KYIV SCHOOL OF ECONOMICS

PUBLIC POLICY AND GOVERNANCE

THESIS

INSTITUTIONAL FRAGMENTATION AND COORDINATION EFFECTIVENESS IN MINE-ACTION GOVERNANCE

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Abstract. The aid effectiveness literature has focused on donor-side fragmentation, leaving recipient institutional structure unmeasured. This thesis introduces the Recipient Fragmentation Index, a measure of mandate dispersion across state bodies within a sector. Using process tracing (Ukraine, 2022–2025) and fuzzy-set QCA (11 mine-affected states), the study finds that overlapping mandates generate decision delays at inter-institutional interfaces, and that consolidated NMAA architecture combined with post-conflict stability is sufficient for program effectiveness (consistency = 0.953), while its absence is necessary for failure (consistency = 0.904). Institutional design appears to be a more immediate constraint than state capacity alone in the cases examined.

Keywords: institutional fragmentation; coordination effectiveness; mine action; humanitarian mine action; public administration; policy implementation; aid effectiveness; Ukraine

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CHAPTER 1. INTRODUCTION

The way a country structures its mine-action institutions shapes how effectively it can clear contaminated land and support affected communities. International Mine Action Standards prescribe a legally defined National Mine Action Authority with consolidated responsibility over policy, regulation, coordination, and quality assurance (International Mine Action Standards, 2025). Architectures in practice diverge from this prescription: each program emerged under different conditions of conflict, contamination, and state-building. Colombia built one of the world's largest demining programs with 2,674 personnel under armed conflict, adapting its operational framework to persistent insecurity (Mine Action Review, 2025a). In the Balkans, Croatia, Bosnia-Herzegovina, and Serbia share explosive ordnance contamination rooted in the same conflict era but report markedly different results. Croatia is approaching its 1 March 2026 Article 5 deadline, while Serbia conducted no clearance in 2024 and is requesting its fourth deadline extension (Mine Action Review, 2025a). These contrasts suggest that institutional architecture is associated with differences in how mine-action systems convert resources into operational results. The academic literature has paid limited systematic attention to what distinguishes effective architectures from ineffective ones.

Ukraine stands out because its mine-action responsibilities depart from the consolidated NMAA model. In 2021, the Cabinet of Ministers established a National Mine Action Authority as an inter-ministerial body chaired by the Minister of Defense, but operational duties remain dispersed across several entities and administrative verticals (Cabinet of Ministers of Ukraine, 2021). The National Mine Action Center (NMAC), situated within the Ministry of Defense, functions as the primary coordination body. Subsequently, in April 2023, the State Emergency Service of Ukraine (SESU) established the Center for Humanitarian Demining, a unit later transferred to the Cabinet of Ministers' Secretariat (Cabinet of Ministers of Ukraine, 2023a, 2023b). The SESU also operates its own Interregional Center for Humanitarian Demining (Ministry of Internal Affairs of Ukraine, 2023). Other functions, including strategy monitoring, donor coordination, and the agricultural financing program, remain under the Ministry of Economy, Environment, and Agriculture (MoEEA) (Cabinet of Ministers of Ukraine, 2023c). Coordination between NMAC and CHD is governed through Joint Order No. 9/3/5 by the NMAA Secretariat (Ministry of Defense of Ukraine et al., 2023). This set of overlapping responsibilities and institutional channels is the context in which the H1 mechanism is tested.

Yet this dispersed architecture must contend with one of the most extensive cases of explosive ordnance contamination in Europe since World War II (Shulzhenko, 2025). As of 2026, approximately 133,000 km² of Ukrainian territory remains potentially contaminated (World Bank et al., 2026). International donors have pledged over USD 1.5 billion, with support coming from more than 30 countries and hundreds of implementing projects (Ministry of Economy, Environment and Agriculture of Ukraine, 2026a). Ukraine's official target is clear. In October 2025, the Delegation of Ukraine to the UN Fourth Committee announced a target to return 80 percent of affected territories to productive use within a decade, aligning this

objective with the National Mine Action Strategy (through 2033) and the Operational Plan 2024–2026 (Permanent Mission of Ukraine to the United Nations, 2025). The Accounting Chamber's assessment points in a different direction: at the current operational tempo, clearing contaminated agricultural land would take 83 years (Accounting Chamber of Ukraine, 2025). The contrast defines the implementation problem examined in this thesis.

At this scale, institutional fragmentation directly affects how operators move through tasking, certification, verification, and financing procedures. As the affected territory expands, so too does the complexity of coordinating among a growing number of institutions, operators, and donors, often outpacing the available governance capacity. The GICHD and EY capacity gap assessment reports that of 19 certified operators, 15 reported no compliance monitoring by regulatory authorities other than the certification body, and 6 reported no compliance monitoring by the certification authority during the previous 12 months. Most certified operators are small organizations with limited administrative resources (GICHD & EY, 2026). These actors must work through a processing chain that spans NMAC, the Secretariat, the certification body, oblast administrations, and CHD. In this environment, procedural delays become more likely.

While donor-side fragmentation is well documented in the aid effectiveness literature (Acharya et al., 2006; Knack & Rahman, 2007; Gehring et al., 2017), recipient-side complexity remains comparatively underexplored. The prevailing assumption in most studies treats the recipient government as a unitary actor, often reduced to a scalar capacity score such as the ICRG or the World Bank's Worldwide Governance Indicators. This approach overlooks the internal institutional structure that shapes how coordination costs are distributed and managed. Consider Ukraine: its WGI Government Effectiveness score (-0.60, 39.7th percentile; Kaufmann & Kraay, 2025) places it in a moderate-capacity bracket, yet multiple external assessments (Tony Blair Institute for Global Change, 2025; Accounting Chamber of Ukraine, 2025; GICHD & EY, 2026; Mine Action Review, 2025a) identify institutional fragmentation as a key impediment, with overlapping mandates, duplicated functions, parallel information systems, and multi-step processing chains. These findings challenge the adequacy of aggregate governance metrics, suggesting that even states with moderate scores can experience coordination failures when mandates are scattered and hierarchies remain ambiguous.

Research question: *How does the institutional architecture of the National Mine Action Authority affect coordination effectiveness in mine-action governance?*

Sub-question 1 (within-case, Ukraine): *Does recipient-side institutional fragmentation reduce coordination effectiveness through transaction costs at inter-institutional interfaces?*

Sub-question 2 (cross-case): *Is consolidated NMAA architecture associated with higher program effectiveness across mine-affected states?*

H1: Greater recipient-side institutional fragmentation is associated with lower coordination effectiveness, operating through a transaction-cost mechanism at inter-institutional interfaces (Williamson, 1985; North, 1990).

H2: Consolidated NMAA architecture is associated with higher program effectiveness across mine-affected states, but the relationship may be necessary, sufficient, or conditional on post-conflict stability and state capacity (International Mine Action Standards, 2025; Schneider & Wagemann, 2012). The study therefore tests whether consolidation operates as a necessary condition, a sufficient condition, or part of a broader configuration.

Methodologically, this thesis adopts a confirmatory mixed-methods approach. Both hypotheses are grounded in existing theory, drawing from transaction-cost economics, aid-fragmentation literature, and the IMAS normative model. The empirical strategy has two parts. First, the Ukraine within-case component uses the Recipient Fragmentation Index to measure formal mandate dispersion and then applies process tracing to test the H1 mechanism. Second, the cross-case component uses fuzzy-set Qualitative Comparative Analysis (fsQCA) to examine the H2 configurational pattern across 11 mine-affected states (Lieberman, 2005; Creswell & Plano Clark, 2018). This design uses RFI for measurement, process tracing for mechanism-level inference, and fsQCA for comparative evidence.

The thesis proceeds in eight chapters. Chapter 2 reviews the literature on aid and institutional fragmentation. Chapter 3 defines the analytical framework and hypotheses. Chapter 4 presents the research design and operationalization. Chapter 5 reports the RFI, process tracing, and QCA findings. Chapter 6 discusses the implications. Chapter 7 presents policy implementation recommendations. Chapter 8 concludes. The thesis therefore shifts attention from the scale of assistance to the architecture through which mine-action assistance is governed.

CHAPTER 2. LITERATURE REVIEW

Much of the aid-effectiveness literature links donor proliferation to higher coordination costs and, in some cases, weaker bureaucratic performance among recipients (Knack & Rahman, 2007; Acharya et al., 2006; Gehring et al., 2017). However, the literature also emphasizes that the impact of fragmentation is not uniform: in countries with higher institutional capacity, the negative effects are often mitigated, implying that capable states may absorb or offset added coordination burdens (Gehring et al., 2017). More recent work, relying on disaggregated proliferation measures and case-based evidence, has further nuanced our understanding of these dynamics, refining effect-size estimates and clarifying the limits of capacity's moderating role (Aldasoro et al., 2010; Gehring et al., 2017). Most of this tradition treats capacity as a scalar moderator drawn from ICRG or World Bank indicators. This overlooks how the division of responsibilities within recipient governments shapes coordination outcomes.

The framework advanced by Gehring et al. (2017) places capacity at the center as a moderator. Their main finding, that the negative impacts of donor fragmentation are attenuated in states with higher bureaucratic quality, has shaped much subsequent analysis. However, a key limitation persists: their chosen indicator, ICRG bureaucratic quality, measures only the aggregate level of state performance, not the underlying structure of authority within sectors. A country may perform well on aggregate indices while experiencing coordination failures if no single institution is empowered to standardize interfaces or resolve disputes. This distinction between the level of capacity and its institutional configuration is central to the present study.

Few studies attempt to measure how recipient governments are organized internally. Internal institutional arrangements, which most directly shape how coordination costs are distributed and managed, are rarely measured systematically. A notable quantitative contribution comes from Kalmenovitz, Lowry, and Volkova (2025), who applied Herfindahl-Hirschman Index logic to regulatory authority dispersion among U.S. federal agencies, showing that higher dispersion correlates with weaker regulatory outcomes. In international relations, Biermann et al. (2009) offered a widely cited typology of governance fragmentation, classifying architectures as synergistic, cooperative, or conflictive, but their analysis remains qualitative. The World Bank's (2022) review of water supply and sanitation in low- and middle-income countries makes clear that institutional fragmentation among implementing agencies is a recurrent barrier to sector performance. Similarly, Wee (2025) found that efforts at policy integration in South Africa's food and nutrition sector could not overcome entrenched structural dispersion. While these studies document the phenomenon, the reviewed literature did not identify a quantitative index designed specifically to capture recipient-side mandate dispersion within a sector. This thesis seeks to address that gap.

This study draws on transaction-cost economics. Williamson (1985) argued that institutional arrangements emerge to minimize the costs of transacting across organizational boundaries. North (1990) extended this logic to political institutions. In contexts where

multiple institutions share overlapping mandates, each additional interface, whether an approval process, information transfer, or jurisdictional negotiation, raises the aggregate transaction cost. While the notion of 'transaction costs' appears sporadically in humanitarian literature (Balcik et al., 2010), its development as a formal causal mechanism, especially one subject to systematic empirical tracing in operational sectors, remains limited. A recent scoping review identified 84 process-tracing studies in health research (Johnson et al., 2025), but comparable applications within humanitarian coordination are rare. This relative lack of operationalized transaction-cost analysis in the humanitarian field signals a further gap addressed by the present work.

A complementary perspective is offered by Mahoney and Thelen (2010), whose concept of institutional layering captures the incremental addition of new institutions alongside existing ones without outright displacement. Layering often arises when political actors lack the coalition strength to eliminate legacy institutions but can still introduce new structures at the margins. While each addition may be individually rational, the resulting architecture can become collectively dysfunctional, a risk that is relevant in the context of fragmented governance.

Amin and Thrift's (1995) concept of institutional thickness adds a related point. High institutional density, in the form of a proliferation of institutions, coordination platforms, and regulatory instruments, does not guarantee coherence. Ukraine's mine-action sector, with its eight state institutions and multiple information and coordination platforms, exemplifies this paradox: sectoral density exists, but rather than streamlining operations, it tends to amplify coordination costs.

In Ukraine, this gap matters because the mine-action sector depends heavily on international assistance, while implementation still runs through national mandates, information systems, and verification procedures. The literature reviewed above addresses donor-side fragmentation and provides tools for analyzing coordination costs, particularly transaction-cost economics and institutional layering. A remaining gap concerns the distribution of governance mandates across institutions within a sector and the effects of this distribution on coordination outcomes. This recipient-side focus is important because even heavily donor-funded mine-action programs are implemented through national legal mandates, administrative interfaces, information systems, and public-sector verification procedures. Although practitioner literature on mine action is extensive (see GICHD, UNDP, Mine Action Review), and recent impact studies have appeared in leading journals (Chiovelli et al., 2025; Prem et al., 2025), there is little peer-reviewed research that treats NMAA institutional architecture as an analytical object in its own right. This thesis addresses the measurement gap and the comparative gap.

CHAPTER 3. THEORETICAL AND CONCEPTUAL FRAMEWORK

3.1 Conceptualization

The study uses a post-positivist approach, where causal claims are treated as hypotheses to be tested against available evidence, acknowledging that measurement is never perfect and inference is always provisional (Scheel et al., 2021). Transaction-cost economics serves as the primary theoretical lens for H1. For H2, the analysis draws from Biermann et al.'s (2009) governance fragmentation typology as well as the prescriptive standards set by IMAS. Six constructs serve as the foundation for the analysis, each of which is defined below.

3.1.1 Fragmentation

Fragmentation refers to the dispersion of authority, resources, or decision rights among multiple actors who must coordinate in order to achieve a coherent collective outcome (Acharya et al., 2006; Bourguignon & Platteau, 2015). Fragmentation is not inherently negative. In some contexts, it can reduce monopoly power, diversify risk, or promote organizational learning (Gehring et al., 2017). Whether fragmentation proves beneficial or detrimental is ultimately an empirical matter that depends on the broader institutional environment. Fragmentation often increases through a process known as institutional layering (Mahoney & Thelen, 2010), in which new bodies are added alongside existing ones rather than replacing them. This produces cumulative complexity that is typically not the intended result of any single decision.

Recipient-side fragmentation concerns the way state functions are distributed among public institutions involved in mine action. In contrast, donor-side fragmentation refers to how external funding is distributed across different donors. Each type presents distinct coordination challenges. Recipient-side fragmentation increases the number of internal coordination interfaces within the state, while donor-side fragmentation increases the number of external interfaces between the state and its funders. The NMAA acts as the institutional mechanism that must manage both types of coordination costs.

3.1.2 Recipient Fragmentation Index (RFI)

The RFI, which is the independent variable for H1, measures the dispersion of mandates across state institutions for specific governance functions within each pillar. It is weighted by the distinction between leading and shared responsibility. The index adapts the Herfindahl-Hirschman Index (HHI), originally used for donor funding shares (Knack & Rahman, 2007) and regulatory authority dispersion (Kalmenovitz et al., 2025), to work with coded statutory mandate assignments. Leading responsibility means that an institution holds the principal legal or operational mandate for a function. Shared responsibility means that an institution holds a supporting, consultative, partial, or jointly assigned mandate.

For each mine-action function and each time period, the share for each institution is calculated by dividing the mandate weight assigned to that institution by the total mandate weight for that function. Function-level fragmentation is then computed as one minus the sum

of squared shares. The pillar-level RFI is the unweighted mean of these function-level scores. The index ranges from 0, which indicates full concentration, to values approaching 1, which indicate maximum dispersion. An annual resolution is used to match the timing of legislative changes that affect mandate distributions. Further details on the construction of the index can be found in Chapter 4 and in the empirical analysis.

3.1.3 Coordination Effectiveness (Process-Traced Outcome)

Coordination effectiveness serves as the outcome concept for H1. It addresses whether institutions are able to translate agreed mine-action policy into effective implementation, encompassing areas such as tasking, verification, quality assurance, and reporting. Ideally, this could be assessed by examining alignment with the National Mine Action Strategy, the absence of duplication, timeliness of decisions in tasking and accreditation, and the implementation of agreed actions. However, with only four sector-year observations, constructing a separate time-series index is not meaningful. For this reason, coordination effectiveness is assessed using a theory-testing process tracing approach, which is described in detail in section 4.5. The two backward-traces focus on observable coordination shortfalls predicted by the H1 mechanism, including delayed implementation, bottlenecks at institutional handovers, and gaps between planned and delivered coverage.

3.1.4 NMAA Architecture (Cross-Case Variable)

For H2, the key variable is the extent to which a mine-affected state's NMAA holds consolidated authority over the main governance functions identified in IMAS 01.10: policy formulation, operational coordination, quality assurance, and information management.

This variable is operationalized as an ordinal classification for QCA calibration. In a consolidated model, a single authority holds the leading mandate across at least three core functions and exercises operational control over tasking and accreditation. In a semi-consolidated arrangement, a single authority exists but shares key functions with parallel bodies or is limited by political constraints. In a dispersed model, multiple authorities have overlapping mandates, and no clear hierarchy exists to resolve conflicts. This cross-case variable reflects outcomes of historical layering, where consolidated NMAAs are those that either avoided institutional layering or achieved successful consolidation afterwards (Mahoney & Thelen, 2010).

