

What must a just-transition policy package contain?

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Status: cross-sector research note for the Ghana gold-sector review. This identifies portable policy functions and local design parameters; it does not yet constitute the final meta-analysis methodology.

Executive answer

We can derive a general architecture, but not a universal list of instruments.

The portable part is a set of **functions** that a credible package must perform: define the harm to be reduced; protect people during disruption; expand genuinely viable options; make safer or lawful activity attainable where it can continue; change the distribution of power and value; constrain the harmful system rather than only its most visible workers; repair past damage; prevent geographical and supply-chain displacement; and finance, monitor and adapt the package over time.

The context-specific part is **who receives what, in what amount, through which institution, in which places, in what sequence and for how long**. A training programme, licence, cash payment or purchasing rule is not a general solution. It is one possible instrument for performing a function, and its effect depends on land rights, markets, cash-flow needs, gender relations, political power, ecological limits and state capacity.

There is no single meta-analysis that establishes the effect of a complete, cross-sector just-transition package. The nearest evidence is:

- a realist review that screened 8,726 records and retained 76 studies describing 99 interventions in 45 developing countries; and
- a later fuzzy-set qualitative comparative analysis of 80 of those interventions, which found seven different configurations associated with positive climate-and-equity proxies.

The second study found robust funding and strategic planning in every reported positive configuration. But the configurations covered only 47.4% of positive cases, the regression sample was 79, and the outcome did not fully capture voice, agency or historical injustice. The finding is therefore a useful design hypothesis—not a universal causal law.

The most defensible research strategy is consequently an **umbrella review by policy lever plus a realist/configurational synthesis of packages**, followed by a Ghana transferability assessment. Pooling all interventions into one average effect would erase the mechanisms and distributions that matter.

1. What can be general, and what cannot?

Generalisable across contexts

1. **The functions the package must perform.** For example, income protection and environmental limits are necessary functions even though their instruments differ.
2. **The justice questions.** Who is recognised, who decides, who receives benefits, who bears costs, and how prior harm is repaired?
3. **The design tests.** Coverage, adequacy, accessibility, timing, duration, coherence, credibility, accountability, distribution, displacement and adaptability.

4. **The outcome domains.** Environmental harm, livelihood security, distribution, power and participation, durability, displacement and cost.

Necessarily context-specific

1. **Recipients.** Owners, operators, wage workers, tenants, women in processing and service work, traders, migrants, neighbouring farmers and downstream communities need different responses.
2. **Amounts and timing.** Support must match the size, frequency, uncertainty and seasonality of the income or service being replaced.
3. **The pathway offered.** Safer mining, diversification, restoration work, agricultural support, relocation or exit will not be feasible for the same people or places.
4. **Environmental limits.** Some areas may permit improved mining; others may require an absolute prohibition because water, land or rights cannot be protected adequately.
5. **Delivery institutions.** A technically sound instrument can fail where the responsible body is underfunded, inaccessible, captured or not trusted.
6. **Sequence and duration.** The time needed to secure land, develop buyers, learn a skill or restore income varies; restrictions cannot safely assume those conditions already exist.
7. **Geographical scale.** The relevant system may extend beyond a district or Ghana through migrant labour, equipment, finance, trade and refining networks.

The practical rule is: **standardise the questions and outcome tests; localise the answers and instruments.**

