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## Post-Conflict Reconstruction: Urban Planning Frameworks and Financial Management of Public Projects

### Abstract

Post-conflict reconstruction is increasingly urban, fiscally constrained, and institutionally complex, requiring integrated approaches that link spatial planning, public investment management, and transparent procurement. An updated joint Rapid Damage and Needs Assessment estimates that, as of 31 December 2024, Ukraine's reconstruction and recovery needs amount to US\$524 billion over the next decade. This paper develops an implementable governance framework integrating (i) post-conflict urban recovery planning that restores housing, services, and livelihoods while embedding resilience principles ("Build Back Better"), and (ii) financial management practices that reduce leakage, cost overruns, and schedule delays. The approach synthesizes UN-Habitat's Urban Recovery Framework with IMF Public Investment Management Assessment (PIMA) concepts and World Bank public investment lifecycle controls, and maps these to procurement integrity mechanisms including the Open Contracting Data Standard and the World Bank Procurement Regulations for IPF Borrowers (Sixth Edition, issued February 2025; effective 1 March 2025). Results include an integrated delivery architecture (Figure 1), a reconstruction control matrix (Table 1), and a quantitative scenario illustrating how improving public investment efficiency can reduce implied financing needs while preserving delivery outputs (Table 2; Figure 4).

**Keywords:** post-conflict reconstruction; urban planning; public investment management; public financial management; procurement integrity; transparency; Ukraine



## 1. Introduction

Post-conflict reconstruction is a governance and delivery challenge as much as an engineering challenge. Urban systems—housing, transport, utilities, public space, and social infrastructure—become the practical arena for restoring basic human security, economic activity, and state legitimacy. However, post-conflict reconstruction is commonly pursued under constrained fiscal space, fragmented authority, damaged land administration, disrupted markets, depleted technical staff, and elevated corruption risk. These conditions increase the probability of cost overruns, schedule slippage, and suboptimal investments, including rebuilding assets without resilience standards or rebuilding in areas likely to depopulate. Ukraine's reconstruction context illustrates the macro-fiscal stakes. The Government of Ukraine, the World Bank Group, the European Commission, and the United Nations estimate that reconstruction and recovery needs total US\$524 billion over the next decade (as of 31 December 2024). This order of magnitude implies that reconstruction must be managed as a portfolio governed by prioritization, appraisal discipline, and delivery capacity constraints, rather than as an unconstrained list of projects. Large financing instruments are also tied to reforms and fiduciary conditions; for example, the EU's Ukraine Facility provides Union support for 2024–2027 under Regulation (EU) 2024/792. On the procurement side, the World Bank Procurement Regulations for IPF Borrowers (Sixth Edition) became effective on 1 March 2025, emphasizing value-for-money and structured procurement planning. Two streams of practice must be integrated to deliver reconstruction efficiently and legitimately: (1) post-crisis urban recovery planning and (2) public financial management/public investment management (PFM/PIM). UN-Habitat's Urban Recovery Framework (URF) is designed to create an enabling environment for recovery in crisis-affected urban areas by clarifying institutional arrangements, coordination mechanisms, policies and plans, and financing pathways. Financial management and investment governance determine whether recovery plans are converted into deliverable projects that withstand audit and donor scrutiny. The IMF's PIMA framework assesses infrastructure governance across the investment cycle and highlights recurrent weaknesses such as appraisal quality, selection discipline, and maintenance funding. This paper therefore proposes an operational integration of URF-based planning legitimacy with PIM/PFM lifecycle controls and procurement transparency. The central contribution is a minimum-viable governance architecture (Figure 1) and a control matrix (Table 1) that specify controls, evidence artifacts, and key performance indicators (KPIs) across the reconstruction pipeline. In addition, a quantitative scenario (Table 2; Figure 4) illustrates how closing a portion of the public investment efficiency gap can materially affect the financing required to deliver comparable reconstruction outputs.

## 2. Materials and Methods

The study applies a structured synthesis method combining (i) normative urban recovery frameworks, (ii) public investment management toolkits, and (iii) procurement transparency standards. The method is designed for replicability and produces two operational artifacts (Figure 1; Table 1) and one quantitative scenario analysis (Table 2).

**2.1. Source selection and inclusion criteria.** Sources were selected if they (a) are internationally recognized standards or institutional frameworks; (b) cover one or more stages of the public investment or contracting cycle; and (c) provide actionable requirements that can be mapped to controls and evidence artifacts. Core sources include UN-Habitat's URF, IMF PIMA guidance, the World Bank procurement regulations (Sixth Edition), and OCDS documentation.

**2.2. Reconstruction pipeline decomposition.** Public reconstruction was decomposed into a controllable pipeline: (1) strategic spatial prioritization; (2) project identification and concept notes; (3) appraisal and selection; (4) budgeting and financing assignment; (5) procurement and contract management; (6) monitoring and adaptive management; and (7) ex post review and asset management. This mirrors the PIM lifecycle and the PIMA planning-allocation-implementation structure.