3.1.5 Program Effectiveness (Cross-Case Outcome)

Program effectiveness serves as the cross-case outcome for H2. It combines operational performance, measured by Mine Action Review's 1-to-10 program scores (Mine Action Review, 2024, 2025a), with the compliance trajectory under Article 5 and Article 4 of the Anti-Personnel Mine Ban Convention. Article 4 addresses destruction of stockpiled anti-personnel mines within four years of accession, while Article 5 concerns clearance of mined areas under a state party's jurisdiction or control within ten years, with extension procedures available (Anti-Personnel Mine Ban Convention, n.d.).

3.2 Theoretical Framework and Hypotheses

Independent variable (X): Institutional fragmentation, measured by the RFI (within-case) and NMAA consolidation (cross-case).

Dependent variable (Y): Coordination effectiveness, measured through process-tracing evidence (within-case) and program effectiveness (cross-case).

Contextual conditions: State capacity (WGI GE), post-conflict status, and institutional capacity (qualitative) are included to test whether the X-Y relationship is conditional.

3.2.1 Hypothesis 1: Mechanism

H1 predicts that greater recipient-side institutional fragmentation is associated with lower coordination effectiveness, operating through a transaction-cost mechanism at inter-institutional interfaces (Williamson, 1985; North, 1990). The mechanism has four steps. The first step is that overlapping mandates across institutions increase the number of inter-institutional interfaces required for decision-making. The second step involves jurisdictional ambiguity at these interfaces, which leads to bargaining over authority and slows the handover of responsibilities. Third, information asymmetries can arise between agencies that run parallel systems with separate hierarchies and data structures. Finally, decision delays or duplications can undermine coordination quality. This mechanism produces observable traces in documentary evidence, including delayed implementation, identified bottlenecks at institutional handovers, and shortfalls between planned and delivered coverage.

H0-1: Recipient-side institutional fragmentation is not associated with lower coordination effectiveness and does not produce observable transaction-cost traces at inter-institutional interfaces.

3.2.2 Hypothesis 2: Cross-Case Pattern

H2 predicts that consolidated NMAA architecture is associated with higher program effectiveness across mine-affected states. The theoretical foundation is the same transaction-cost mechanism applied at a broader level. Consolidated NMAAs reduce the number of inter-institutional interfaces, centralize information, and enable unified quality assurance. In contrast, dispersed architectures increase the number of interfaces, making coordination more complex.

The QCA is used to test the specific form of this relationship. Consolidation might prove necessary, meaning it is present in every effective case. It could also be sufficient, guaranteeing effectiveness when combined with other conditions. Alternatively, consolidation may be effective only in certain combinations with other factors. The analysis considers all three possibilities instead of assuming a single pattern in advance.

H0-2: Consolidated NMAA architecture is not associated with higher program effectiveness and does not form part of a necessary or sufficient condition for effectiveness across mine-affected states.

3.3 Application to Ukraine

Ukraine serves as the main within-case study for H1. For the purpose of this test, Ukraine is treated as a dispersed-architecture case. This is based on the formal allocation of functions across multiple institutions: the NMAA Secretariat is positioned within the Ministry of Defense, strategy monitoring is the responsibility of the Ministry of Economy, Environment, and Agriculture, and two operational centers hold partially overlapping mandates (Cabinet of Ministers of Ukraine, 2023a; Ministry of Defense of Ukraine et al., 2023). The government has publicly recognized the need for reform (Cabinet of Ministers of Ukraine, 2024a), and as of May 2026, two draft laws on this issue are under review in the Verkhovna Rada (Cabinet of Ministers of Ukraine, 2026d; Deputies of the Verkhovna Rada of Ukraine, 2026). Chapter 6 discusses these proposed reforms in detail.

For H2, Ukraine is treated as the focal example for which QCA findings guide policy recommendations. However, Ukraine is not included as a case in the QCA sample because its program is relatively new and the ongoing conflict makes stable outcome calibration difficult.

CHAPTER 4. RESEARCH DESIGN AND DATA COLLECTION

4.1 Design Justification

This thesis uses a confirmatory nested mixed-methods design (Lieberman, 2005). The within-case mechanism for H1 is examined through process tracing, which follows causal sequences in specific episodes where quantitative data alone cannot capture the causal sequence. The cross-case pattern for H2 is explored via Qualitative Comparative Analysis (QCA), a method suited to configurational comparison in medium-N samples (Ragin, 2008; Schneider & Wagemann, 2012). Process tracing allows for detailed, mechanism-level inference in the Ukraine case, while QCA offers comparative insights across 11 mine-affected states. This design is intended to test structured expectations within a defined sector and time period, without making claims to universal causal proof.

Table 4.1. Variable summary and nested research design.

Variable	Role	Indicator	Source	Level	Method
RFI	IV (H1)	HHI of mandate shares per pillar-year	Legislative texts	Pillar-year (N=16)	Descriptive + PT
NMAA consolidation	IV (H2)	0-10 governance score	MAR descriptions	Country (N=11)	QCA
Coordination effectiveness	DV (H1)	PT mechanism footprints	SWG/VA WG, ACU, TBI, GICHD, MAR	Backward-trace (N=2)	Process tracing
Program effectiveness	DV (H2)	MAR score + Art.5 trajectory	MAR reports	Country (N=11)	QCA
State capacity	Condition (H2)	WGI Government Effectiveness	Kaufmann & Kraay (2025)	Country	QCA
Post-conflict status	Condition (H2)	UCDP/PRIO + MAR security	Davies et al. (2024)	Country	QCA
Institutional capacity	Moderator	Legal, IMSMA, accreditation, QA	Documentary evidence	Year (N=4)	Qualitative

Note: Author's calculation based on legal and policy sources listed in Appendix A.

4.2 Research Strategy

The research strategy includes two main components. The within-case study of Ukraine (2022–2025) combines construction of the Recipient Fragmentation Index (RFI) with theory-testing process tracing to evaluate H1. This involves two flagship backward-traces, tracing outcomes to institutional architecture using legislative acts, Cabinet of Ministers resolutions and orders, meeting minutes, and external assessments (Tony Blair Institute for Global Change, 2025; Accounting Chamber of Ukraine, 2025; GICHD & EY, 2026; ACAPS, 2024). The cross-case component uses fuzzy-set Qualitative Comparative Analysis (fsQCA) to analyze H2 across 11 mine-affected states. Coded cases draw on sources such as Mine Action Review (2024, 2025a), Landmine Monitor (International Campaign to Ban Landmines, 2024), and WGI data (Kaufmann & Kraay, 2025).

4.3 Units of Analysis

For H1, two different units of analysis are used. The pillar-year, defined as four pillars observed across four years (yielding 16 observations), serves as the unit for computing the RFI. The process tracing relies on the coordination episode as its unit, with two flagship backward-traces analyzed in depth. For H2, the country-level mine-action program is the unit of analysis, with 11 cases coded at a single cross-sectional point based on the latest available assessments.

4.4 Operationalization

4.4.1 RFI

The Recipient Fragmentation Index is built from a matrix that matches functions to institutions, using data from primary legal and policy sources. Eight institutions are coded against seven governance functions, based on IMAS 01.10 prescriptions, across four mine-action pillars and four annual periods (2022–2025). This yields 896 possible mandate cells, of which 384 contain non-zero mandate entries. Mandates are coded on a three-level scale: 2 for leading mandate, 1 for shared or supporting mandate, and 0 for no mandate. The RFI is then calculated as a Herfindahl-Hirschman-type concentration measure. Lower values indicate that mandate authority is concentrated in a few institutions, while higher values reflect greater dispersion across many institutions. Leading responsibility means that an institution holds the principal legal or operational mandate for a function. Shared responsibility means that an institution holds a supporting, consultative, partial, or jointly assigned mandate.

Table 4.2 below lists the eight coded institutions and their parent ministries. Full coding rules, inclusion and exclusion criteria for mandate attribution, pillar definitions, and the complete source table are provided in Appendix B.

Table 4.2. Coded institutions for RFI construction.

Institution	Abbr.
Mine Action Center (also National Mine Action Center) under Ministry of Defense	MAC/NMAC
Center for Humanitarian Demining under CMU Secretariat	CHD
Secretariat of the National Mine Action Authority within Ministry of Defense	NMAA Sec.
Ministry of Economy, Environment and Agriculture	MoEEA
State Emergency Service of Ukraine under Ministry of Internal Affairs	SESU
National Police of Ukraine under Ministry of Internal Affairs	NPU
Special State Transport Service under Ministry of Defense	SSTS
Demining Center of Military Unit A2641, Armed Forces of Ukraine	AFU

Note: Author's compilation based on legal and policy sources listed in Appendix A.

4.4.2 Coordination Effectiveness

Coordination effectiveness is the dependent variable for H1. As outlined in Section 3.1.3, it is assessed through theory-testing process tracing. The H1 mechanism (see Section 3.2.1) predicts observable traces in documentary evidence, such as delayed implementation, verification or financial bottlenecks at specific institutional handovers, and gaps between planned and delivered coverage. The two backward-traces in Section 5.2 examine these footprints in the compensation program (Section 5.2.1) and in the external quality control chain (Section 5.2.2). Empirical traces are narrowly defined and observable: delayed implementation, bottlenecks, and delivery shortfalls. Documentary sources include Sectoral Working Group and Victim Assistance Working Group minutes, accreditation and certification status reports, the Accounting Chamber audit, the GICHD and EY assessment, and ACAPS reports.

4.4.3 NMAA Architecture (Cross-Case)

NMAA architecture is coded from Mine Action Review governance descriptions for each comparator case. Raw scores are assigned on a scale from 0 to 10. Fuzzy-set membership is determined through logistic calibration using three anchors: 9.0 for full consolidation with operational control (for example, Croatia's CROMAC), 6.0 for crossover cases where authority exists but shares core functions or faces operational constraints, and 3.0 for dispersed arrangements with overlapping mandates and no clear resolution mechanism (such as Iraq's DMA/IKMAA split) (Duşa, 2019).

Three anchor positions follow that logic. A fully-in anchor of 9 sits above the threshold of formal NMAA existence: full consolidation requires operational control over the core IMAS functions (tasking, accreditation, quality assurance, information management) rather than nominal authority alone. A crossover of 6 captures cases where an authority exists but cannot fully resolve tasking, QA, or information-management conflicts. A fully-out anchor of 3 captures cases where authority is split across parallel bodies with no clear hierarchical resolution.

Table 4.3. NMAA Architecture calibration anchors.

Raw score	Membership	Example logic
8 to 10	Consolidated authority	One body controls tasking, QA, information management, and operator interface.
5 to 7	Partial consolidation	NMAA exists but shares core functions, lacks operational authority, or faces subnational or parallel constraints.
0 to 4	Dispersed architecture	Multiple bodies hold overlapping mandates with no clear hierarchy or single operational chain.

Note: Author's calibration scheme based on the construct definitions in Chapter 3 and the QCA sources listed in Appendix C.

4.4.4 Program Effectiveness (Cross-Case Outcome)

The operationalization and calibration of program effectiveness follow the construct definition outlined above. Fuzzy-set membership is calculated using logistic calibration with three anchors: 7.5 for programs that are completed or nearly completed and rated "Good" or higher, 5.5 for cases showing moderate progress with extensions, and 3.5 for stalled or regressing programs. The logistic function produces continuous membership scores that reflect the qualitative distance from each anchor (Duşa, 2019; Ragin, 2008).

Program effectiveness combines Mine Action Review performance scores with Article 5 compliance trajectory. This avoids treating absolute clearance volume as the only indicator of performance. Table 4.4 sets out the calibration anchors.

Table 4.4. Program Effectiveness calibration anchors.

Raw score	Membership	Example logic
7.5 or higher	Effective or near-effective	Strong MAR performance score, on-track completion, or completed obligations under Article 5.
5.5	Crossover	Mixed performance, moderate progress, repeated Article 5 extensions, or uneven delivery.
3.5 or lower	Ineffective	Stalled clearance, unrealistic targets, weak output, or repeated failure to meet obligations.

Note: Author's calibration scheme based on the construct definitions in Chapter 3 and the QCA sources listed in Appendix C.

4.5 Process Tracing Protocol

This section applies theory-testing process tracing as defined by Beach and Pedersen (2013). The mechanism is specified in advance, with predicted observable fingerprints outlined for each step. Evidence is then collected to assess whether these fingerprints are present in the empirical record. The thesis uses a deductive approach, starting from a specified mechanism and working to verify its presence, rather than inducing the mechanism from observed outcomes.

The mechanism is the transaction-cost mechanism from §3.2.1, with its four steps and predicted footprint (delayed onset, named verification or financial bottlenecks at specific handovers, shortfalls between planned and delivered coverage).

To ensure that observed delays are not automatically attributed to fragmentation, the research design incorporates tests against three rival explanations.

R1 (wartime capacity): resource and personnel constraints under full-scale invasion produce the observed shortfalls regardless of architectural form (Risse, 2011). R1 is operationalized through temporal contrast. If coordination shortfalls track architectural changes within 2022–2025 rather than security developments, the wartime explanation loses force.

R2 (donor conditionality): international conditionalities, particularly EU integration requirements, drive structural fragmentation upstream of recipient-side dynamics (Dietrich, 2013; Whitfield & Fraser, 2010). R2 is operationalized through document provenance: if the

architectural choices documented in the matrix trace to Cabinet of Ministers decisions and the Strategy rather than to donor-imposed conditions, the donor-driven explanation weakens.

R3 (learning-curve effects): observed delays reflect the time required for newly established bodies to build operational capacity through iterative problem-solving, including the period required for a new legal entity to become fully operational and to develop standard procedures (Carpenter, 2001; Andrews, Pritchett, & Woolcock, 2017). R3 is assessed by whether problems decline after the first full operating cycle and after formal amendments intended to correct the procedure.

Case selection follows two steps. First, each episode starts from a documented outcome and traces it backward through the institutional architecture to the legal sources that shaped it. In this study, Backward-trace 1 starts from the Accounting Chamber's findings on the compensation program (Accounting Chamber of Ukraine, 2025), while Backward-trace 2 starts from the planned inspection-to-clearance coverage ratio of 22 percent in the 2026 Plan, paired with the Strategy's diagnosis of limited quality-management capacity. This approach differs from simple co-occurrence analysis because it traces the chain from outcome to institutional source. If the chain of evidence fails at any step, the specific causal claim is disconfirmed for that case.

The second component is paired comparison between the two backward-traces. These cases differ in their legal foundations, operational content, and stages of architectural development. If the same mechanism is identified in both, the resulting evidence is more persuasive than that from a single-case analysis.

Process-tracing evidence is assessed through standard test logic following Beach and Pedersen (2013). A hoop test identifies evidence that must be present for the mechanism to remain plausible. Passing it does not prove the mechanism, but failing it would seriously weaken the claim. A smoking-gun test provides strong confirmation when observed, although its absence does not automatically disconfirm the mechanism. Straw-in-the-wind evidence is weaker and only suggestive. Doubly decisive evidence would both confirm the proposed mechanism and rule out rival explanations. This standard is rarely met in complex governance cases, and the analysis below should therefore be read with that limit in mind. The empirical chapter uses plain-language labels (strong confirming, moderate confirming, ambiguous, disconfirming) and identifies the underlying test type at the first mention in each backward-trace.

External assessments provide additional support for this interpretation. The Tony Blair Institute for Global Change White Paper (2025), the Accounting Chamber audit (2025), ACAPS reports (2024, 2025), and the GICHD and EY operator capacity assessment (2026) all identify issues within the institutional architecture. While these assessments are not fully independent, as each had broad analytical access to the same institutions, the important point is that none of the authoritative external assessments reached a contradictory diagnosis during the period under study.

The design tests whether the specified mechanism is consistent with the evidence in the selected cases. It does not test whether the same mechanism would operate in other contexts (Beach & Pedersen, 2013). Broader generalization across mine-affected states is achieved through H2 and the use of fsQCA.

The documentary source base includes legal acts, planning documents, coordination minutes, audit reports, operator-capacity assessments, and external analytical reports. Appendix Table A1 lists the sources used for each part of the analysis.

4.6 Case Selection

The study selects eleven mine-affected states to maximize variation in NMAA consolidation. The Balkans cluster (Croatia, Bosnia-Herzegovina, Serbia) shares both conflict history and European governance context but demonstrates divergent outcomes, which helps isolate the governance variable. Cases outside the Balkans introduce further variation in scale, capacity, and conflict status. Nine outcome scores are verified by MAR, while two (Vietnam and Mozambique) are estimated. Ukraine is excluded from the QCA because its program is too new, and its ongoing conflict makes its context unique within the sample (Schneider & Wagemann, 2012).

4.7 QCA Design

QCA is a set-theoretic comparative method. It does not estimate the average effect of a condition across cases. It tests which conditions, alone or in combination, are necessary or sufficient for the outcome, treating cases as configurations of set memberships rather than as observations in a regression model.

Fuzzy-set Qualitative Comparative Analysis (fsQCA) is conducted in R using the QCA package (Duşa, 2019; R Core Team, 2024). Three conditions and one outcome are calibrated and tested in the analysis.

Three conditions are tested. The first is NMAA consolidation, coded from Mine Action Review governance descriptions using the ordinal scale defined in the NMAA Architecture construct. The second is post-conflict status, based on UCDP conflict data (Davies et al., 2024). The third is state capacity, operationalized through the Worldwide Governance Indicators Government Effectiveness measure (Kaufmann & Kraay, 2025). Government Effectiveness was chosen because it most directly captures aspects relevant to mine-action governance, including coordination quality, civil service capacity, and policy implementation. Regulatory Quality is also tested as a robustness check, and the two measures are highly correlated (rho = 0.927).