2. Nine functions for a complete policy package

Function	Question the package must answer	Typical instruments to investigate	What happens if it is absent
1. Direction and ecological guardrails	What absolute harm must fall, where is mining incompatible with water, land or rights, and by when?	Watershed and no-go rules; mercury and tailings limits; land-restoration standards; measurable reduction targets.	Licences, arrests or official exports become proxies for success while total damage continues or grows.
2. A transition floor	How are food, income, health, housing and debt protected while activity changes?	Time-limited cash or income support; debt protection; social insurance; basic services; wage or revenue bridging.	People absorb the policy as hunger, debt, unsafe work, distress migration or renewed clandestine activity.
3. Real capabilities and livelihood options	Can people actually choose among viable pathways with comparable cash timing, risk, land, credit and buyers?	Productive assets; affordable finance; land and tenure support; childcare; skills linked to demand; market access; producer organisation; restoration employment.	“Alternatives” are added to mining rather than replacing it, or are abandoned because they pay too little, too late or too uncertainly.
4. An attainable safer/legal route	Where mining can continue, can smaller actors comply without surrendering control to better-connected operators?	Proportionate licensing; suitable authorised land; shared compliance services; technical assistance; safety and labour rights; maintenance finance.	Formalisation raises barriers, concentrates licences and leaves harmful production intact beneath a legal transaction.
5. Power, rights and value distribution	Who controls land, licences, finance, prices, organisations and decisions?	Worker and producer organisation; co-decision; transparent prices; tenure and use rights; gender-responsive membership and governance; grievance systems.	Benefits are captured by owners, licence holders, leaders, buyers or political intermediaries while workers and affected non-miners pay the cost.
6. Constraint of the harmful regime	Which rules change the incentives and capacity of organisers, financiers, equipment owners, buyers and refiners—not only workers at mine sites?	Targeted enforcement; equipment and finance controls; purchasing conditions; buyer and refiner due diligence; liability; enforceable no-go zones.	Support creates new activity without reducing the old one, or policing falls mainly on the easiest and least powerful targets.

Function	Question the package must answer	Typical instruments to investigate	What happens if it is absent
7. Repair and remedy	How are damaged land, water, health and lost livelihoods restored, and who can claim remedy?	Restoration guarantees; rehabilitation jobs; independent water and health monitoring; compensation; health care; accessible claims and appeals.	The transition protects future production while leaving present and past victims with uncompensated damage.
8. Spatial and value-chain coordination	How will the policy detect and prevent relocation, trade diversion, origin laundering and cost-shifting?	District and ECOWAS coordination; interoperable origin and customs data; migrant protections; regional environmental monitoring; shared buyer/refiner rules.	Apparent success in one place is purchased through damage in another.
9. Durable finance, coordination and learning	Who pays, for how long, which body coordinates the package, and what triggers correction?	Multi-year public and buyer finance; accountable delivery bodies; independent evaluation; public dashboards; periodic review and redesign.	Short pilots expire, institutions contradict one another, promised support loses credibility and harmful components persist after failure.

This is a framework of functions, not a recommendation that every listed instrument be used.

3. Parameters for judging the quality of the package

Each component should be assessed against the same parameters.

1. **Coverage:** Does it reach everyone whose income, rights or environment is affected—including people without licences, titles or formal employment?
2. **Adequacy:** Is the support large and reliable enough to change the choice it is meant to change?
3. **Accessibility:** Can people use it given fees, documents, distance, literacy, gender norms, land access and migration status?
4. **Timing:** Is protection operating before restrictions impose losses?
5. **Duration:** Does support last until the alternative becomes viable, and what happens when it ends?
6. **Complementarity:** Do income, land, finance, skills, buyers, infrastructure and regulation reinforce one another, or does one missing element make the rest unusable?
7. **Credibility:** Do people reasonably expect promises, purchasing terms and finance to persist?
8. **Distribution:** Who gains and loses within households, work teams, communities and the value chain?
9. **Power and accountability:** Can affected people influence design, inspect decisions, appeal and obtain remedy?
10. **Administrative feasibility:** Can responsible institutions implement the component without exclusion, delay or capture?
11. **Additionality and rebound:** Does the measure reduce total harm, or merely improve efficiency, increase profitability or subsidise action that would have occurred anyway?
12. **Leakage and displacement:** Does extraction, pollution, violence, labour, finance or trade move elsewhere?
13. **Adaptability:** Are there pre-agreed thresholds for expanding, redesigning or stopping the measure?