**2.3. Control mapping and evidence specification.** For each pipeline step, key post-conflict risks were identified and mapped to control mechanisms derived from URF, PIMA/PIM guidance, and procurement integrity standards. Each control was paired with (a) minimum evidence artifacts (e.g., appraisal reports, screening records, procurement strategies, change-order logs) and (b) decision-relevant KPIs.

**2.4. Quantitative scenario analysis.** A simple scenario model was constructed using the RDNA4 total needs estimate (US\$524 billion over 10 years) and IMF evidence on public investment efficiency gaps. The baseline assumes an average efficiency gap consistent with IMF evidence (30% value loss), while the improved-governance scenario assumes closing approximately two-thirds of that gap. The model reports implied annual financing needs to deliver constant effective output and provides indicative effects on common project performance metrics (e.g., cost-overrun rates), explicitly as illustrative assumptions rather than causal estimates.

### 3. Results

**3.1. Integrated delivery architecture.** Figure 1 presents an integrated post-conflict reconstruction delivery system linking (A) urban recovery planning legitimacy, (B) public investment governance controls, (C) procurement and contracting integrity, (D) financing and conditionality alignment, and (E) assurance and feedback mechanisms.

**3.2. Control matrix across the reconstruction pipeline.** Table 1 specifies risks, controls, evidence artifacts, and KPIs across pipeline steps, allowing ministries, municipalities, and donors to standardize quality-at-entry requirements and to monitor execution integrity.

**3.3. Macro-fiscal scale and present–future comparison.** The RDNA4 estimate implies an average annual reconstruction and recovery need of approximately US\$52.4 billion over a decade. Table 2 and Figure 4 illustrate an efficiency scenario: if public investment processes waste approximately 30% of value at baseline, and governance reforms close about two-thirds of that gap, then the implied annual spending required to achieve the same effective output declines materially. This comparison provides an auditable, numeric bridge between ‘present’ institutional performance and ‘future’ performance targets under a minimum-viable governance approach.

*Figure 1. Integrated post-conflict urban reconstruction delivery system (planning–finance–procurement–assurance).*

Figure 1. Integrated post-conflict urban reconstruction delivery system

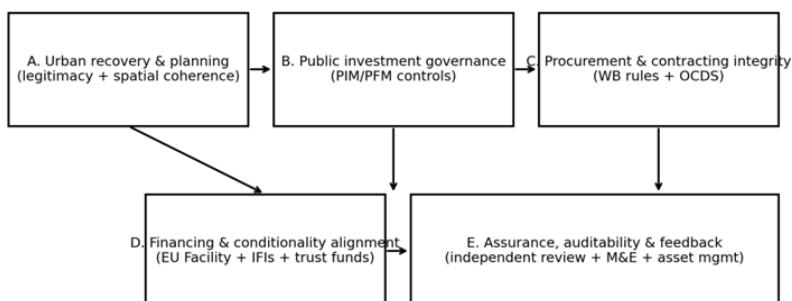


Table 1. Reconstruction project pipeline: key risks, controls, evidence, and KPIs.