The outcome variable is program effectiveness, operationalized as progress toward completion of mine-action objectives. This combines Mine Action Review performance scores with the compliance trajectory under Article 5.

The analytical procedure begins with necessity analysis, following Schneider and Wagemann (2012): a condition is considered necessary if its consistency exceeds 0.9. Next,

sufficiency analysis is conducted by constructing a truth table, applying a frequency threshold (at least one case per configuration) and a consistency threshold of 0.80, then minimizing the configurations using the Quine-McCluskey algorithm. The intermediate solution with directional expectations is reported (Ragin, 2008). For each sufficient path, consistency, raw coverage, unique coverage, and case distribution are presented.

Calibration relies on logistic fuzzy-set calibration using the calibrate() function in the R QCA package (Duşa, 2019). For each variable, three raw-score anchors are defined: fully-in, crossover, and fully-out, each with substantive justification drawn from the mine-action context. Anchor values, case raw scores, and detailed coding notes are provided in Appendix C.

Robustness checks include two additional variables: program age and national funding share. These are tested in supplementary models but not as primary explanatory conditions. Program age may confound institutional learning with contamination depletion, and national funding share is not fully comparable across cases. Both variables are therefore used to assess robustness rather than to provide primary explanations. The complete robustness battery is detailed in Section 5.3.5.

4.8 Data Sources

The analysis is informed by five main data streams. For the within-case component (H1), legislative and coordination documents form the basis for RFI coding and process tracing. More than thirty sources are included, such as the Law on Mine Action and its amendments, Cabinet of Ministers resolutions establishing the NMAA and CHD, Joint Order No. 9/3/5, the National Mine Action Strategy, various Operational Plans and revisions, Sectoral Working Group (SWG) meeting minutes (six meetings between May 2024 and December 2025), Victim Assistance Working Group (VA WG) minutes (January to August 2025), accreditation and certification status reports, the TBI institutional analysis (2025), the Accounting Chamber audit report (2025), and the GICHD and EY capacity gap assessment (2026). The GICHD report reviews 19 certified operators across 12 domains and offers independent evidence on regulatory compliance, monitoring coverage, and organizational capacity.

For the cross-case component (H2), the coding base for all 11 cases is drawn from Mine Action Review "Clearing the Mines" reports (2024 and 2025 editions), Landmine Monitor country profiles (International Campaign to Ban Landmines, 2024), GICHD publications on operational efficiency, and the World Bank Worldwide Governance Indicators.

CHAPTER 5. EMPIRICAL ANALYSIS AND RESULTS

5.1 RFI Construction and Trajectory

The Recipient Fragmentation Index (RFI) is used to measure how governance mandates are distributed among Ukrainian state institutions. Details of its construction are provided in Section 4.4.1. The coding matrix used for this analysis contains 896 cells, with 384 non-zero entries. Each entry is linked to a specific legal article or policy source, ensuring traceability and transparency in the coding process.

Table 5.1. RFI pillar-year scores, primary specification (three-level mandate coding: 0 = no mandate, 1 = shared/supporting, 2 = leading).

Year	Land Release	EOD	Inst. Development	Pop. Protection	Sector Mean
2022	0.5040	0.4863	0.4067	0.4499	0.4617
2023	0.6767	0.5312	0.5493	0.5058	0.5657
2024	0.7322	0.5530	0.5764	0.5326	0.5986
2025	0.7324	0.5530	0.5764	0.5326	0.5986

Note: Author's calculation based on legal and policy sources listed in Appendix A.

The RFI trajectory displays a step-plateau pattern, as shown in Table 5.1. The most significant change is a 22.5 percent increase between 2022 and 2023, which is primarily linked to the creation of the Center for Humanitarian Demining (CHD) by Cabinet of Ministers Order No. 303-r on 7 April 2023 (Cabinet of Ministers of Ukraine, 2023a). The CHD was established with functions similar to those of the Mine Action Center, as set out in Article 25-1 of the Law on Mine Action (Verkhovna Rada of Ukraine, 2018, as amended). This created two institutional centers with overlapping mandates for humanitarian demining, coordinated through the NMAA Secretariat. The smaller increase observed from 2023 to 2024 is attributed to further developments in sector architecture, including the National Strategy, Operational Plan 2024–2026 (Order 616-r of 28 June 2024), and the new compensation procedure (Resolution 284 of 12 March 2024). These changes assigned new mandates to the Ministry of Economy, Environment, and Agriculture (MoEEA) and expanded CHD's role in particular function-pillar combinations. By 2024–2025, the RFI plateau suggests that the basic mandate architecture had stabilized.

Later legislative amendments in 2024 and 2025 introduced only marginal changes, with no major structural breaks. The smaller increase between 2023 and 2024 (Table 5.1) is driven mainly by changes in the Land Release pillar, where CHD's expanding coordination role for agricultural land and the new compensation procedure under Resolution 284 contributed to greater mandate density. All four pillars showed an increase in 2023, though the magnitude varied: Land Release exhibited the greatest increase (+0.1727), followed by Institutional Development (+0.1426), Population Protection (+0.0559), and EOD/Survey (+0.0449). The CHD's principal mandates now concentrate in operational land release coordination and

institutional development, particularly in standard-setting and information management, with secondary effects on EOD/Survey and Population Protection.

The seven governance functions map most directly to Land Release and EOD, where the full governance cycle of survey, clearance, certification, quality control, and field operations is captured. For Institutional Development and Population Protection, some functions map less directly. A separate scope limitation applies to Population Protection. The RFI captures the distribution of EORE mandates within the mine-action legislative framework. VA service delivery operates through cross-sectoral systems: the Ministry of Health manages rehabilitation, the Ministry of Social Policy administers disability benefits, and the Ministry of Veterans Affairs operates the Interagency Commission for war-related disability status determination (Victim Assistance Working Group, 2025a; Coordination Roundtable, 2024). These mandates derive from health, social protection, and veterans legislation rather than from the Mine Action Law. The RFI does not capture this cross-sectoral VA fragmentation. The Coordination Roundtable (2024) documented "absence of unified database of civilian victims, duplication of aid" across these systems, indicating that VA is fragmented in ways the RFI cannot see.

This trajectory is consistent with the concept of institutional layering, as described by Mahoney and Thelen (2010). The 22.5 percent step-change between 2022 and 2023 represents the most substantial single increase, reflecting the addition of CHD alongside the existing NMAC structure. Rather than consolidating or replacing existing institutions, new bodies and mandates were simply added. A similar pattern is found in information systems: the Registry of Contaminated Territories was introduced alongside IMSMA (Cabinet of Ministers of Ukraine, 2024c), and the GRIT prioritization tool was layered on top as an AI-driven planning solution (Palantir Technologies, 2024; Center for Humanitarian Demining, 2025; Cabinet of Ministers of Ukraine, 2025j). Other examples include the Diia operator certification portal and parallel citizen portals (Demine Ukraine and SESU), each situated under different ministries. The 2026 Plan assigns CHD responsibility for agricultural land demining and NMAC responsibility for general land release, creating parallel operational tracks with no clear resolution mechanism for overlaps (National Mine Action Authority, 2025). Throughout the four-year period, no institution was dissolved, no mandate was transferred, and no function was consolidated. Fragmentation thus emerges as the cumulative effect of sequential additions, rather than from a single reform or policy decision.

Four robustness checks were conducted to test the primary RFI specification: binary coding, exclusion of MoEEA, mid-year recoding of CHD's 2023 mandates as shared, and exclusion of field operations (resulting in a six-function variant). All four robustness checks confirmed both the 2022 to 2023 step-change and the 2024 plateau, indicating that the 22.5 percent increase holds across all four robustness checks.

The ordering of pillar-level RFI values in 2025 is consistent across all robustness checks: Land Release shows the highest value, followed by Institutional Development, EOD,

and Population Protection. This ordering is sensitive to the function set selected for coding and is discussed as a measurement limit in §8.1. The sustained elevated level of fragmentation from 2023 onward establishes the structural conditions for testing H1, providing an environment in which transaction-cost effects can accumulate at named institutional interfaces.

The RFI measures formal mandate dispersion in legal and administrative sources. It does not directly measure informal coordination, practical adaptation by institutions, or operational outputs such as land released. Operational change can continue even when statutory mandate distribution remains stable.

5.2 Process Tracing: Two Backward-Traces

Section 5.2 presents the process-tracing evidence for H1. Two backward-trace analyses are conducted, each beginning with a documented outcome and systematically tracing backward through the institutional architecture to the relevant legal sources. The first backward-trace focuses on the implementation bottleneck in the compensation program, while the second examines the external quality control chain. Additional features of the institutional framework, such as the CHD-NMAC mandate parallelism, dual information systems, the TBI diagnosis, the agricultural-land split, and the Accounting Chamber's findings, are documented in Section 5.1 and are integrated as supporting evidence in the two backward-traces. These features help establish the broader structural context in which the mechanism operates and provide triangulation from external diagnoses. However, they do not, by themselves, trace the mechanism from specific outcomes to institutional sources. Evidence is classified using the plain-language categories introduced in Section 4.5 (strong confirming, moderate confirming, ambiguous, disconfirming), with the test type (smoking gun, hoop, or straw in the wind) indicated at the first mention in each backward-trace.

5.2.1 Backward-trace 1: Compensation-program implementation bottleneck (2024–2026)

The first backward-trace examines the compensation program. According to the Accounting Chamber audit (2025), no farmer received reimbursement for completed works before April 2024. Of 195 applications, 49 were converted to contracts. 532.36 million UAH was paid into producer special-purpose accounts, with less than one-third reaching operators. 392 million UAH remained frozen in those accounts for up to seven months. 26.9 percent of contracted area was demined by the mid-2025 audit cut-off. 191 farmer deaths were recorded between February 2022 and February 2025. The Ukraine Facility indicator on compensation program reach stood at 13 percent achievement against a 30 percent target. Roughly 1 billion UAH of international grant financing was not reflected in state reporting (Accounting Chamber of Ukraine, 2025). The evidence supports transaction-cost effects at the CHD-NMAC verification interface. These effects operated alongside start-up timing, legal maturation, seasonality, CHD institutional establishment, budget-flow procedures, and wartime constraints, all of which contributed to the observed low throughput during the period under review. Within

this combined explanatory frame, the Accounting Chamber findings function as strong confirming evidence for the presence of an institutional handover bottleneck at the architectural level identified by the trace.

The trace runs backward from these outcomes through the architecture. The bank-disbursement step required confirmation that the demining work had been performed and accepted. That confirmation depends on NMAC verification of demining facts through the non-technical-survey procedure operated by NMAC under Article 25. The Accounting Chamber identifies CHD's inability to obtain timely confirmation from NMAC, together with applicant tax debts under the exclusion rule, as the two causes of non-reimbursement (Accounting Chamber of Ukraine, 2025). The verification handover sits between two institutions in different administrative verticals: CHD under the Cabinet of Ministers Secretariat, NMAC under the Ministry of Defense. The procedure for this handover was not consolidated in a single act. It is the operational consequence of mandate parallelism between Article 25 (NMAC) and Article 25-1 (CHD).

The architectural source is Resolution 284 of 12 March 2024, which approved the procedure for use of state-budget funds for compensation of agricultural-land humanitarian demining costs (Cabinet of Ministers of Ukraine, 2024d). Resolution 284 established two compensation directions: an ongoing direction for work performed from April 2024 onward, and a retrospective direction for work performed between February 2022 and April 2024. Seven subsequent amendments refined the procedure (Cabinet of Ministers of Ukraine, 2024e, 2024f, 2024g, 2025k, 2025e, 2025h, 2026a): Resolution 580 of 17 May 2024, Resolution 990 of 30 August 2024, Resolution 1539 of 31 December 2024, Resolution 488 of 29 April 2025, Resolution 1301 of 10 October 2025, Resolution 1696 of 23 December 2025, and Resolution 366 of 25 March 2026. The last of these renamed the budget program and split the previously unified compensation concept into "cost coverage" for the ongoing direction and "compensation" for the retrospective direction (Cabinet of Ministers of Ukraine, 2026a). None of these amendments consolidated the institutional handover. Each refined procedure within the same parallel-mandate structure.

The land-plot inspection procedure adds another interface. Resolution 1009 of 20 August 2025 (Cabinet of Ministers of Ukraine, 2025c) established the procedure for inspection of land plots for explosive ordnance, with separate branches for cases where CHD acts as contractor and cases where it does not. Resolution 187 of 11 February 2026 (Cabinet of Ministers of Ukraine, 2026b) refined this procedure. Cross-vertical fund flow added another set of handovers: Order 1070-r of 1 October 2025 transferred 18.7 million UAH to MoD/SSTS and 61.4 million UAH to the Cabinet of Ministers Secretariat for CHD (Cabinet of Ministers of Ukraine, 2025d).

Rival testing

R1 (wartime capacity): the temporal pattern is incompatible with a pure wartime explanation. No farmer received reimbursement for completed works before April 2024,

despite the full-scale invasion continuing throughout this period. Capacity to receive applications and pay contracts emerged as the regulatory architecture matured, not as the security situation improved. R2 (donor conditionality): the architectural source is Resolution 284 and its seven amendments, all originating from Cabinet of Ministers decisions, with budget appropriation running through MoEEA as chief manager of budget funds rather than through donor-imposed conditions.

R3 (learning curve) is partially supported. Start-up timing, legal maturation, seasonality, CHD institutional establishment, and budget-flow procedures explain part of the delay observed in the period under review. They do not fully explain why the verification interface remained split between CHD and NMAC rather than consolidated in one operational procedure, which is the architectural source the trace identifies. The Resolution 990 retroactive change from 80/20 to 100 percent state coverage indicates substantive design adjustment alongside the learning component. Seven amendments to Resolution 284 were issued between 2024 and 2026, yet the verification bottleneck at the CHD-NMAC interface was not resolved, which weakens R3 as a complete explanation. None of the rival explanations fully accounts for the specific CHD-NMAC handover identified in the trace.

Table 5.2a. Backward-trace 1 evidence map: compensation-program implementation bottleneck.

Sequence	Mechanism step	Institutional link	Expected observable	Evidence found	Rival test	Assessment
1. Legal architecture	(a) Overlapping mandates multiply interfaces	Resolution 284 + Articles 25 and 25-1 of the Law on Mine Action	Two named institutions hold mandate for the same function under different administrative verticals	Article 25 (NMAC) and Article 25-1 (CHD) of the Law on Mine Action. CHD under CMU Secretariat, NMAC under MoD	R1 not supported. The architectural source (Resolution 284 and Articles 25, 25-1) was national and predates the absence of reimbursement. The temporal pattern of non-disbursement before April 2024 tracks regulatory rather than security developments.	Strong confirming
2. Institutional handover	(b) Jurisdictional	CHD depends on NMAC	Inter-institutional handover not	Accounting Chamber of	R2 not supported	Strong confirming

Sequence	Mechanism step	Institutional link	Expected observable	Evidence found	Rival test	Assessment
	ambiguity produces bargaining	confirmation for reimbursement	consolidated in a single act, and the audit identifies a named handover bottleneck	Ukraine (2025) identifies CHD's inability to obtain timely confirmation from NMAC	(procedural source is Resolution 284, national in origin)	
3.Verification/data interface	(c) Information asymmetries emerge	NMAC confirmation via non-technical-survey procedure	Parallel data systems, with gap in transferring confirmation data across the verification interface	Non-technical survey procedure runs through NMAC. Demining facts are tracked separately by CHD and MoEEA.	R3 partially explains early-stage delays, but does not explain the bottleneck as the principal cause	Moderate confirming
4. Operational outcome	(d) Decision delays and duplication reduce quality	Quantified throughput shortfall at the identified handover	Throughput shortfall at the identified handover	49 of 195 applications converted to contracts. 392 million UAH frozen up to seven months. 26.9 percent of contracted area demined by mid-2025. Ukraine Facility stood at 13 percent against 30 percent target (Accounting Chamber of Ukraine, 2025)	No rival fully explains the specific CHD-NMAC handover.	Moderate confirming. Institutional bottleneck strongly evidenced. Magnitude of throughput shortfall is co-determined by start-up, legal-maturation, seasonal, and budget-flow factors.
5. Rival assessment	Wartime capacity and learning curve do not explain the	Legal architecture and national legal sources trace	Evidence remains consistent with the mechanism after R1, R2, and R3 tests.	R1 incompatible with temporal pattern. R2 incompatible	Rivals: R1 (wartime), R2 (donor conditionality),	Mechanism supported

Sequence	Mechanism step	Institutional link	Expected observable	Evidence found	Rival test	Assessment
	CHD-NMAC bottleneck	architectural source		with the national budget chain. R3 partial only	R3 (learning curve)	

Note: Author's process-tracing evidence map based on the sources cited in the table.