4. What the strongest cross-sector reviews actually establish

Study	Method and evidence base	What it supports	Main methodological caution
Yeung et al. (2026), realist review	Four databases and 30 websites; 8,726 records; 76 retained studies; 99 interventions in 45 non-Annex-I countries across energy, agriculture/food, ecosystem services and infrastructure. The team reconstructed theories of change and coded activities, outputs, outcomes, barriers and enablers.	Recurring enablers included robust finance, alignment with needs, political ownership, social dialogue and engagement. Recurring barriers included legal/bureaucratic obstacles, unequal benefit distribution, institutional fragmentation and inadequate skills.	This is an explanatory evidence map, not a pooled causal estimate. Sixty-four interventions had no reported climate outcome and 58 had no reported social-equity outcome. Evidence was English-only, concentrated in wealthier developing countries and largely qualitative or ongoing.
Gather, Prowse & Seussler (2025), realist review re-analysis and fsQCA	Calibrated 28 conditions from the realist-review cases; fuzzy-set qualitative comparative analysis of 80 interventions and fractional logistic regressions on 79.	Seven different configurations were associated with positive climate-and-equity proxies. Funding and strategic planning appeared in every reported positive configuration; most other conditions mattered in some configurations but not others. This supports a configurational rather than single-lever model.	The complex solution covered 47.4% of positive cases. Calibration relied on published reports and researcher scoring. The outcome captured jobs, protection and rights better than voice, agency or historical injustice. "Absence" of reported engagement cannot establish that participation is unnecessary.
Roe et al. (2015), alternative-livelihood systematic map and review	Searched 22,146 records; mapped 97 studies covering 106 projects; only 21 studies met the review criteria for assessing conservation effectiveness.	An alternative activity does not necessarily substitute for a harmful livelihood; it may simply join the household portfolio. Projects require an explicit theory of change, market realism and direct monitoring of the environmental target.	Evidence was too sparse and heterogeneous to identify which alternatives work. Only one reviewed study measured a positive change in the biodiversity target directly; most relied on attitudes or self-reported behaviour, and confounding was often inadequately addressed.
Leight, Hirvonen & Zafar (2024), cash and cash-plus meta-analysis	104 experimental or quasi-experimental studies, 155 treatment arms and 305 estimates across 43 LMICs; random-effects and multilevel models; risk-of-bias and non-reporting-bias tests.	Cash reliably supports consumption and income in the observed period; livelihood-oriented "cash plus" packages had larger average effects than cash alone. This supports a transition floor plus complementary capability-building rather than training without income protection.	It is an IFPRI discussion paper, not externally peer reviewed. Follow-up was mostly short; costs of cash-plus were often missing; publication bias probably inflates estimates; no significant average effect on labour-force participation was found. It does not test exit from harmful activity.
Card, Kluve & Weber (2018), active-labour-market meta-analysis	207 counterfactual evaluations; 526 programme/participant groups and 857 estimates at short, medium and longer horizons.	Training and other human-capital programmes often look weak initially but improve after two to three years; job-search-first measures act sooner; effects vary by participant group, with larger average estimates for women and long-term unemployed people.	The sample is dominated by European and other formal labour markets; only about a fifth of studies were from non-OECD and Latin American/Caribbean settings combined. Studies mostly estimate partial-equilibrium employment effects, rarely full costs, community effects or job availability at scale.
Jessen & Kluve (2021), formalisation meta-regression	Systematic search and full-text screening; 38 causal or quasi-causal studies, 170 estimates in 15 LMICs; 60% of estimates were from Latin America.	Registration simplification alone is not enough. Tax incentives, information as part of a package, longer horizons and economy-wide policies were more often associated with positive formalisation outcomes; worker registration was easier to shift than firm registration.	More than 70% of estimates concern registration rather than welfare. The study asks whether formality increased—not whether income, power, environmental conduct or exclusion improved. Half of estimates were statistically indistinguishable from zero. It cannot justify enforcement-first mining formalisation.
Snilsveit et al. (2019), payments for environmental services mixed-methods review	44 impact-evaluation studies and 60 qualitative studies covering 18 programmes in 12 LMICs; random-effects meta-analysis where outcomes were comparable and thematic synthesis of mechanisms.	Conditional payments may reduce deforestation, improve forest cover and raise income in some contexts. Targeting, understandable conditions, local governance and sustained finance shape access and durability.	More than half of impact evaluations had critical risk of bias; evidence was dominated by three programmes; effects were heterogeneous; seven programmes did not measure environmental outcomes. The authors call large-scale replication without piloting and evaluation high risk.

Study	Method and evidence base	What it supports	Main methodological caution
d'Armengol et al. (2018), small-scale-fisheries co-management review	Systematic search reduced 626 records to 67 articles describing 91 cases; coded ecological, socioeconomic, governance and adaptive-management outcomes.	Legal recognition of rights, involvement of diverse resource users and adaptive management were associated with better reported social and ecological outcomes.	Mostly observational case evidence; outcome reporting was uneven, and conflict, power and equity were under-studied. It supports a governance hypothesis, not a transferable effect size.
Walk et al. (2021), gender and coal-transition systematic map	More than 3,100 abstracts screened, 247 full texts read and 73 publications mapped.	Formal-worker programmes can miss women whose paid, unpaid and informal roles are outside the mine payroll. Transitions changed household labour, secondary employment, migration, identity, care burdens and political organisation; women often lacked access to union structures.	The evidence is mostly qualitative, historical and concentrated in the Global North. It maps recurring risks but cannot estimate their probability in Ghanaian artisanal mining.

