sends the code to the data rather than the data to the code: a published tabulation script runs inside the implementer's systems and writes only aggregates, attested by checksum. Tier 2 sends trained enumerators, speaking the respondents' language, to a random sample and a tail sample of the register, with consent, to verify the four things the Board paper says the framework never defined: that the person exists, that the support was targeted, how much support arrived, and where the household sits in the tail (land, tenure, caste or tribe, gender of the household head, disability, age). Tier 3 deduplicates across projects through encoded identifiers (privacy-preserving record linkage with Bloom-filter encodings; Schnell, Bachteler and Reiher 2009) sent to a linkage trustee, such as a national statistics office, which returns only the number of overlaps.

What the fund receives matches the Board's proposed record field for field: verified direct beneficiaries with a 90 percent interval and the share by which the reported figure overstated them; shares by sex, age group and tail group, each tested against that group's share of the local population; the distribution of support per household; a deduplicated total; and indirect beneficiaries reported separately, labeled as estimates, capped by the population ceiling.

The safeguards are part of the design. No published cell covers fewer than 100 households drawn from at least 20 sampling clusters. For small populations, such as small island states, published shares carry calibrated and declared statistical noise (differential privacy; Dwork 2006). Access follows the five safes: safe people, projects, settings, data and outputs (Desai, Ritchie and Welpton 2016). National identity numbers are never collected; in India, no Aadhaar number, consistent with Section 29 of the Aadhaar Act, 2016. Names are kept apart from answers and destroyed six months after the final report. Every sampled household receives a route to complain that does not pass through the implementer.

Implementers gain the most. An implementer that can show whom it reaches can win adaptation finance on that evidence, report in the format the Fund's framework proposes, and never hand anyone a list of poor households. A verified count is also a protected count: it cannot later be shown to exceed the population it serves.

The same design answers the second question. A Tier 2 sample drawn at the start of a project and revisited at its end, with the same consent and the same seal, measures whether the households reached became less vulnerable: fewer losses, faster recovery, a better position in the tail. The fund receives the change, with intervals, and still never a name.

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What would overturn this, stated in advance

Any one of these would overturn the bad news: a published, deduplicated beneficiary record by sex, age and vulnerable group covering a fund's adaptation portfolio; field verification showing that project registers match the households they list; or reported counts that, project by project, stay within the populations they claim to serve. Any one of these would overturn the good news: a disbursement record showing that the most vulnerable countries receive their funding later or not at all once never-disbursed projects are counted; or a vulnerability index that both measures climate risk and finds the most vulnerable countries underfunded per person.

The governance of the money

A companion working paper (Tailwinds 2026-11) reads the same portfolio through the Map of Maps of Governance (Ramprasad 2026a), testing how decisions about adaptation finance propagate from boards through intermediaries to the ground. Of seven propagation rules, one holds (Islands: the simplified track is faster), two fail (Downhill: delay does not fall harder on the most vulnerable; Broker: intermediation is uniform at about four-fifths), and four were declared untestable on these data before the analysis began.

Confidentiality, privacy and data sharing

This analysis uses public, project-level records published by the Green Climate Fund, a vulnerability index released by the European Commission's Joint Research Centre, an academic vulnerability index used here for research, and World Bank population. None contains the name of a person or household. No project is accused of misconduct: a count above a population is a statement about a definition, and the Fund's own Board paper is the source for that definition. When Tailenders Analytics verifies reach for a client, it follows the Tailenders Privacy and Confidentiality Policy, the Tail-End Protocol and the safeguards in Section 4, under a written data agreement covering purpose, consent, retention and what each party receives. Applicable law is checked for each engagement; in India, the Digital Personal Data Protection Act, 2023 and its Rules, 2025.

Limits

The analysis is at the level of countries; the who inside countries is the record's gap, and these data cannot fill it. Only the Green Climate Fund is examined. Beneficiary counts are lifetime projections reported by accredited entities, compared with current population, so the comparison is approximate; a count above the population is implausible as a count of people, but it is not proof that any person was not reached. Multi-country projects are split equally among their countries (a single-country sensitivity agrees). Sixty-three approved projects have never disbursed and are excluded from the timing tests. The population test in Section 2 was made more generous after the first results were seen, at the author's request; the stricter reading is reported beside it, and both are logged. The two vulnerability indices disagree country by country, and that disagreement is part of the finding. The design in Section 4 has not yet been piloted; a first pilot, Tiers 0 to 2 on a single project with consent and arm's-length payment, will be published whatever it shows.

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