5.2.2 Backward-trace 2: External quality control chain (2024–2026)

The second backward-trace examines the external quality control chain. Its outcome is architectural rather than operational. Section II Generalized Indicators in the 2026 Plan sets planned 2026 targets of 95.67 km² of clearance and 20.98 km² of external quality control (EQC) inspection (National Mine Action Authority, 2025). The implied planned coverage ratio is 22 percent. Available documents reviewed for this thesis provide EQC planning targets and institutional procedures but do not provide a verified public time series of EQC outputs for 2024–2025. Backward-trace 2 is therefore treated as architectural rather than output-based. The National Mine Action Strategy itself diagnoses the architecture: the Strategy section on quality management states that the capacity of identified entities is insufficient to meet sector needs and leads to delays in quality control, and that external monitoring of all types of mine action requires attention (Cabinet of Ministers of Ukraine, 2024a). This diagnostic functions as a hoop test for mechanism step (a): the mechanism requires the architecture to be diagnosed as fragmented at the entry point. The Strategy's explicit acknowledgment satisfies this requirement. The trace maps to the four mechanism steps set out in Table 5.2b: step (a) at the legal and planning source, step (b) at the multi-body institutional assignment, step (c) in the operator-side information-asymmetry evidence, and step (d) in the planned coverage ratio.

The trace runs backward from this architectural condition. The EQC processing chain under the 2026 Plan moves through operator application to NMAC, transfer of the request to the NMAA Secretariat, and coordination with an accredited body (National Mine Action Authority, 2025, paragraph 9). DSTU 8820-1:2023, effective 1 March 2024, defines accredited conformity assessment bodies and inspection bodies, sets the minimum one percent sample of demined territory, and assigns the issuance of the certificate of transfer of responsibility (UkrNDNTs, 2023). The Strategy identifies three potential bodies for the quality management function: the Mine Action Center under MoD, the Interregional Center for Humanitarian Demining and Rapid Response under SESU/MoIA, and the Demining Center of the Armed Forces of Ukraine. These bodies sit under three different administrative verticals. The formal design distributes the EQC function across three verticals without consolidation.

Operator-side evidence points in the same direction. ACAPS (2024) records that in Ukraine, demining operators must undergo an additional government inspection step that severe staff shortages within the inspection authority can delay. The GICHD and EY capacity gap assessment (2026) of 19 certified operators reports a median total headcount of 24

employees, with a median mine-action headcount of 14, indicating that many operators remain relatively small in scale. Eighty-four percent of operators score the minimum on HR practices. Fifteen of 19 operators report no compliance monitoring by regulatory authorities other than the certification body, and 6 of 19 reported no compliance monitoring by the certification authority during the previous 12 months (GICHD & EY, 2026).

Reform-side recognition of the architectural problem is recorded in two meeting statements. At the December 2025 Sectoral Working Group meeting, the UN Senior Mine Action Advisor proposed an independent non-commercial validation system and identified the need for a functional quality management and quality assurance system (Sectoral Working Group on Humanitarian Demining, 2025c). At the July 2025 meeting, the Deputy Minister noted the option of delegating non-technical survey functions exclusively to state or non-profit organizations to avoid conflict of interest (Sectoral Working Group on Humanitarian Demining, 2025a). These statements indicate awareness of the architecture documented above. They are reform-side observations rather than independent tests of the mechanism, and are not used in the rival-test logic.

Sector growth contextualizes the planning ratio. MoEEA reports 134 certified operators in early 2026, up from 73 in early 2024 (Ministry of Economy, Environment and Agriculture of Ukraine, 2026b). Operator growth helps contextualize the limited EQC planning ratio. The available documents show a planned 22 percent inspection-to-clearance ratio, while public sources do not provide a verified EQC output series for 2024–2025. The Accounting Chamber documents the operational consequence under the compensation program: 14.8 percent of operator-surveyed area received full certificates (Accounting Chamber of Ukraine, 2025). This figure derives from 7.75 thousand hectares with issued certificates (p. 4) divided by 52.5 thousand hectares surveyed by operators within humanitarian demining plans (p. 13).

Rival testing

R1 (wartime capacity): the planned ratio is a National Mine Action Strategy and Operational Plan 2024–2026 target, set by the government's own assessment of sector capacity rather than by wartime constraint. R2 (donor conditionality): the architectural choice rests on Order 616-r of 28 June 2024 (National Mine Action Strategy and Operational Plan 2024–2026), with the EQC procedural chain set out in national legal instruments. No donor-imposed condition determines the assignment of EQC functions across the three identified bodies. R3 (learning curve): DSTU 8820-1:2023 became effective 1 March 2024, which makes some delay plausible. The structural ratio of 22 percent, however, is a planning choice, not a learning outcome.

Table 5.2b. Backward-trace 2 evidence map: external quality control chain.

Sequence	Mechanism step	Institutional link	Expected observable	Evidence found	Rival test	Assessment
1. Legal / planning source	(a) Overlapping mandates multiply interfaces	Strategy + 2026 Plan define EQC architecture and targets	EQC function distributed across multiple bodies in different administrative verticals	Strategy names three potential bodies: NMAC under MoD, Interregional Center under SESU/MoIA, and Demining Center under AFU. Strategy diagnoses insufficient capacity (Cabinet of Ministers of Ukraine, 2024a)	R1 not supported (planned ratio is a national planning target, not security-driven)	Strong confirming (hoop test passed)
2. Institutional assignment	(b) Jurisdictional ambiguity produces bargaining	EQC across NMAC, SESU/MoIA Interregional Center, AFU Demining Center	Quality-management function distributed across multiple actors without a single consolidating procedure	NMAC under MoD, Interregional Center under SESU/MoIA, and Demining Center under AFU	R2 not supported (architectural choice in national Order 616-r)	Strong confirming
3. Processing chain	(b) Multi-step chain crosses jurisdictional interfaces	Operator → NMAC → NMAA Secretariat → accredited body	Processing chain crosses multiple institutional interfaces, each requiring inter-agency handover.	EQC chain moves from operator to NMAC, transferred to NMAA Secretariat, coordinated with accredited body (National Mine Action Authority, 2025, par. 9)	R2 not supported (no donor-imposed condition determines assignment)	Moderate confirming
4. Triangulation	(c) Information asymmetries emerge	Operator-side reports and parallel	Operator-side reports of monitoring gaps and parallel	ACAPS (2024): operator-side capacity	R3 partially explains early-stage delays (DSTU 8820-	Moderate confirming

Sequence	Mechanism step	Institutional link	Expected observable	Evidence found	Rival test	Assessment
		reporting channels	reporting channels	constraints. GICHD and EY (2026): 15 of 19 operators reported no compliance monitoring by regulatory authorities other than the certification body, and 6 of 19 reported no compliance monitoring by the certification authority during the previous 12 months	1:2023 effective 1 March 2024). Structural 22 percent ratio is a planning choice	
5. Capacity / output implication	(d) Decision delays and duplication reduce quality	2026 Plan clearance and EQC planning targets	Planned EQC inspection coverage substantially below planned clearance volume, consistent with insufficient quality-management capacity diagnosed in the Strategy.	2026 Plan: 95.67 km² planned clearance against 20.98 km² planned EQC inspection (22 percent ratio).	No rival fully explains the limited planned EQC coverage.	Strong confirming
6. Rival assessment	Learning curve is plausible, but the 22 percent ratio is a planning choice	National Mine Action Strategy and Operational Plan 2024–2026 (Order 616-r) as	Evidence remains consistent with the mechanism after rival tests.	R1 incompatible: planned target is national. R2 incompatible: no donor condition determines	Rivals: R1 (wartime), R2 (donor conditionality), R3 (learning curve)	Mechanism supported

Sequence	Mechanism step	Institutional link	Expected observable	Evidence found	Rival test	Assessment
		national legal sources		assignment. R3 partial only		

Note: Author's process-tracing evidence map based on the sources cited in the table.

5.2.3 Comparison between the two backward-traces

The two backward-traces examine cases that differ on three dimensions. They rest on different legal bases: Backward-trace 1 follows a budget appropriation procedure under Resolution 284, Backward-trace 2 follows a technical standard under DSTU 8820-1:2023 and the 2026 Plan. They cover different operational substances: a financial flow in Backward-trace 1, a quality assurance pathway in Backward-trace 2. They sit at different stages of architectural development. Backward-trace 1 examines an operating system with measurable implementation shortfalls. Backward-trace 2 examines a system whose architecture exists in legal form but whose operational output is not yet measurable. The mechanism finding holds across these differences. In Backward-trace 1, the bottleneck is documented at the CHD-NMAC verification handover. In Backward-trace 2, the architectural diagnosis is documented in the Strategy itself, with triangulating operator-side evidence from GICHD and EY (2026) and ACAPS (2024). Reform-side stakeholder statements recorded in the Sectoral Working Group minutes provide context on awareness of the architecture but are not used as mechanism-test evidence.

5.2.4 Summary of the process-tracing evidence

Table 5.2c summarizes the two backward-traces. The per-trace evidence maps appear as Tables 5.2a and 5.2b above.

Table 5.2c. Summary evidence map for the two backward-traces.

Backward-trace	Step	Principal evidence source	Test type	Verdict
1. Compensation-program implementation bottleneck	(d)	Accounting Chamber audit 2025. Resolution 284 with seven amendments through Resolution 366	Moderate confirming	Moderate confirming (institutional bottleneck strongly evidenced)
2. EQC chain	(a)	National Mine Action Strategy 2024. 2026 Plan Section II. ACAPS 2024. GICHD and EY 2026	Hoop	Strong confirming

Note: Author's process-tracing evidence map based on the sources cited in the table.

Both backward-traces support the H1 mechanism in mechanism-specific terms. The two traces identify different points in the same coordination problem. The compensation-program trace shows a financing and verification bottleneck at the CHD-NMAC interface. The EQC trace shows a quality-management and planning interface at the architectural entry point. The

finding holds across two cases that differ in legal foundation, operational content, and stage of development. The process-tracing evidence is consistent with the transaction-cost mechanism predicted by H1 within the two focal episodes. It does not rank either trace as more consequential than the other.

5.3 Cross-Case QCA (Fuzzy-Set Qualitative Comparative Analysis)

5.3.1 Data and Calibration

Eleven mine-affected states are coded from Mine Action Review annual assessments, Landmine Monitor country profiles, and the World Bank Worldwide Governance Indicators. Three conditions are calibrated using the R QCA package calibrate() function with logistic curves fitted through three theoretically grounded anchors (Duşa, 2019). NMAA consolidation (anchors: 3/6/9 on a 0-to-10 scale) captures the degree to which a single authority holds operational control. Post-conflict status (anchors: 3/6/9) captures the absence of active hostilities. State capacity, operationalized through WGI Government Effectiveness (anchors: -1.40/-0.50/0.40), captures the broader institutional environment (Kaufmann & Kraay, 2025). All WGI values use the 2025-revised series with the 2024 dataset year, which is the methodology vintage applied throughout. Program effectiveness (anchors: 3.5/5.5/7.5 on the MAR scale) is the outcome.

Nine outcome scores are verified directly from Mine Action Review performance tables with exact page citations. Two carry estimated scores. Vietnam is not a State Party to the Cluster Munition Convention, so the MAR scoring framework does not produce an aggregate score. The 6.0 estimate is a researcher coding decision based on documentary triangulation: upward clearance output trend, coordinated NGO presence, weak national strategy and standards as flagged in the Clearing Cluster Munition Remnants 2025 recommendations (Mine Action Review, 2025b), and the central role of the Ministry of Defense as both authority and primary operator. Mozambique completed its program in 2015 with the Article 5 Declaration of Compliance (Republic of Mozambique, 2015). The 7.5 reflects completion under that declaration, anchored to CTM 2015. The two estimated outcomes function only as supporting evidence: the "Drop estimated cases" specification in Table 5.6 confirms that the NMAA * POST path remains stable without them.

Table 5.3. Fuzzy-set membership scores (logistic calibration). Afghanistan and Colombia sit at the 0.500 crossover on POST. Afghanistan also at 0.500 on NMAA.

Case	NMAA	POST	CAP_GE	OUT	Raw OUT
Croatia	0.950	0.981	0.981	0.871	6.8
Cambodia	0.813	0.950	0.663	0.924	7.2
Bosnia-Herzegovina	0.273	0.950	0.361	0.210	4.6

Case	NMAA	POST	CAP_GE	OUT	Raw OUT
Serbia	0.620	0.981	0.878	0.463	5.4
Iraq	0.050	0.727	0.074	0.427	5.3
Lao PDR	0.727	0.981	0.415	0.934	7.3
Angola	0.727	0.950	0.232	0.913	7.1
Vietnam	0.620	0.981	0.791	0.676	6.0
Afghanistan	0.500	0.500	0.002	0.643	5.9
Colombia	0.813	0.500	0.781	0.887	6.9
Mozambique	0.620	0.950	0.454	0.950	7.5

Note: Author's fsQCA calibration and analysis based on Mine Action Review, WGI, UCDP, and Landmine Monitor sources listed in Appendix A and Appendix C.

5.3.2 Necessity Analysis

Table 5.4. Necessity analysis for program effectiveness.

Condition	Consistency	Coverage	Necessary?
POST_CONFLICT	0.933	0.780	Yes
NMAA_CONSOLIDATED	0.812	0.955	No
STATE_CAPACITY (GE)	0.613	0.860	No

Note: Author's fsQCA calibration and analysis based on Mine Action Review, WGI, UCDP, and Landmine Monitor sources listed in Appendix A and Appendix C.

Among the conditions tested, only post-conflict stability meets the 0.90 consistency threshold required to be considered necessary (Schneider & Wagemann, 2012). NMAA consolidation does not meet the necessity standard, as shown in Table 5.4. The key exception is Angola, where strong fiscal commitment (USD 240 million pledged through 2028 per Mine Action Review, 2025a) appears to compensate for incomplete institutional consolidation, resulting in outcome membership exceeding the NMAA score.

Analysis of the negated outcome reveals an informative asymmetry: the absence of NMAA consolidation is necessary for program failure (consistency 0.904). While consolidation is not strictly necessary for success, its absence is reliably associated with failure in the observed sample. This pattern is consistent with the transaction-cost framework, which predicts

that dispersed governance architectures impose coordination costs that are necessary, though not always sufficient, for weak outcomes.

5.3.3 Sufficiency Analysis

The complex solution, derived without simplifying assumptions on logical remainders, generates:

*NMAA * POST_CONFLICT → PROGRAM_EFFECTIVENESS*

Consistency: 0.953. Coverage: 0.772. PRI: 0.933.

The parsimonious solution, which incorporates all simplifying assumptions consistent with the truth table, reduces this to NMAA alone (consistency 0.956, PRI 0.938, coverage 0.812). The intermediate solution with directional expectations for NMAA, POST, and CAP_GE set positive coincides with the parsimonious solution here, because both observed positive-outcome configurations share NMAA in their conjunction. The convergence across solution types indicates that the substantive finding is not sensitive to assumptions about logical remainders. Because POST_CONFLICT is independently necessary for effectiveness, the substantive interpretation remains that NMAA consolidation matters under post-conflict conditions, even though the minimized intermediate expression drops POST.

State capacity does not appear in the sufficient path. Including Government Effectiveness as a condition does not improve the explanatory model. It reduces consistency to 0.937 and lowers coverage by more than 20 percentage points to 0.567. This pattern is driven by three cases (Lao PDR at 40.0th percentile, Angola at 36.1st percentile, and Mozambique at 40.8th percentile) which achieve strong outcomes despite relatively low state capacity. The implication is that mine-action programs can succeed in lower-capacity governance settings when NMAA consolidation allows for internal coordination and oversight. This aligns with the concept of institutional substitution, in which sector-specific authorities provide regulation, tasking, quality assurance, and information management that the broader state cannot reliably deliver.

Three truth-table rows are observed. The R QCA package excludes cases at exactly 0.500 from truth-table assignment (Afghanistan sits at 0.500 on both NMAA and POST, while Colombia sits at 0.500 on POST). This does not affect the minimization result.

Table 5.5. Truth table (3 observed configurations). Afghanistan and Colombia excluded from assignment due to crossover positions.

Configuration	**N**	**Consistency**	**Cases**
NMAA \ *POST* | \~CAP	3	0.982	Lao PDR, Angola, Mozambique
NMAA \ *POST* | CAP	4	0.937	Croatia, Cambodia, Serbia, Vietnam
\~NMAA \ *POST* | \~CAP	2	0.793	Bosnia-Herzegovina, Iraq

Note: Author's fsQCA calibration and analysis based on Mine Action Review, WGI, UCDP, and Landmine Monitor sources listed in Appendix A and Appendix C.

The {110} configuration (consolidated NMAA, post-conflict, low capacity) carries the highest consistency (0.982). These three cases provide the clearest empirical support for the institutional substitution mechanism. The {010} configuration (no NMAA, post-conflict, low capacity) has the lowest consistency (0.793), just below the 0.80 threshold. Both Bosnia and Iraq have outcome scores below the crossover, confirming that post-conflict stability alone does not produce effectiveness.

5.3.4 Deviant Cases

Croatia holds the highest NMAA consolidation (0.950) and full post-conflict status (0.981). Its outcome (0.871, raw 6.8/10, "Average") is lower than the sufficient path predicts. MAR 2025 identifies the source: 31 percent of areas cleared in 2024 contained no anti-personnel mines, and the 2015 demining law restricts mine detection dogs to clearance rather than survey (Mine Action Review, 2025a). Consolidated governance enables progress toward completion but does not guarantee operational efficiency. Efficiency depends on technical decisions that the NMAA governance variable does not capture.

Serbia's gap is the largest in the sample (-0.157). SMAC coordinates survey and clearance but does not conduct clearance itself. In 2024, no clearance took place. Only 0.12 km² was released through technical survey. The program is requesting its fourth Article 5 extension (Mine Action Review, 2025a). De jure governance consolidation does not translate to program delivery when political prioritization and donor coordination remain weak.