5. What conceptual frameworks add—and what they do not prove

Three frameworks help organise the package but should not be mistaken for impact evidence.

- **Green and Gambhir (2020)** distinguish compensation, exemption, structural-adjustment assistance and comprehensive adaptive support. Their multidisciplinary narrative review argues that broad, forward-looking support can address financial, social, cultural and place-based losses. It is a useful typology; it is not a systematic effect review.
- **Kivimaa and Kern (2016)** argue that transitions require both creation of alternatives and destabilisation of the incumbent harmful system. Their framework explains why livelihood support without environmental constraint may add another activity, while prohibition without creation removes options. Its empirical application concerns energy-efficiency policy in Finland and the United Kingdom, not informal mining.
- **Rogge and Reichardt (2016)** propose judging policy mixes by consistency, coherence, credibility and comprehensiveness, across policy strategy, instruments and policy processes. This is an analytical framework for examining interaction and contradiction, not proof that a particular mix works.

Together they suggest a useful rule: a just-transition package needs **protection, creation, constraint and repair**, held together by credible institutions and finance.

6. Measures that are particularly dangerous when used alone

1. **Enforcement before protection and alternatives:** can remove income faster than it removes demand, finance or extraction capacity.
2. **Licensing alone:** can increase formal status while concentrating access and leaving conduct unchanged.
3. **Training alone:** cannot create jobs, land, finance, buyers, childcare or income during the learning period.
4. **Cash alone as an exit policy:** protects consumption but does not by itself create a durable livelihood or reduce mining.
5. **An “alternative livelihood” project without an explicit substitution mechanism:** may supplement rather than replace mining.
6. **Cleaner technology alone:** may reduce harm per unit while increasing profitability and total extraction.

7. **Traceability or official purchasing alone:** can formalise the transaction rather than the production process.
8. **Buyer disengagement alone:** may move gold to less accountable routes while leaving production and livelihoods unchanged.
9. **Participation without power or rights:** consultation can legitimise a predetermined intervention while owners and officials retain control.
10. **Short pilot funding:** can produce temporary compliance followed by reversal when payments, maintenance or staff disappear.

7. Provisional application to Ghana's gold sector

The cross-sector evidence strengthens—not replaces—the package already emerging from the Ghana and comparative mining studies.

Before a restriction

- define absolute land, water, health and restoration targets;
- identify all affected groups, including informal and unpaid roles;
- measure mining's functions for each group: cash timing, credit, land access, buyers, employment, risk-sharing and social status;
- establish income, food, debt and health protection;
- secure land, finance, buyers and care support for more than one livelihood pathway; and
- test whether proposed options can match actual net earnings, timing, risk and durability.

While changing production

- make licensing and environmental compliance attainable for smaller actors;
- distinguish mine owners, operators and workers in eligibility and benefit rules;
- link public purchasing to mine-level verification, corrective support and competitive prompt payment;
- protect worker rights and give affected communities decision power and remedy;
- combine technical improvement with absolute environmental limits; and
- finance restoration and health measures as part of the package, not as an unfunded future obligation.

When enforcing limits

- phase restrictions only after promised protections are operational, except where an imminent danger requires emergency action;
- target organisers, abusive financiers, fraudulent licence holders, equipment networks and buyers as well as mine sites;
- apply due process and monitor selective, gendered and migrant-targeted enforcement; and
- measure extraction, pollution, income loss and displacement in likely destination districts and countries.

Across the region and supply chain

- coordinate origin, customs, equipment and financial intelligence through ECOWAS mechanisms;
- align buyer/refiner responsibility and corrective-finance expectations so exclusion in one market does not create leakage to another;

- protect migrant workers and border communities; and
- treat a fall in Ghanaian official purchases or exports as a trade indicator, not proof of reduced extraction.

8. The minimum outcome set

A component or package should not count as successful unless it is assessed across all six domains.