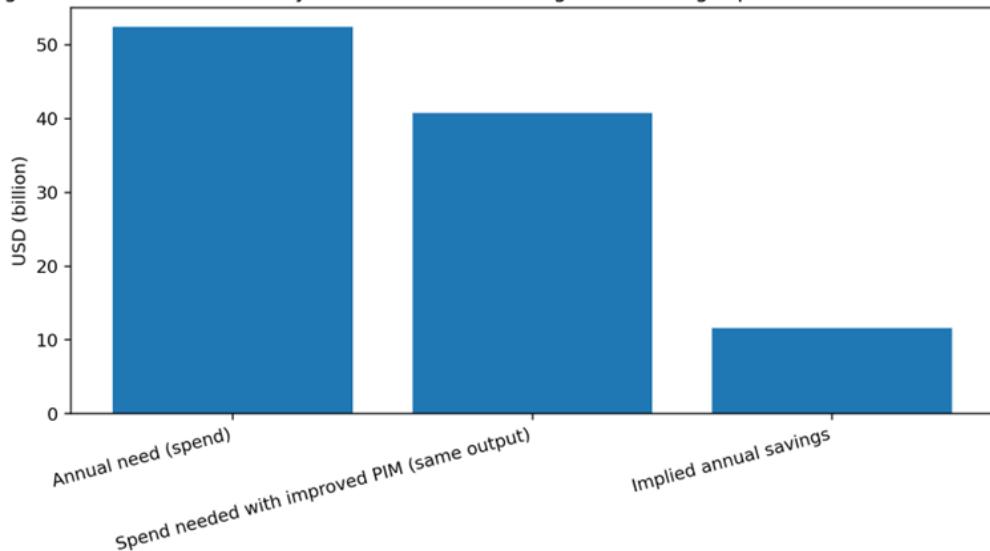
Pipeline step	Core risk (post-conflict)	Control mechanism (good practice)	Evidence artifacts	KPIs / indicators
Strategic spatial prioritization	Politicized priorities; rebuilding in non-viable areas	URF-based coordination; transparent criteria; service-restoration sequencing	Published criteria; needs maps; stakeholder minutes	% projects aligned to published criteria; service coverage restored
Project identification & concept	Project proliferation; weak definition	Standard concept notes; screening for land status, utilities, security	Concept note; land/tenure verification	% concepts passing screening; time-to-concept approval
Appraisal & selection	Optimism bias; weak VFM	Independent review; appraisal templates; selection gate	Appraisal report; independent review memo	Appraisal completion rate; % projects with independent review
Budgeting & financing assignment	Capital/recurrent mismatch; maintenance unfunded	Multi-year budgeting; maintenance provisioning; portfolio rationalization	MTEF link; maintenance plans	O&M funded ratio; portfolio variance vs ceiling
Procurement strategy	Collusion; under-competition	Procurement strategy (e.g., PPSD); competition and market approach	PPSD; market analysis; procurement plan	Average bids per tender; % competitive procedures
Contract execution	Change-order abuse; quality failures	Change-control board; milestone payments; independent testing	Change orders; test results; payment certificates	Cost overrun %; defect rate; schedule variance
Transparency & accountability	Low visibility; weak oversight	OCDS-aligned disclosure; open dashboards	OCDS datasets; contract documents	% contracts published; timeliness of disclosure
Monitoring & adaptation	Stalled projects; poor risk response	Portfolio reviews; corrective actions; risk registers	Monitoring reports; risk registers	% projects on-track; time-to-corrective action
Ex post review & asset management	Lessons lost; assets degrade	Completion review; asset registry; maintenance loop	Completion report; asset records	Lifecycle cost variance; % assets registered

Table 2. Present-future scenario comparison (illustrative): implied annual financing needs under different public investment efficiency assumptions.

Scenario	PIM efficiency assumption	Annual spend (USD bn)	Effective output (USD bn)	Illustrative cost overrun rate
Baseline (typical efficiency gap)	30% value lost (eff=0.70)	52.40	36.68	20%
Improved governance (closing ~2/3 of gap)	10% value lost (eff=0.90)	40.76	36.68	10%
Implied annual savings (same output)	—	11.64	0.00	

Figure 4. Illustrative efficiency scenario: annual savings from stronger public investment management (constant effective output).

Figure 4. Illustrative efficiency scenario: annual savings from stronger public investment management (constant effective output).



#### 4. Discussion

The framework highlights a core operational lesson: reconstruction must be managed as an investment portfolio governed by quality-at-entry, competitive procurement, and verifiable delivery, rather than as a politically driven list. Macro-fiscal estimates imply unavoidable prioritization and sequencing, while procurement and fiduciary controls determine whether large inflows translate into usable infrastructure and services. The URF provides a governance and legitimacy scaffold for spatial choices, but without PIM/PFM controls the portfolio remains vulnerable to optimism bias, under-competition, and change-order escalation. Procurement integrity is a reconstruction multiplier because it concentrates value-for-money risks in a single lifecycle. The World Bank's procurement regulations emphasize structured procurement planning and value-for-money, while OCDS supports disclosure of data and documents across the contracting cycle, enabling external oversight and analytics. However, transparency is not sufficient by itself: it must be paired with enforceable change-control governance, independent verification, and a functioning audit trail. The quantitative scenario is intentionally conservative and illustrative. It does not claim that governance reforms mechanically produce savings; rather, it demonstrates the scale of potential fiscal implications if institutional improvements reduce systemic inefficiencies documented in the public investment literature. Future empirical work should validate these mechanisms using project microdata (cost, time, quality), procurement competition metrics, disclosure performance, and audit results.

## 5. Conclusions

Post-conflict reconstruction requires an integrated delivery system that converts legitimate urban priorities into fiscally disciplined, transparently procured, and verifiably executed public investments. For Ukraine, the estimated US\$524 billion decade-scale reconstruction need makes disciplined portfolio governance unavoidable. This paper contributes (i) an integrated delivery architecture (Figure 1), (ii) a reconstruction control matrix (Table 1), and (iii) a present–future scenario showing how improving public investment efficiency could materially affect implied financing needs (Table 2; Figure 4). Implementation should focus on minimum viable controls: standardized intake and appraisal gates, procurement strategy capability, OCDS-aligned disclosure, change-order governance, and quarterly portfolio reviews. These controls can then be scaled into digital PIM information systems and broader city-service indicator dashboards as institutional capacity recovers.

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