Bosnia-Herzegovina confirms the transaction-cost prediction. BHMAC's authority is mediated through a Demining Commission structured along political representation lines and two entity-level civil protection administrations. Only BHMAC can conduct non-technical survey, but operators have been denied the ability to do so. Land release output fell to 0.17 km² in 2024. MAR describes the 2025-2027 targets as "entirely unrealistic" (Mine Action Review, 2025a). When governance functions are distributed across multiple bodies without clear hierarchical resolution, the resulting coordination costs reduce program effectiveness.

5.3.5 Robustness

*Table 5.6. Robustness battery for NMAA * POST → OUT.*

Specification	**Consistency**	**Coverage**
Primary (N=11)	0.953	0.772
Drop estimated cases (N=9)	0.942	0.775
Core verified cases (N=7)	0.928	0.814
Regulatory Quality substitution	0.953	0.772

Specification	Consistency	Coverage
NMAA crossover 5.0	0.899	0.824
NMAA crossover 5.5	0.929	0.807
NMAA crossover 7.0	0.984	0.612
OUT crossover 5.0	0.990	0.740
OUT crossover 6.0	0.895	0.802
Afghanistan pre-2021 coding	0.951	0.725
Afghanistan post-2021 coding	0.950	0.716

Note: Author's fsQCA calibration and analysis based on Mine Action Review, WGI, UCDP, and Landmine Monitor sources listed in Appendix A and Appendix C.

Consistency stays above 0.89 across every specification in Table 5.6. The Regulatory Quality substitution produces identical results (GE and RQ correlate at rho = 0.927, $p < 0.001$). Case exclusion and the Afghanistan dual-period sensitivity test preserve the solution formula.

5.3.6 Correlations

Table 5.7. Spearman correlations (N=11, $p < 0.05$).

	NMAA	POST	CAP_GE	OUT
NMAA	1.000	0.276	0.604*	0.627*
POST	0.276	1.000	0.631*	0.134
CAP_GE	0.604*	0.631*	1.000	0.145
OUT	0.627*	0.134	0.145	1.000

Note: Author's fsQCA calibration and analysis based on Mine Action Review, WGI, UCDP, and Landmine Monitor sources listed in Appendix A and Appendix C.

The correlation between NMAA consolidation and program effectiveness (rho = 0.627, p = 0.039) is the only statistically significant bivariate association observed (see Table 5.7). Correlations for post-conflict status and state capacity are not significant, which suggests that the relationship is primarily configurational rather than linear. The QCA results clarify H2: NMAA consolidation combined with post-conflict stability forms a sufficient path to program effectiveness (consistency = 0.953), while lack of consolidation is necessary for failure (consistency = 0.904). State capacity does not play a significant role in the sufficient path. H0-2 is rejected in its broad no-relationship form, but H2 is supported only in a qualified

configurational form. NMAA consolidation is not individually necessary for success. It forms part of a sufficient path when combined with post-conflict stability, while its absence is necessary for failure.

CHAPTER 6. DISCUSSION

6.1 Within-Case Findings

The within-case and cross-case evidence point to the same issue: the distribution of authority matters for mine-action coordination. In Ukraine, the RFI captures a dispersed network of institutions, with mandate dispersion rising sharply in 2023 and then stabilizing at an elevated level. Process tracing shows how this structure produced coordination costs in two episodes. The cross-case QCA points in the same direction: sector-specific consolidation matters more than aggregate state capacity alone in the cases examined. External assessments repeatedly identify institutional fragmentation as a central source of coordination problems (Tony Blair Institute for Global Change, 2025; Accounting Chamber of Ukraine, 2025; GICHD & EY, 2026; Mine Action Review, 2025a).

The compensation program provides the most clearly quantified within-case evidence. The bottleneck that developed at the interface between CHD and NMAC led to 392 million UAH in funds remaining frozen for up to seven months and only 49 of 195 applications being converted into contracts (Accounting Chamber of Ukraine, 2025, pp. 11, 14). This resulted in agricultural land remaining contaminated, farmers being unable to access compensation, and a clearance rate that the Accounting Chamber considers inadequate for the scale of contamination.

The gap between operator output and the certification cycle is consistent with processing constraints in the certification chain. CHD coordinates operational work, while NMAC retains verification authority under the Ministry of Defense. The procedural split between these bodies is a feature of the current architecture.

H1 is supported in mechanism-specific terms. The two backward-traces identify the transaction-cost mechanism at specific institutional interfaces, alongside start-up, legal-maturation, seasonal, budget-flow, and wartime constraints. The finding is not a claim that fragmentation prevents progress in Ukraine's mine-action sector. The within-case evidence supports a narrower claim: formal mandate dispersion creates avoidable coordination costs at specific institutional interfaces.

Interpreting the RFI trajectory through the lens of layering, as described by Mahoney and Thelen (2010), helps make sense of these findings. Each institutional change in Ukraine’s mine-action sector between 2022 and 2025 involved adding a new body, information system, processing step, or coordination requirement. There were no instances of displacement or conversion, only additions. As a result, fragmentation increased steadily, and this mode of change makes reversal difficult. Moving from layering to displacement, which would be necessary to reduce fragmentation, requires stronger political coalition-building. The presence of two competing draft laws in 2026 suggests that the sector may be nearing such a threshold.

Ukraine's mine-action sector has produced measurable operational progress under wartime conditions. Land release, operator growth, and donor support indicate that institutional fragmentation has not prevented sector activity. The claim of this thesis is narrower: formal

mandate dispersion increases coordination costs at specific institutional interfaces and can reduce implementation efficiency. Operational progress and institutional transaction costs can therefore coexist.

The scale of financing also makes the implementation question unusually consequential. Landmine Monitor 2025 reports that Ukraine received US$252.4 million in international mine-action funding in 2024, equal to 33 percent of all international donor funds and the largest country allocation for the third consecutive year (International Campaign to Ban Landmines, 2025). This annual disbursement figure should not be added to Ukraine's cumulative commitment figure of over USD 1.5 billion, which captures a different accounting category.

The transaction costs created by fragmentation are borne most heavily by small operators. For instance, a typical certified organization, with a median mine-action headcount of only 14 employees (GICHD & EY, 2026), must interact with multiple bodies: NMAC for tasking, the Secretariat for EQC coordination, the certification body for compliance, oblast administration for approvals, and CHD for agricultural land coordination. The Accounting Chamber found a significant gap between the area surveyed by operators and the area that completes the full certification cycle (Accounting Chamber of Ukraine, 2025, p. 13), which is consistent with processing constraints in the certification chain at the operator-output interface.

This pattern extends beyond the mine-action legislative framework to the victim assistance (VA) sub-sector. Records from the VA Working Group highlight issues such as the absence of a unified database, duplication of aid efforts, and inadequate referral pathways across the health, social protection, veterans affairs, and mine-action systems (Coordination Roundtable, 2024). Although the VA Working Group is able to coordinate effectively as a platform, it operates within a delivery architecture that remains fragmented and beyond its power to restructure. These observations suggest that the same coordination logic may also apply to other service pathways where authority is distributed across several institutional systems without a consolidation mechanism.

6.2 Cross-Case Findings

The QCA expands the analysis from a single country to a comparative sample of eleven. The main finding is that NMAA consolidation, when paired with post-conflict stability, is sufficient for program effectiveness (consistency 0.953, coverage 0.772). This sufficient configuration is stable across all test specifications, with consistency staying above 0.89 in each case.

Two patterns from the cross-case analysis matter for interpretation. First, institutional consolidation can compensate for low state capacity. For example, Lao PDR (GE 40.0th percentile), Angola (36.1st percentile), and Mozambique (40.8th percentile) each achieve strong outcomes despite WGI Government Effectiveness scores well below the global median. This is an example of institutional substitution: a single authority that centralizes coordination, information, and quality assurance can reduce transaction costs, even when the broader state apparatus is less effective. In Lao PDR, the NRA regulates and accredits all operators through a

dedicated decree, despite a Government Effectiveness score of -0.58. Similarly, ANAM in Angola manages task dossiers, quality control, and the transition to IMSMA Core, even though Angola's score is -0.79 (Mine Action Review, 2025a; Kaufmann & Kraay, 2025).

Second, formal consolidation alone is not enough if it does not come with real operational authority. Bosnia-Herzegovina has a designated BHMAC, but its outcome score (0.210) is among the lowest in the sample. Serbia's SMAC has the formal mandate but did not carry out any clearance operations in 2024. Effective consolidation depends on whether the single authority holds and exercises tasking, accreditation, and quality assurance responsibilities in practice.

The QCA finding that consolidated NMAA architecture is part of the sufficient path to effectiveness invites a counter-interpretation. Distributing quality assurance, regulation, tasking, and information management across several institutions can also be read as conflict-of-interest mitigation rather than as fragmentation pathology. The cross-case data cannot adjudicate this directly. Comparator cases vary on this dimension: Croatia's CROMAC consolidates these functions, while Bosnia-Herzegovina's BHMAC operates through a Demining Commission and entity-level civil protection administrations. The QCA finding about consolidation is retained. The qualification is that consolidation in practice should preserve independent quality assurance, appeal channels, and sample-based ex-post audit functions rather than concentrate all governance functions in a single decision authority without checks.

A measurement limit concerns the MAR aggregate outcome score. Mine Action Review evaluates programs using both IMAS prescriptive norms (International Mine Action Standards, 2025) and the program's own targets. Croatia provides a clear example: CROMAC uses a national prioritization methodology that differs from the IMAS sequence and sets unusually high annual targets (such as 63 km² of planned land release). As a result, a program that does not fully align with IMAS, or that sets ambitious targets, may receive a lower MAR aggregate score than its actual operational output would suggest. The QCA outcome variable therefore reflects program performance as assessed by MAR's methodology rather than operational delivery alone. For Ukraine, this is especially important: its future MAR score will depend both on actual performance and on how closely its national approach aligns with IMAS, a factor that can be shaped by institutional design choices.

Post-conflict status sets a boundary for the findings. Colombia and Afghanistan are partial exceptions to the post-conflict pattern. Colombia retains moderate effectiveness despite ongoing conflict through a consolidated mandate, while Afghanistan's outcome reflects sustained international support. These cases point to compensation mechanisms operating in different forms, but they do not overturn the necessity result. Post-conflict status is generally necessary but not universally so. For Ukraine, where conflict continues, Colombia serves as the most relevant comparator and suggests that architectural consolidation can offset the absence of stability.

The Balkans sub-group provides further illustration: Croatia (OUT = 0.871), Bosnia (0.210), and Serbia (0.463) all share a regional context but differ most clearly in terms of NMAA consolidation. At the same time, the VA Working Group's regular meeting schedule and 54-action workplan in 2025 demonstrate that effective coordination can still occur within a fragmented architecture, provided there is a clear platform with dedicated membership and secretariat support.

6.3 Application to Ukraine

Within-case evidence indicates that Ukraine's dispersed NMAA architecture leads to measurable coordination costs, primarily due to a layering process that has resulted in multiple institutions sharing governance functions without any consolidation mechanism. Cross-case evidence further indicates that NMAA consolidation is a consistent feature of all sufficient paths to program effectiveness. Together, these findings point to institutional consolidation as a main reform direction for Ukraine. The subsequent section (6.4) addresses the current trajectory of reform in light of two draft laws presently under legislative review.

However, the QCA results introduce an important qualification. Post-conflict stability appears as a necessary condition for program effectiveness in the broader sample, and Ukraine's ongoing conflict positions Colombia as its closest comparator in the sample on the active-conflict and architecture dimensions, not on funding scale or contamination profile. Ukraine's WGI Government Effectiveness score (-0.60) is similar to Bosnia-Herzegovina (-0.64) and Lao PDR (-0.58) (Kaufmann & Kraay, 2025), yet the QCA distinguishes these countries based on NMAA consolidation rather than state capacity.

A further consideration is the territorial dimension of fragmentation risk. As de-occupation advances, mine-action governance will need to function across a complex patchwork of military administrations, civilian oblast authorities, and regions with disrupted institutional continuity near the contact line. If the NMAA's jurisdiction and tasking authority are not clearly delineated across these different zones, operational fragmentation could arise, mirroring the structural coordination barriers seen in Bosnia. The clearance trajectory outlined in Chapter 1 could improve with institutional consolidation: streamlining the quality control chain and integrating information systems would likely increase the certification throughput rate (currently 14.8 percent), a variable that remains within the government's design control.

6.4 Current Reform Trajectory

These findings set the context for two draft laws currently under review in the Verkhovna Rada. Bill 15108 (Cabinet of Ministers of Ukraine, 2026d) proposes incremental changes and retains the NMAC-CHD parallel structure, which the within-case analysis identifies as central to persistent coordination costs. By contrast, Bill 15108-1 (Deputies of the Verkhovna Rada of Ukraine, 2026) takes an architectural approach, consolidating the four main functions into a single institutional hierarchy. The implementation implications of each approach are discussed further in Chapter 7.

According to the H1 mechanism, maintaining the existing parallel mandate structure will leave bargaining costs, information asymmetries, and processing delays at institutional boundaries unaddressed. The two bills represent different theories of reform. Their detailed assessment against the evaluation criteria of Section 7.2 is in Section 7.7.

6.5 Theoretical Implications

The RFI contributes a quantitative measurement approach for a dimension usually treated qualitatively. Earlier work by Kalmenovitz, Lowry, and Volkova (2025) showed that Herfindahl-Hirschman Index logic can be applied to regulatory authority dispersion, while Biermann, Pattberg, van Asselt, and Zelli (2009) provided a qualitative classification of governance fragmentation. By constructing an HHI from coded statutory mandate assignments in a development governance context, the RFI bridges these two approaches. The method is adaptable to other sectors, provided that mandates are codified and governance functions can be clearly identified. The RFI does not measure the same phenomenon as the ICRG or WGI. A country may score well on aggregate governance metrics while still struggling to coordinate within a specific sector if no single institution oversees the entire governance cycle. The moderate correlation between NMAA and Government Effectiveness (rho = 0.604) in the QCA sample reinforces the point that these are distinct measures.

The process tracing conducted in this thesis adapts transaction-cost economics to the field of humanitarian operational coordination, an area where this methodological approach has rarely been applied. While the concept of transaction costs appears informally in humanitarian literature (Balcik et al., 2010), systematic process tracing of the mechanism through institutional episodes in mine action or similar sectors is uncommon. The evidence assembled here suggests that the transaction-cost mechanism is especially influential when fragmented governance functions require regular negotiation between institutions to carry out routine tasks.

Whereas the standard framework of Gehring et al. (2017) moderates donor fragmentation by aggregate state capacity, this thesis introduces a new dimension: institutional thickness within a single sector (Amin & Thrift, 1995). For example, Ukraine's mine-action sector includes eight state institutions, multiple coordination platforms, and 108 certified operators as of July 2025 (Mine Action Review, 2025a). This level of internal sectoral complexity is not captured by the WGI Government Effectiveness score, but it is visible through the RFI.

6.6 Boundaries

This thesis is subject to several important boundaries. State capacity may influence outcomes through channels not captured by the RFI and QCA, such as fiscal sustainability, judicial enforcement, or public trust. For instance, the case of Croatia illustrates that institutional consolidation does not guarantee operational efficiency if other factors, like survey targeting, are suboptimal. Demand-side factors, including community trust, landowner cooperation, access limitations in conflict zones, and land restitution politics, fall outside the

scope of this analysis and could independently constrain program effectiveness. The findings are therefore most directly applicable to mine action and similar coordination-intensive sectors in post-conflict settings.

Another limitation relates to integrity risk. On 19 January 2026, Ukraine's National Police announced an investigation under abuse-of-office provisions concerning a 1,722-hectare demining contract for which 129 million UAH had been paid (Radio Svoboda, 2026). This thesis does not directly address whether fragmentation increases integrity risk. Its contextual observation is that when monitoring and verification authorities are dispersed across administrative verticals, the process for detecting discrepancies between recorded and actual field performance involves multiple institutional handovers. Assessing the integrity-risk pathway would require a separate analytical framework.

CHAPTER 7. POLICY IMPLEMENTATION RECOMMENDATIONS

7.1 Scope and Framing

This chapter addresses the practical challenge of implementation, specifically how responsibilities, procedures, and information systems can be organized to support the delivery of established mine-action policy. In accordance with Article 116 of the Constitution and Article 21 of the Law on Mine Action, the Cabinet of Ministers is responsible for the implementation of state policy in this area (Verkhovna Rada of Ukraine, 2018). All recommendations are framed within the existing legal framework, assuming the National Mine Action Strategy and its operational plans are already adopted.

The policy-analysis literature frequently identifies implementation as the stage where even well-designed policies are most likely to fail. Pal (2014) characterizes implementation as one of the most challenging phases in public policy, while Hogwood and Gunn (1984) argue that perfect implementation is unattainable, though it remains a useful normative standard for identifying and addressing gaps. This chapter draws on two specific conditions from Hogwood and Gunn that are most relevant to Ukraine's mine-action sector: the need for a single implementing authority or a clear hierarchy, and the importance of effective coordination between the bodies responsible for delivery.

In the mine-action sector, IMAS 01.10 translates these general conditions into a concrete institutional model: a single national mine action authority charged with regulation, management, and coordination of mine action in the affected country (International Mine Action Standards, 2025). Throughout this chapter, IMAS 01.10 serves as the benchmark for institutional design and effectiveness.