Domain	Minimum questions
Absolute environmental harm	Did total disturbed land, water contamination, toxic exposure and unrestored land fall—not only harm per gram of gold?
Livelihood security and real options	Did net income, food security, payment regularity, debt, assets and ability to refuse harmful work improve?
Distribution and recognition	What happened separately to owners, workers, tenants, women, youth, migrants, traders and non-mining communities?
Power and procedure	Who set the rules, controlled resources, had access to information, appealed decisions and obtained remedy?
Displacement and durability	Did harm move across people, places, commodities or trade routes, and did results persist after support ended?
Implementation and cost	What was delivered, to whom, at what cost, with what take-up, exclusion, delay and institutional failure?

9. What research design follows from this evidence?

A conventional single meta-analysis is not appropriate for the overarching question because a licensing reform, cash transfer, co-management arrangement and regional traceability rule do not share a common treatment or outcome.

The next-stage methodology should combine:

1. **An umbrella review by lever** to locate systematic reviews and meta-analyses for income protection, livelihood packages, labour-market support, formalisation, environmental payments, co-management, enforcement and supply-chain measures.
2. **A realist synthesis** recording context-mechanism-outcome propositions: what function the intervention attempted, through which mechanism, for whom and under what conditions.
3. **Separate quantitative meta-analyses only where treatments, counterfactuals and outcomes are genuinely comparable.**
4. **A configurational analysis**—potentially qualitative comparative analysis—if enough comparable packages can be coded consistently. This would test combinations rather than isolated instruments.
5. **An evidence-and-gap map** crossing policy functions with the six outcome domains and affected groups, so missing environmental, gender or displacement evidence remains visible.
6. **A Ghana transferability assessment** examining whether the mechanism's necessary conditions exist and asking affected groups to test the interpretation—not merely endorse a preselected policy.

The final methodology should be designed together after reviewing this note and the underlying studies, as planned.

10. Priority full texts

Direct cross-sector combination evidence

1. Gather, J., Prowse, M. & Seussler, D. (2025), Pathways towards just transitions in the Global South. [DOI and publisher page](#) · [Local full text](#)
2. Yeung, T. et al. (2026), Realist Review on Just Transition Towards Low Emission, Climate Resilient and More Inclusive Societies in Developing Countries. [Open-access article](#) · [Local full text](#)

Component-level systematic reviews and meta-analyses

1. Roe, D. et al. (2015), Are alternative livelihood projects effective at reducing local threats to specified elements of biodiversity? [Open-access article](#) · [Local full text](#)
2. Leight, J., Hirvonen, K. & Zafar, S. (2024), The effectiveness of cash and cash plus interventions on livelihoods outcomes. [Repository record](#) · [Local full text](#)
3. Card, D., Kluve, J. & Weber, A. (2018), What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations. [Journal DOI](#) · [Local full text](#)
4. Jessen, J. & Kluve, J. (2021), The effectiveness of interventions to reduce informality in low- and middle-income countries. [Journal DOI](#) · [Local full text](#)
5. Snilsveit, B. et al. (2019), Incentives for climate mitigation in the land use sector—the effects of payment for environmental services. [Journal DOI](#) · [Local full text](#)
6. d'Armengol, L. et al. (2018), A systematic review of co-managed small-scale fisheries: Social diversity and adaptive management improve outcomes. [Open full text](#)
7. Walk, P. et al. (2021), Strengthening Gender Justice in a Just Transition: A Research Agenda Based on a Systematic Map of Gender in Coal Transitions. [Open-access article](#) · [Local full text](#)

Organising frameworks—not effect estimates

1. Green, F. & Gambhir, A. (2020), Transitional assistance policies for just, equitable and smooth low-carbon transitions. [Journal DOI](#) · [Local full text](#)
2. Kivimaa, P. & Kern, F. (2016), Creative destruction or mere niche support? [Open-access article](#)
3. Rogge, K. S. & Reichardt, K. (2016), Policy mixes for sustainability transitions. [Open-access article](#)

Bottom line

It is neither true that one universal package exists nor true that every case is too unique for general learning. The evidence supports a middle position:

Use a common architecture of policy functions, justice tests and outcome measures; design the instruments, recipients, scale and sequence from the local livelihood system and political economy.

For Ghana, that means no measure should be assessed in isolation. The unit of analysis should be the package and its sequence, and success should require a simultaneous reduction in absolute harm, an expansion of real livelihood options, fair distribution and no hidden displacement.