7.2 Evaluation Criteria

All recommendations in this chapter, as well as the assessment of draft laws in Section 7.7, are evaluated using five criteria. These criteria are derived from established policy-analysis frameworks (Bardach & Patashnik, 2019; Pal, 2014), and are adapted to the mine-action field through IMAS 01.10 for the effectiveness and coherence criteria, and through Ukrainian administrative law for the suitability criterion.

The first criterion, effectiveness, considers whether a recommendation or provision meaningfully addresses the fragmentation documented in Chapters 5 and 6, as measured against the IMAS 01.10 standard of a single authority. The second, political feasibility, assesses the likelihood of enactment given wartime constraints and the resistance of incumbent institutions to transferring mandates (Tony Blair Institute for Global Change, 2025). The third criterion, administrative suitability, evaluates compliance with the Law on Central Executive Bodies and the Cabinet of Ministers Regulations, particularly Paragraph 33(1), which requires that a single body be designated as the principal developer of any Cabinet act (Cabinet of Ministers of Ukraine, 2007). The fourth, efficient use of public funds, asks whether the recommendation maintains, reduces, or increases the budget envelope while also addressing disbursement inefficiencies (Accounting Chamber of Ukraine, 2025). The fifth criterion, coherence with international obligations, examines consistency with IMAS 01.10 and Article 5 of the Ottawa Convention.

7.3 From Findings to Functions

The recommendations are organized around functions before institutional design. The key question is which functions genuinely require a single executor and which can be left distributed across several organizations. Chapter 5 identifies eight institutions across seven governance functions in the Recipient Fragmentation Index. Four functions are the primary sources of documented dispersion and coordination costs, and are thus targeted for consolidation: operational planning and tasking, accreditation and certification, quality assurance, and information management. The remaining three functions are appropriately distributed and do not require consolidation: field operations, EORE delivery, and victim assistance service delivery. Their allocation reflects operational realities rather than coordination failure.

7.4 Recommendation 1. Designate a Single Executor for the Four Consolidated Functions

A single executor should be responsible for the four functions identified in Section 7.3. This recommendation is grounded in the cross-case evidence from Chapter 5, which shows that a consolidated NMAA architecture, together with post-conflict stability, is sufficient for program effectiveness. Conversely, the absence of consolidation is consistently associated with program failure.

Three institutional candidates are administratively defensible. The Ministry of Defense chairs the NMAA and houses the NMAA Secretariat. The Ministry of Internal Affairs through

SESU originated CHD and operates field capacity. A new central executive body with special status outside any line ministry is the architecture proposed in draft law 15108-1. MoEEA is not a suitable operational executor: despite its role in Strategy monitoring, prioritization, and the compensation channel, it does not task operators, run accreditation, or perform quality assurance, and has no field capacity.

The thesis identifies streamlining as a desirable governance direction, not as an administratively simple reform. Ukraine's mine-action architecture emerged through several ministries, with equipment, personnel, mandates, and budget flows already distributed across MoD, MoIA/SESU, and MoEEA. Under martial law, immediate full consolidation would be politically and administratively difficult. The practical question is how to reduce avoidable interfaces while preserving operational capacities already embedded in different institutions.

Consolidation should not remove external checks. The recommended model concerns clearer executive responsibility for the four functions identified in Section 7.3. Independent quality assurance, sample-based ex-post audit functions, appeal channels for operators, and parliamentary or Accounting Chamber oversight should remain institutionally protected. The cross-case QCA does not test the integrity dimension directly. The recommendation therefore couples executive consolidation with explicit institutional protection for independent verification.

Implementation is best approached in two phases. During martial law, a full transfer of responsibility away from the existing MoD/NMAC coordination chain would be administratively difficult. The immediate Cabinet act should therefore keep NMAC as the operational executor for the four consolidated functions, with CHD handling operator-facing tasks under a single delegated procedure. Principal-developer responsibility should rest with MoD, while MoIA/SESU should be involved as a mandatory co-developer or consulted institution because of its field capacity and civil-protection mandate. For the post-martial-law period, the more coherent consolidation pathway should shift toward the civil-protection logic represented by MoIA/SESU, or toward the stronger NAMA model proposed in Bill 15108-1.

7.5 Recommendation 2. Sequence Information System Integration After Institutional Consolidation

At present, mine-action operations rely on parallel information platforms: IMSMA, the Registry of Contaminated Territories, GRIT, the Diia certification portal, and several citizen-facing portals. The Accounting Chamber has noted that nearly one billion hryvnia of international grant funding was not reflected in official state reporting (Accounting Chamber of Ukraine, 2025). Integrating these information systems is a matter of governance design rather than a technical challenge. Attempting integration without first establishing clear institutional ownership risks perpetuating the current fragmentation at the data level. To avoid this, information system integration should be sequenced after institutional consolidation. Under Recommendation 1, the designated executor would serve as technical administrator of an integrated mine-action information system, with a single Cabinet resolution setting out data-

sharing obligations for all participants. The principal developer remains the body identified in Recommendation 1. The reporting gap identified by the Accounting Chamber reflects both architectural dispersion and accounting reconciliation. Integration of the information system addresses the architectural component. Reconciliation procedures and donor-reporting alignment address the accounting component. The two are complementary.

7.6 Recommendation 3. Consolidate the Compensation Verification Chain into a Single Procedure

The Resolution 284 compensation program shows the CHD-NMAC verification chain as the most specific bottleneck documented in Chapter 5 (Cabinet of Ministers of Ukraine, 2024d; Accounting Chamber of Ukraine, 2025). Addressing this bottleneck requires a targeted amendment to Resolution 284, drafted under the lead ministry identified in Recommendation 1. Two design options are available: one keeps NMAC as the verifying authority, but introduces a maximum review period, a deemed-confirmation rule, and a single-channel data exchange. The other assigns verification responsibility to CHD, with NMAC maintaining a sample-based ex-post audit function. The independent non-commercial verification proposal discussed at the December 2025 Sectoral Working Group meeting (Sectoral Working Group on Humanitarian Demining, 2025c) is a stakeholder-side proposal recorded in the minutes. It is consistent with the verification-redesign options listed under this recommendation but has not been worked into a full alternative design and is not endorsed here as such.

7.7 Assessment of Pending Legislative Initiatives

Section 6.4 introduced Bills 15108 and 15108-1 as two different reform logics. This section evaluates them against the criteria in Section 7.2.

The two bills also differ with regard to the four core functions outlined in Section 7.3. Bill 15108 amends only a small number of provisions in the existing Law on Mine Action, transfers NMAA chairmanship after martial law to the minister responsible for civil protection, and expands NMAC's registry responsibilities. However, it retains the parallel-mandate structure of Articles 25 and 25-1. In contrast, Bill 15108-1 rewrites the law with a three-tier approach: the NMAA becomes an inter-ministerial collegial body limited to strategic coordination, the National Agency for Mine Action (NAMA) is created as a central executive body with special status, and CHD is made a legal entity of public law under NAMA, functioning as a single window for operators and donors. NMAC's functions are either transferred to NAMA (policy, standards, quality assurance) or to CHD (operational planning, monitoring, certification).

Table 7.1. Assessment of Bills 15108 and 15108-1 against the five evaluation criteria.

Criterion	**Bill 15108 (Cabinet)**	**Bill 15108-1 (alternative)**
Effectiveness against diagnosed fragmentation	Parallel NMAC and CHD structure preserved. The 22.5 percent RFI step-change of 2023 is not reversed. The chairmanship	Consolidates the four functions of §7.3 under NAMA and CHD in a single

	transfer addresses one of the seven coded functions.	hierarchy. NMAC functions migrate to NAMA or CHD.
Political feasibility	Cabinet-sponsored, incremental, preserves incumbent positions, aligned with the government's stated reform trajectory.	Deputies' sponsorship. Redistributes mandates against incumbent interests, requiring extensive transitional legislation under wartime constraints on legislative attention.
Administrative suitability	Builds on the existing four-function set without disrupting existing ministerial structures, with modest subordinate adjustment.	Creates a special-status central executive body outside the standard ministerial hierarchy. Substantial transitional burden but resolves the fragmentation diagnosis directly.
Efficient use of public funds	Declared zero budget impact. Does not address the disbursement chain bottleneck documented in Backward-trace 1.	Architectural consolidation generates non-trivial transitional costs. Consolidation of overlapping functions reduces ongoing coordination overhead in the medium term.
IMAS/Ottawa coherence	Aligns NMAC and Registry functions more closely but preserves residual fragmentation in the EQC chain.	Aligns institutional architecture with IMAS 01.10 prescriptive model of a single NMAA holding the four core functions.

Note: Author's assessment based on the five criteria defined in Section 7.2.

The two bills represent different implementation philosophies. Bill 15108 is closer to a status-quo-plus model that adjusts the existing architecture without restructuring it. Bill 15108-1 represents a stronger consolidation model that rewrites the Law on Mine Action around a three-tier architecture with NAMA, CHD, and the inter-ministerial NMAA. A feasible reform path requires choosing, sequencing, or reconciling these logics rather than mechanically merging them.

The preferred policy direction is sequencing. Bill 15108 can serve as a near-term status-quo-plus correction where it clarifies procedures and aligns related laws without disrupting wartime operations. Bill 15108-1 is closer to the long-term consolidation logic supported by the cross-case evidence, and it is the architectural direction the thesis recommends.

Three transitional conditions are essential. NAMA must inherit operational capacity from NMAC and CHD rather than be established as a parallel new structure, because the Bosnia-Herzegovina case shows that nominal consolidation without operational authority produces poor outcomes. The transition should be sequenced through the wartime period rather than parallel-established under martial law. Equipment, personnel, and operational responsibility currently distributed across MoD, MoIA/SESU, and MoEEA should migrate to the new architecture without disrupting ongoing operations.

Appendix D provides a detailed legal description of both bills, a cross-reference to NAMA Article 12, a discussion of the explanatory note’s inconsistency on the new body’s name, and a full analysis against each evaluation criterion.

7.8 Boundaries

Several proposals fall outside this chapter's scope. For example, creating a new coordinating body above the current coordinators would likely increase layering rather than reduce it. A useful diagnostic for reform is whether the total number of institutions with mine-action mandates decreases following a change. The Sectoral Working Group and the Victim Assistance Working Group both operate effectively within the current architecture, but are not positioned to restructure it and are not the focus of these recommendations. Similarly, the choice between expressing mine-action policy through a Verkhovna Rada-approved National Program or a Cabinet-approved National Strategy is a matter of policy formation, not implementation, and falls outside the scope of this discussion.

CHAPTER 8. CONCLUSIONS

This thesis examined how NMAA architecture shapes coordination effectiveness. The within-case analysis showed that institutional fragmentation, as measured by the RFI, rose sharply in 2023 and remained elevated through 2025. This was primarily a result of institutional layering. Process tracing of two key episodes provided evidence for a four-step transaction-cost mechanism: overlapping mandates increased the number of interfaces, jurisdictional ambiguity led to bargaining costs, parallel information systems created asymmetries, and processing delays accumulated at institutional boundaries. Cross-case analysis of 11 mine-affected states revealed that consolidated governance combined with post-conflict stability is sufficient for program effectiveness, whereas the absence of consolidation is necessary for failure. These findings indicate that institutional design appears to be a more immediate constraint than overall state capacity in the cases examined. The empirical results refine the initial theoretical expectations: H1, that fragmentation increases coordination costs, and H2, that consolidation is associated with effectiveness. The evidence supports H1 in mechanism-specific terms. The process-tracing evidence is inconsistent with H0-1 within the two focal episodes. H2 is supported in a qualified configurational form. NMAA consolidation is not individually necessary for success, but it forms part of a sufficient path with post-conflict stability, and its absence is necessary for failure. H0-2 is therefore rejected only in its broad no-relationship form.

8.1 Limitations

The within-case analysis is limited to one country over a four-year period. While process tracing provides evidence for the mechanism, it does not establish statistical generalizability. Triangulation with four external assessments (Tony Blair Institute, Accounting Chamber, GICHD and EY, Mine Action Review) enhances the credibility of the findings, but these assessments are not fully independent and may reflect overlapping sources. The RFI measures the formal distribution of mandates, yet informal authority and actual coordination practices may diverge from the legal architecture. For example, the VA Working Group is able to coordinate effectively even without formal decision-making power.

The cross-case QCA relies on secondary data from eleven cases, two of which (Vietnam and Mozambique) use estimated outcome scores. Some cases, such as Serbia, Angola, and Lao PDR, are near the crossover point on certain variables, making results somewhat sensitive to calibration. Croatia and Serbia are deviant cases in the sufficient path. The MAR scoring system considers both target achievement and governance quality. Countries with more ambitious goals may therefore receive lower scores than those with more conservative targets, even at similar levels of operational output. This nuance introduces a measurement limitation that the NMAA governance variable does not capture. The sample includes no case where a consolidated NMAA operates under active conflict comparable to Ukraine, which limits the

generalizability of the cross-case results. Colombia is the nearest comparator, though it differs in conflict intensity and contamination profile.

The ranking of pillars in the RFI analysis is influenced by the functions included and should not be viewed as a definitive result. While the RFI captures EORE mandate distribution within the Population Protection pillar, it does not measure fragmentation across the broader set of institutions involved in victim assistance (VA), such as health, social protection, and veterans affairs systems. VA service delivery often requires working through four separate institutional systems with little integration. The Coordination Roundtable (2024) documented similar fragmentation symptoms (a lack of a unified database, duplication of aid, and missing referral pathways) that are consistent with the H1 mechanism. As a result, the RFI likely understates fragmentation in Population Protection. Future research should consider developing a measurement instrument specifically for cross-sectoral VA fragmentation, incorporating mandates from health, social protection, and veterans legislation as well as mine-action mandates.

The RFI measures formal mandate dispersion in legal and administrative sources. It does not directly measure informal coordination practices, practical adaptation between institutions, or operational outputs such as land released. Operational change can continue even when statutory mandate distribution remains stable. A finding of stable RFI between 2024 and 2025 indicates that the legislative architecture of mandates plateaued in that period. It does not indicate that sector activity plateaued.

This reflects a positivist measurement convention: the thesis registers institutional change when it is codified in legal and administrative sources. A natural-law or social-naturalist perspective, associated in Ukrainian legal theory with Kostenko (2010), would place greater weight on practical legal development beyond codified form.

The thesis does not measure land-release progress directly. This is a limitation because operational progress can continue even when formal institutional fragmentation creates coordination costs. Land-release data are treated as contextual evidence in Chapter 6 rather than as part of the RFI or QCA measurement design.

8.2 Future Research

The findings point to three main directions for future research. First, applying the RFI methodology to other governance sectors characterized by fragmentation, such as water, food security, or health, would help test the generalizability of the framework. The construction protocol is designed to be sector-agnostic, requiring only that mandates are codified in legislation and that governance functions can be enumerated.

Second, the QCA approach could be expanded to include additional conditions, such as program age or the proportion of national funding, once comparable data are available for all cases. The present sample of 11 cases with 3 conditions yields 5 observed configurations out of 8 possible. Adding a fourth condition would require an expanded sample to populate the larger truth table.

Third, collecting panel data that track changes in NMAA architecture within individual countries over multiple years would allow for a stronger causal design than the current cross-sectional approach. For example, Angola's 2021–2022 CNIDAH-to-ANAM restructuring and Croatia's 2019 CROMAC integration into the Civil Protection Directorate represent natural experiments that could be analyzed longitudinally. Such cases would support stronger causal inference if sufficient pre- and post-reform data are available.

Consolidating mine-action authority across the three ministries that currently hold equipment, missions, and personnel (MoD, MoIA/SESU, and MoEEA) is a policy-analysis problem with several alternative implementation paths. The thesis identifies the architectural endpoint supported by the cross-case evidence. The trajectory through which Ukraine can realistically arrive at that endpoint, given bureaucratic inertia, equipment already on several ministerial balance sheets, and political reluctance to surrender mandates, requires a dedicated research design that this thesis does not provide.

8.3 Implications for Public Governance Practice

The thesis has three practical implications for public governance. First, the within-case analysis indicates that recipient-side institutional fragmentation generates measurable coordination costs through a clear, traceable mechanism in Ukraine's mine-action sector. This finding resonates with the explanatory note for Draft Law 15108-1, which describes the same architectural problems: duplication of functions, decision-making conflicts, inefficient resource use, and the lack of a single institution responsible for the sector. The alignment between the thesis findings and official parliamentary diagnosis lends external corroboration, although it does not, by itself, establish external validity.

Second, H2 is supported in a qualified configurational form. Consolidated NMAA architecture combined with post-conflict stability is sufficient for program effectiveness across the eleven cases, and the absence of NMAA consolidation is necessary for failure. The result does not imply that fragmented systems cannot produce operational progress in absolute terms, nor that consolidation alone guarantees effectiveness in the absence of post-conflict stability. Bill 15108 maintains the current dispersed architecture, while Bill 15108-1 proposes a move toward the consolidated model supported by comparative evidence. While the choice between bills is ultimately political and beyond the scope of this thesis, the structural implications of each approach are clear.

Third, the Recipient Fragmentation Index is a transferable tool for measuring the formal dispersion of mandates in any mine-action governance system. It is feasible to apply comparative RFI scoring to Bosnia, Cambodia, Colombia, or other mine-affected states using only publicly available legal documents, following the protocol developed in Chapter 4. Applying the RFI to Ukraine after the passage of either draft law would provide a real-world test of the thesis's central proposition: that institutional consolidation lowers the fragmentation index and, through the four-step transaction-cost mechanism, reduces coordination costs.

REFERENCES

ACAPS. (2024). *Ukraine: Humanitarian implications of mine contamination* (Thematic report, 24 January 2024). https://www.acaps.org/fileadmin/Data_Product/Main_media/20240124_ACAPS_thematic_report_Ukraine_Analysis_Hub_Humanitarian_implications_of_mine_contamination_.pdf

ACAPS. (2025). *Ukraine: The cross-sectoral role of mine action in humanitarian and recovery efforts* (Thematic report, 12 December 2025). https://www.acaps.org/fileadmin/Data_Product/Main_media/20251212_ACAPS_Ukraine_The_cross-sectoral_role_of_mine_action_in_humanitarian_and_recovery_efforts.pdf

Accounting Chamber of Ukraine. (2025). *Humanitarne rozminuvannia silskohospodarskykh zemel v Ukraini* [Humanitarian demining of agricultural land in Ukraine] (Audit report, Decision No. 21-2, August 26, 2025). Rakhunkova Palata. https://rp.gov.ua/upload-files/Activity/Collegium/2025/21-2_2025/Zvit_21-2_2025.pdf

Acharya, A., de Lima, A. T. F., & Moore, M. (2006). Proliferation and fragmentation: Transaction costs and the value of aid. *Journal of Development Studies, 42*(1), 1-21. https://doi.org/10.1080/00220380500356225

Aldasoro, I., Nunnenkamp, P., & Thiele, R. (2010). Less aid proliferation and more donor coordination? The wide gap between words and deeds. *Journal of International Development, 22*(7), 920-940. https://doi.org/10.1002/jid.1645

Amin, A., & Thrift, N. (1995). Institutional issues for the European regions: From markets and plans to socioeconomics and powers of association. *Economy and Society, 24*(1), 41-66. https://doi.org/10.1080/03085149500000002

Andrews, M., Pritchett, L., & Woolcock, M. (2017). *Building state capability: Evidence, analysis, action*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198747482.001.0001

Anti-Personnel Mine Ban Convention. (n.d.). *Convention text*. https://www.apminebanconvention.org/en/convention-text

Balcik, B., Beamon, B. M., Krejci, C. C., Muramatsu, K. M., & Ramirez, M. (2010). Coordination in humanitarian relief chains: Practices, challenges and opportunities. *International Journal of Production Economics, 126*(1), 22-34. https://doi.org/10.1016/j.ijpe.2009.09.008

Bardach, E. S., & Patashnik, E. M. (2019). *A practical guide for policy analysis: The eightfold path to more effective problem solving* (6th ed.). CQ Press.

Beach, D., & Pedersen, R. B. (2013). *Process-tracing methods: Foundations and guidelines*. University of Michigan Press.

Biermann, F., Pattberg, P., van Asselt, H., & Zelli, F. (2009). The fragmentation of global governance architectures: A framework for analysis. *Global Environmental Politics, 9*(4), 14-40. https://doi.org/10.1162/glep.2009.9.4.14

Bourguignon, F., & Platteau, J.-P. (2015). The hard challenge of aid coordination. *World Development, 69*, 86-97. https://doi.org/10.1016/j.worlddev.2013.12.011

Cabinet of Ministers of Ukraine. (2007). *Reglament Kabinetu Ministriv Ukrainy* [Cabinet of Ministers Regulations] (Resolution No. 950, July 18, 2007, with subsequent amendments). https://zakon.rada.gov.ua/go/950-2007-%D0%BF

Cabinet of Ministers of Ukraine. (2021). *Pro utvorennia Natsionalnoho orhanu z pytan protyminnoi diialnosti* [On the establishment of the National Mine Action Authority] (Resolution No. 1207, November 10, 2021). https://zakon.rada.gov.ua/go/1207-2021-%D0%BF

Cabinet of Ministers of Ukraine. (2022). *Pro zatverdzhennia operatyvnoho planu zakhodiv z protyminnoi diialnosti* [On the approval of the Operational Plan for mine action activities] (Order No. 288-r, April 15, 2022, as amended). https://zakon.rada.gov.ua/go/288-2022-%D1%80

Cabinet of Ministers of Ukraine. (2023a). *Pro utvorennia biudzhetnoi ustanovy "Tsentr humanitarnoho rozminuvannia"* [On the establishment of the budgetary institution "Center for Humanitarian Demining"] (Order No. 303-r, April 7, 2023). https://zakon.rada.gov.ua/go/303-2023-%D1%80

Cabinet of Ministers of Ukraine. (2023b). *Pro peredachu yedynoho mainovoho kompleksu biudzhetnoi ustanovy* [On the transfer of the single property complex of the budgetary institution] (Order No. 358-r, April 21, 2023). https://zakon.rada.gov.ua/go/358-2023-%D1%80

Cabinet of Ministers of Ukraine. (2023c). *On the procedure for the use of funds from the MoEEA account for financing humanitarian demining* (Resolution No. 760, July 18, 2023, as amended). https://zakon.rada.gov.ua/go/760-2023-%D0%BF

Cabinet of Ministers of Ukraine. (2024a). Pro skhvalennia Natsionalnoi stratehii protyminnoi diialnosti na period do 2033 roku ta zatverdzhennia operatsiinoho planu zakhodiv z yii realizatsii u 2024–2026 rokakh [On approval of the National Mine Action Strategy for the period up to 2033 and approval of the operational plan of measures for its implementation in 2024–2026] (Order No. 616-r, June 28, 2024, as amended). https://zakon.rada.gov.ua/go/616-2024-%D1%80

Cabinet of Ministers of Ukraine. (2024b). *Pro realizatsiiu eksperymentalnoho proektu shchodo sertyfikatsii* [On the implementation of the experimental project on certification] (Resolution No. 123, February 2, 2024). https://zakon.rada.gov.ua/go/123-2024-%D0%BF

Cabinet of Ministers of Ukraine. (2024c). *Deiaki pytannia shchodo stvorennia, zabezpechennia funktsionuvannia ta vedennia reiestru terytorii, zabrudnenykh/imovirno zabrudnenykh vybukhonebezpechnymy predmetamy* [Certain issues regarding the establishment, functioning and maintenance of the registry of territories contaminated or potentially

contaminated with explosive objects] (Resolution No. 740, June 7, 2024). https://zakon.rada.gov.ua/go/740-2024-%D0%BF

Cabinet of Ministers of Ukraine. (2024d). *Pro zatverdzhennia Poriadku vykorystannia koshtiv, peredbachenykh u derzhavnomu biudzheti dlia zdiisnennia kompensatsii vytrat za humanitarne rozminuvannia zemel silskohospodarskoho pryznachennia* [On approval of the procedure for use of state-budget funds for compensation of humanitarian demining costs for agricultural land] (Resolution No. 284, March 12, 2024). https://zakon.rada.gov.ua/go/284-2024-%D0%BF

Cabinet of Ministers of Ukraine. (2024e). Pro vnesennia zmin do Poriadku vykorystannia koshtiv, peredbachenykh u derzhavnomu biudzheti dlia kompensatsii vytrat za humanitarne rozminuvannia [On amendments to the Procedure for use of state-budget funds for compensation of humanitarian demining costs] (Resolution No. 580, May 17, 2024). https://zakon.rada.gov.ua/go/580-2024-%D0%BF

Cabinet of Ministers of Ukraine. (2024f). Pro vnesennia zmin do Poriadku vykorystannia koshtiv, peredbachenykh u derzhavnomu biudzheti dlia kompensatsii vytrat za humanitarne rozminuvannia [On amendments to the Procedure for use of state-budget funds for compensation of humanitarian demining costs] (Resolution No. 990, August 30, 2024). https://zakon.rada.gov.ua/go/990-2024-%D0%BF

Cabinet of Ministers of Ukraine. (2024g). Pro vnesennia zmin do Poriadku vykorystannia koshtiv, peredbachenykh u derzhavnomu biudzheti dlia kompensatsii vytrat za humanitarne rozminuvannia [On amendments to the Procedure for use of state-budget funds for compensation of humanitarian demining costs] (Resolution No. 1539, December 31, 2024). https://zakon.rada.gov.ua/go/1539-2024-%D0%BF

Cabinet of Ministers of Ukraine. (2025a). *Deiaki pytannia Ministerstva ekonomiky, dovkillia ta silskoho hospodarstva* [Certain issues of the Ministry of Economy, Environment and Agriculture] (Resolution No. 903, July 21, 2025). https://zakon.rada.gov.ua/go/903-2025-%D0%BF

Cabinet of Ministers of Ukraine. (2025b). *Deiaki pytannia diialnosti Ministerstva oborony* [Certain issues of the activities of the Ministry of Defense] (Resolution No. 905, July 21, 2025). https://zakon.rada.gov.ua/go/905-2025-%D0%BF

Cabinet of Ministers of Ukraine. (2025c). *Pro zatverdzhennia Poriadku obstezhennia zemelnykh dilianok shchodo nayavnosti vybukhonebezpechnykh predmetiv* [On approval of the Procedure for inspection of land plots for explosive ordnance] (Resolution No. 1009, August 20, 2025). https://zakon.rada.gov.ua/go/1009-2025-%D0%BF

Cabinet of Ministers of Ukraine. (2025d). *Pro peredachu u 2025 rotsi koshtiv z rakhunka dlia finansuvannia zakhodiv humanitarnoho rozminuvannia* [On transfer of funds in 2025 from the account for humanitarian demining financing] (Order No. 1070-r, October 1, 2025). https://zakon.rada.gov.ua/go/1070-2025-%D1%80

Cabinet of Ministers of Ukraine. (2025e). *Pro vnesennia zmin do Poriadku vykorystannia koshtiv* [On amendments to the Procedure for use of funds] (Resolution No. 1301, October 10, 2025). https://zakon.rada.gov.ua/go/1301-2025-%D0%BF

Cabinet of Ministers of Ukraine. (2025f). *Pro peredachu koshtiv z rakhunka dlia finansuvannia zakhodiv humanitarnoho rozminuvannia* [On transfer of funds for humanitarian demining] (Order No. 1469-r, December 19, 2025). https://zakon.rada.gov.ua/go/1469-2025-%D1%80

Cabinet of Ministers of Ukraine. (2025g). *Pro vnesennia zmin do operatsiinoho planu zakhodiv z realizatsii Natsionalnoi stratehii protyminnoi diialnosti na period do 2033 roku* [On amendments to the operational plan of measures for implementation of the National Mine Action Strategy to 2033] (Resolution No. 1653, December 10, 2025). https://zakon.rada.gov.ua/go/1653-2025-%D0%BF

Cabinet of Ministers of Ukraine. (2025h). *Pro vnesennia zminy do punktu 11 Poriadku vykorystannia koshtiv* [On amendment to point 11 of the Procedure for use of funds] (Resolution No. 1696, December 23, 2025). https://zakon.rada.gov.ua/go/1696-2025-%D0%BF

Cabinet of Ministers of Ukraine. (2025i). *Pro vnesennia zmin do operatsiinoho planu zakhodiv* [On amendments to the operational plan of measures] (Resolution No. 1796, December 31, 2025). https://zakon.rada.gov.ua/go/1796-2025-%D0%BF

Cabinet of Ministers of Ukraine. (2025j). *Bezkaravainyi: Zavdiaky GRIT my perekhodymo do tsyfrovoho planuvannia u rozminuvanni* [Thanks to GRIT, we switch to digital planning in demining] [Press release]. https://www.kmu.gov.ua/en/news/ihor-bezkaravainyi-zavdiaky-grit-my-perekhodymo-do-tsyfrovoho-planuvannia-u-rozminuvanni

Cabinet of Ministers of Ukraine. (2025k). Pro vnesennia zmin do Poriadku vykorystannia koshtiv, peredbachenykh u derzhavnomu biudzheti dlia kompensatsii vytrat za humanitarne rozminuvannia [On amendments to the Procedure for use of state-budget funds for compensation of humanitarian demining costs] (Resolution No. 488, April 29, 2025). https://zakon.rada.gov.ua/go/488-2025-%D0%BF

Cabinet of Ministers of Ukraine. (2026a). *Pro vnesennia zmin do Poriadku vykorystannia koshtiv, peredbachenykh u derzhavnomu biudzheti dlia kompensatsii vytrat na humanitarne rozminuvannia silskohospodarskykh zemel* [On amendments to the Procedure for use of state-budget funds for compensation of agricultural-land humanitarian demining costs] (Resolution No. 366, March 25, 2026). https://zakon.rada.gov.ua/go/366-2026-%D0%BF

Cabinet of Ministers of Ukraine. (2026b). *Pro vnesennia zminy do Poriadku obstezhennia zemelnykh dilianok* [On amendment to the Procedure for inspection of land plots] (Resolution No. 187, February 11, 2026). https://zakon.rada.gov.ua/go/187-2026-%D0%BF

Cabinet of Ministers of Ukraine. (2026c). *Pro vnesennia zmin do operatsiinoho planu zakhodiv z realizatsii u 2024-2026 rokakh Natsionalnoi stratehii protyminnoi diialnosti na period do 2033 roku* [On amendments to the operational plan of measures for implementation in 2024-2026 of the National Mine Action Strategy to 2033] (Order No. 191-r, February 25, 2026). https://zakon.rada.gov.ua/go/191-2026-%D1%80

Cabinet of Ministers of Ukraine. (2026d). *Proiekt Zakonu pro vnesennia zmin do deiakykh zakonodavchykh aktiv Ukrainy shchodo udoskonalennia humanitarnoho rozminuvannia* [Draft Law on amendments to certain legislative acts of Ukraine regarding the improvement of humanitarian demining] (Registration No. 15108, March 30, 2026). Verkhovna Rada of Ukraine. https://itd.rada.gov.ua/billinfo/Bills/Card/69772

Carpenter, D. P. (2001). *The forging of bureaucratic autonomy: Reputations, networks, and policy innovation in executive agencies, 1862-1928*. Princeton University Press.

Center for Humanitarian Demining. (2025). *GRIT: The national digital platform for humanitarian demining*. https://demine.gov.ua/en/news/grit-the-national-digital-platform-for-humanitarian-demining

Chiovelli, G., Michalopoulos, S., & Papaioannou, E. (2025). Landmines and spatial development. *Econometrica, 93*(5), 1739-1778. https://doi.org/10.3982/ECTA17951

Coordination Roundtable. (2024). 4th Coordination Roundtable on Assistance to Victims of Explosive Ordnance in Ukraine: Minutes (March 20, 2024). Danish Refugee Council.

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.

Davies, S., Engström, G., Pettersson, T., & Öberg, M. (2024). Organized violence 1989-2023, and the prevalence of organized crime groups. *Journal of Peace Research, 61*(4), 673-693. https://doi.org/10.1177/00223433241262912

Deputies of the Verkhovna Rada of Ukraine. (2026). *Proiekt Zakonu pro vnesennia zmin do deiakykh zakonodavchykh aktiv Ukrainy shchodo osoblyvostei protyminnoi diialnosti ta udoskonalennia humanitarnoho rozminuvannia* [Draft Law on amendments to certain legislative acts of Ukraine concerning the specifics of mine action and the improvement of humanitarian demining] (Registration No. 15108-1, April 15, 2026). Verkhovna Rada of Ukraine. https://itd.rada.gov.ua/billinfo/Bills/Card/69888

Dietrich, S. (2013). Bypass or engage? Explaining donor delivery tactics in foreign aid allocation. *International Studies Quarterly, 57*(4), 698-712. https://doi.org/10.1111/isqu.12041

Duşa, A. (2019). *QCA with R: A comprehensive resource*. Springer. https://doi.org/10.1007/978-3-319-75668-4

Gehring, K., Michaelowa, K., Dreher, A., & Spoerri, F. (2017). Aid fragmentation and effectiveness: What do we really know? *World Development, 99*, 320-334. https://doi.org/10.1016/j.worlddev.2017.05.019

GICHD & EY. (2026). *Capacity gap assessment of certified demining operators in Ukraine* (Final Report, January 23, 2026). Geneva International Centre for Humanitarian Demining.

Hogwood, B. W., & Gunn, L. A. (1984). *Policy analysis for the real world*. Oxford University Press.

International Campaign to Ban Landmines. (2024). *Landmine Monitor 2024*. ICBL-CMC. https://the-monitor.org/

International Campaign to Ban Landmines. (2025). *Landmine Monitor 2025*. ICBL-CMC. https://the-monitor.org/

International Mine Action Standards. (2025). *IMAS 01.10: Guide for the application and development of International Mine Action Standards (IMAS)* (Edition 2, Amendment 12). https://www.mineactionstandards.org/standards/01-10/

Johnson, R., Beach, D., & Al-Janabi, H. (2025). How is process tracing applied in health research? A systematic scoping review. *Social Science and Medicine, 366*, Article 117539. https://doi.org/10.1016/j.socscimed.2024.117539

Kalmenovitz, J., Lowry, M., & Volkova, E. (2025). Regulatory fragmentation. *Journal of Finance, 80*(2), 1081-1126. https://doi.org/10.1111/jofi.13423

Kaufmann, D., & Kraay, A. (2025). *Worldwide Governance Indicators* [Dataset]. World Bank. https://www.worldbank.org/en/publication/worldwide-governance-indicators

Knack, S., & Rahman, A. (2007). Donor fragmentation and bureaucratic quality in aid recipients. *Journal of Development Economics, 83*(1), 176-197. https://doi.org/10.1016/j.jdeveco.2006.02.002

Kostenko, O. M. (2010). Shcho ye pravo? Pro osnovy “naturalistychnoi” yurysprudentsii u svitli sotsialnoho naturalizmu [What is law? On the foundations of “naturalistic” jurisprudence in the light of social naturalism]. Pravo Ukrainy, (4), 83–92. https://pravoua.com.ua/storage/files/magazines/files/content-pravoukr-2010-4-pravoukr_2010_4-1.pdf

Lieberman, E. S. (2005). Nested analysis as a mixed-method strategy for comparative research. *American Political Science Review, 99*(3), 435-452. https://doi.org/10.1017/S0003055405051762

Mahoney, J., & Thelen, K. (2010). A theory of gradual institutional change. In J. Mahoney & K. Thelen (Eds.), *Explaining institutional change: Ambiguity, agency, and power* (pp. 1-37). Cambridge University Press. https://doi.org/10.1017/CBO9780511806414.003

Mine Action Review. (2015). Clearing the Mines 2015. Norwegian People’s Aid. https://www.mineactionreview.org/

Mine Action Review. (2024). *Clearing the Mines 2024*. Norwegian People's Aid. https://www.mineactionreview.org/

Mine Action Review. (2025a). *Clearing the Mines 2025*. Norwegian People's Aid. https://www.mineactionreview.org/

Mine Action Review. (2025b). *Clearing Cluster Munition Remnants 2025*. Norwegian People's Aid. https://www.mineactionreview.org/

Ministry of Defense of Ukraine, Ministry of Internal Affairs of Ukraine, & Ministry of Reintegration. (2023). *Pro zatverdzhennia Poriadku zdiisnennia koordynatsii diialnosti* [On the approval of the Procedure for coordination of activities] (Joint Order No. 9/3/5, January 9, 2023). https://zakon.rada.gov.ua/go/z0148-23

Ministry of Economy, Environment and Agriculture of Ukraine. (2026a). Internal mine-action commitments registry, 2018-2030 [Unpublished administrative dataset]. Accessed January 2026.

Ministry of Economy, Environment and Agriculture of Ukraine. (2026b). Statistics on certified humanitarian demining operators [Administrative data]. Internal registry, accessed January 2026.

Ministry of Internal Affairs of Ukraine. (2023). *Pro vnesennia zmin do nakazu Ministerstva vnutrishnikh sprav* [On amendments to MIA Order No. 631] (Order No. 1073, December 27, 2023). https://zakon.rada.gov.ua/go/z0108-24

National Mine Action Authority. (2025). Plan for implementation of humanitarian mine action activities on the de-occupied territories of Ukraine for 2026 [English translation]. Approved at the meeting of the National Mine Action Authority on December 30, 2025. https://ua-nmac.org/downloads/planning/plan-2026-en.pdf

North, D. C. (1990). *Institutions, institutional change, and economic performance*. Cambridge University Press. https://doi.org/10.1017/CBO9780511808678

Pal, L. A. (2014). *Beyond policy analysis: Public issue management in turbulent times* (5th ed.). Nelson Education.

Palantir Technologies. (2024, March 4). *Palantir and Ministry of Economy of Ukraine sign demining partnership* [Press release]. Business Wire. https://www.businesswire.com/news/home/20240304069003/en/

Permanent Mission of Ukraine to the United Nations. (2025, October 23). *Statement by the Delegation of Ukraine under agenda item 46 "Assistance in mine action" of the Fourth Committee of the UN General Assembly*. https://un.mfa.gov.ua/en/news/statement-delegation-ukraine-under-agenda-item-46-assistance-mine-action-fourth-committee-un-general-assembly-23-october-2025

Prem, M., Purroy, M. E., & Vargas, J. F. (2025). Landmines: The local effects of demining. *Journal of Public Economics, 247*, Article 105399. https://doi.org/10.1016/j.jpubeco.2025.105399

R Core Team. (2024). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.R-project.org/

Radio Svoboda. (2026, January 19). *Politsiia rozsliduie ymovirni zlovzhyvannia koshtamy, vydilenymy na humanitarne rozminuvannia* [Police investigate alleged misappropriation

of funds allocated for humanitarian demining]. https://www.radiosvoboda.org/a/news-politsia-rozsliduvannia-koshty-humanitarne-rozminuvannia/33653717.html

Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. University of Chicago Press. https://doi.org/10.7208/chicago/9780226702797.001.0001

Republic of Mozambique. (2015). *Declaration of completion of Article 5 obligations under the Anti-Personnel Mine Ban Convention*. Fourteenth Meeting of States Parties, Geneva, November 30-December 4, 2015.

Risse, T. (Ed.). (2011). *Governance without a state? Policies and politics in areas of limited statehood*. Columbia University Press.

Scheel, A. M., Tiokhin, L., Isager, P. M., & Lakens, D. (2021). Why hypothesis testers should spend less time testing hypotheses. *Perspectives on Psychological Science, 16*(4), 744-755. https://doi.org/10.1177/1745691620966795

Schneider, C. Q., & Wagemann, C. (2012). *Set-theoretic methods for the social sciences: A guide to qualitative comparative analysis*. Cambridge University Press. https://doi.org/10.1017/CBO9781139004244

Sectoral Working Group on Humanitarian Demining. (2023). *Minutes of the 2nd meeting* (December 7, 2023). Ministry of Economy of Ukraine.

Sectoral Working Group on Humanitarian Demining. (2024a). *Minutes of the 3rd meeting* (May 8, 2024). Ministry of Economy of Ukraine.

Sectoral Working Group on Humanitarian Demining. (2024b). *Minutes of the meeting* (September 30, 2024). Ministry of Economy of Ukraine.

Sectoral Working Group on Humanitarian Demining. (2024c). *Minutes of the meeting* (December 9, 2024). Ministry of Economy of Ukraine.

Sectoral Working Group on Humanitarian Demining. (2025a). *Minutes of the meeting* (July 4, 2025). Ministry of Economy of Ukraine.

Sectoral Working Group on Humanitarian Demining. (2025b). *Minutes of the meeting* (September 18, 2025). Ministry of Economy of Ukraine.

Sectoral Working Group on Humanitarian Demining. (2025c). *Minutes of the 8th meeting* (December 11, 2025). Ministry of Economy of Ukraine.

Shulzhenko, D. (2025, July 2). *Ukraine is the biggest landmine challenge since World War II, says head of the world's largest demining organization*. Kyiv Independent. https://kyivindependent.com/ukraine-is-biggest-landmine-challenge-since-world-war-ii-says-head-of-worlds-largest-demining-organization/

Tony Blair Institute for Global Change. (2025). *White paper on updating the institutional architecture of mine action in Ukraine* [Policy paper presented to the First Deputy Prime Minister of Ukraine. Discussed at the Sectoral Working Group, July 2025].

UkrNDNTs. (2023). *DSTU 8820-1:2023. Humanitarian demining. Part 1. Conformity assessment of work performance: General requirements* [State standard, effective 1 March 2024]. Ukrainian Research and Training Center for Standardization, Certification

and Quality (UkrNDNTs). https://demine.gov.ua/static-objects/demine/uploads/public/679/37d/5d9/67937d5d9467c650436089.pdf

Verkhovna Rada of Ukraine. (2018). *Pro protypminnu diialnist v Ukraini* [On mine action in Ukraine] (Law No. 2642-VIII, December 6, 2018, as amended). https://zakon.rada.gov.ua/go/2642-19

Verkhovna Rada of Ukraine. (2024). *Pro vnesennia zmin do deiakykh zakonodavchykh aktiv Ukrainy* [On amendments to certain legislative acts] (Law No. 3563-IX, February 6, 2024). https://zakon.rada.gov.ua/go/3563-20

Verkhovna Rada of Ukraine. (2025). *Pro vnesennia zmin do deiakykh zakoniv Ukrainy shchodo diialnosti Derzhavnoi spetsialnoi sluzhby transportu* [On amendments regarding the State Special Transport Service] (Law No. 4631-IX, October 9, 2025). https://zakon.rada.gov.ua/go/4631-20

Victim Assistance Working Group. (2025a). *Meeting minutes* (January 30, 2025). Danish Refugee Council.

Victim Assistance Working Group. (2025b). *Meeting notes* (June 5, 2025). Danish Refugee Council.

Victim Assistance Working Group. (2025c). *Meeting notes* (July 9, 2025). Danish Refugee Council.

Victim Assistance Working Group. (2025d). *Meeting minutes* (August 28, 2025). Danish Refugee Council.

Wee, S. (2025). Policy integration for overcoming fragmented government action in South Africa: The case of the national policy on food and nutrition security. *Politics and Policy*. https://doi.org/10.1111/polp.70018

Whitfield, L., & Fraser, A. (2010). Negotiating aid: The structural conditions shaping the negotiating strategies of African governments. *International Negotiation, 15*(3), 341-366. https://doi.org/10.1163/157180610X529582

Williamson, O. E. (1985). *The economic institutions of capitalism: Firms, markets, relational contracting*. Free Press. https://www.jstor.org/stable/2555390

World Bank, Government of Ukraine, European Union, & United Nations. (2026). *Ukraine: Fifth Rapid Damage and Needs Assessment (RDNA5), February 2022-December 2025*. World Bank Group. https://www.worldbank.org/en/news/press-release/2026/02/23/updated-ukraine-recovery-and-reconstruction-needs-assessment-released

World Bank. (2022). *Water supply and sanitation policies, institutions, and regulation: Adapting to a changing world* (Synthesis Report, August 2022). World Bank Water Global Practice. https://documents1.worldbank.org/curated/en/099015208242275252/pdf/P165586002283004a086e105a00d8430696.pdf

Disclosure of AI Assistance

AI-based tools (Grammarly and Claude) were used during preparation of this thesis for language editing, structuring of draft material, consistency checks, organization of references, clarification of methodological explanations, and trimming or streamlining R code used to reproduce the RFI and fsQCA tables. All ideas, arguments, empirical interpretations, and substantive content originate either in the author's own analysis or in the cited sources, as indicated by the citations. The research question, theoretical framing, source selection, design and coding of the Recipient Fragmentation Index, process-tracing argument and rival-explanation testing, fsQCA calibration and interpretation, case selection, policy analysis, and conclusions were developed by the author. AI tools were not used as sources of empirical evidence or as independent generators of findings. All factual claims rest on cited documents, datasets, or the author's analysis of those sources.

APPENDIX A. DOCUMENTARY SOURCE TABLES

Table A1. Sources Used in H1 Analysis (Within-Case Ukraine)

This appendix lists all sources employed for RFI coding and process-tracing evidence extraction. Sources referenced in the main narrative are included in the principal reference list, while those used exclusively for coding are documented here to provide a transparent account of the evidentiary basis.

Source	Type	Used For	Period
CMU Resolution No. 1207 (2021)	Legislation	RFI coding: NMAA establishment, baseline mandates	2022
CMU Order No. 303-r (2023)	Legislation	RFI coding: CHD creation, 2023 breakpoint	2023
CMU Order No. 358-r (2023)	Legislation	RFI coding: CHD transfer to CMU Secretariat	2023
CMU Resolution No. 760 (2023)	Legislation	RFI coding: MoEEA financing account	2023
Joint Order No. 9/3/5 (2023)	Legislation	RFI coding: coordination procedures, advisory body	2023
MIA Order No. 1073 (2023)	Legislation	RFI coding: SESU Interregional Center	2023
CMU Resolution No. 123 (2024)	Legislation	RFI coding: Diia certification experiment	2024
National Mine Action Strategy and Operational Plan 2024–2026 (CMU Order No. 616-r)	Policy	RFI coding, pillar definitions, Strategy diagnosis, Operational Plan framework	2024–2026
Law No. 3563-IX (2024)	Legislation	RFI coding: dual information systems (IMSMA + Reg.)	2024
CMU Resolution No. 903 (2025)	Legislation	RFI coding: MoEEA functions	2025
CMU Resolution No. 905 (2025)	Legislation	RFI coding: MoD functions	2025
Law No. 4631-IX (2025)	Legislation	RFI coding: SSTS restructure	2025
2026 Plan for de-occupied territories (National Mine Action Authority, 2025)	Policy	Backward-trace 2, planned clearance and EQC indicators, 2026 coordination chain	2026
SWG minutes, Dec 2023	Coordination	Unified certification aim, SWG establishment	2023
SWG minutes, May 2024	Coordination	Backward-trace 1: first compensation contract	2024
SWG minutes, Sep 2024	Coordination	Coordination quality evidence: 2024	2024

SWG minutes, Dec 2024	Coordination	Backward-trace 2: QM team capacity reference	2024
SWG minutes, Jul 2025	Coordination	TBI presentation, five identified challenges	2025
SWG minutes, Sep 2025	Coordination	Government reform principles announced	2025
SWG minutes, Dec 2025	Coordination	Coordination quality evidence: 2025	2025
VA WG minutes, Jan 2025	Coordination	Action Plan, 16 tasks and 54 actions	2025
VA WG minutes, Jun 2025	Coordination	Advocacy note, rehabilitation access	2025
VA WG minutes, Jul 2025	Coordination	Kharkiv system without national coordination	2025
VA WG minutes, Aug 2025	Coordination	ETF joint appeal, 30 organizations	2025
Coordination Roundtable, Mar 2024	Coordination	SWOT analysis: duplication of aid identified	2024
Accounting Chamber of Ukraine (2025)	Audit	Backward-traces 1 and 2 (quantified findings)	2025
Tony Blair Institute for Global Change (2025)	Assessment	TBI institutional analysis, White Paper diagnosis	2025
GICHD and EY (2026)	Assessment	Operator capacity assessment, monitoring gaps	2026
Mine Action Review (2025a)	Assessment	§5.1 layering: IMSMA, dual tasking, QC chain	2025
Mine Action Law (2018, as amended)	Legislation	RFI coding: Articles 25 and 25-1	All

Note: Author's compilation of documentary sources used for RFI coding, process tracing, and QCA calibration.

Table A2. Sources Used in H2 Analysis (Cross-Case QCA)

Sources for coding the 11 QCA cases are detailed below. Each case draws primarily from the referenced MAR country chapter, with cross-checks against WGI data and Landmine Monitor country profiles.

Case	**Primary MAR Source**	**MAR Page**	**Outcome Score**	**WGI Source Year**	**Additional Sources**
Croatia	Clearing the Mines 2025	p. 146	6.8	2024	Landmine Monitor 2024
Cambodia	Clearing the Mines 2025	p. 85	7.2	2024	Landmine Monitor 2024
Bosnia-Herzegovina	Clearing the Mines 2025	p. 58	4.6	2024	Landmine Monitor 2024

Serbia	Clearing the Mines 2025	p. 311	5.4	2024	Landmine Monitor 2024
Iraq	Clearing the Mines 2025	p. 229	5.3	2024	Landmine Monitor 2024, 2025
Lao PDR	Mine Action Review, 2025b (Clearing CMR 2025)	p. 60	7.3	2024	Landmine Monitor 2024
Angola	Clearing the Mines 2025	p. 44	7.1	2024	Landmine Monitor 2024
Vietnam	Mine Action Review, 2025b (Clearing CMR 2025)	p. 252	6.0 (est.)	2024	Landmine Monitor 2024
Afghanistan	Clearing the Mines 2025	p. 26	5.9	2024	Landmine Monitor 2024
Colombia	Clearing the Mines 2025	p. 121	6.9	2024	Landmine Monitor 2024
Mozambique	Clearing the Mines 2015	p. 234	7.5 (est.)	2013	APMBC 2015 declaration

Note: The outcome for Vietnam is estimated based on the CMR narrative, as there is no dedicated "Clearing the Mines" chapter. Mozambique's outcome is inferred from its declared completion status as of September 2015. All WGI data follow Kaufmann and Kraay (2025), referencing the 2024 dataset year except for Mozambique (2013).

Note: Author's compilation of documentary sources used for RFI coding, process tracing, and QCA calibration.

Appendix B. RFI Coding Protocol and Institution Details

B.1 Institution-Function Matrix Construction

The RFI was developed using a matrix that cross-tabulates functions, institutions, pillars, and years. Only primary legal sources, including legislation, Cabinet of Ministers resolutions and orders, ministerial orders, the National Mine Action Strategy and Operational Plan 2024–2026 were used to populate the matrix. Secondary materials such as audit reports and donor assessments served exclusively for verification, not for mandate attribution.

B.2 The Eight Coded Institutions

The matrix covers eight institutions with formally assigned mine-action functions for the period 2022–2025:

1. The Mine Action Center under the Ministry of Defense, also referred to as the National Mine Action Center (MAC, also NMAC). The operational coordinating body established under the Law on Mine Action.

2. The Center for Humanitarian Demining under the Cabinet of Ministers Secretariat (CHD). Established 7 April 2023 under CMU Order No. 303-r with functions paralleling NMAC under Article 25-1 of the amended Law.

3. The Secretariat of the National Mine Action Authority within the Ministry of Defense (NMAA Secretariat). The support body for the inter-ministerial NMAA collegial body.

4. The Ministry of Economy, Environment and Agriculture (MoEEA). Assigned compensation-procedure financing functions under Resolution 284 (Cabinet of Ministers of Ukraine, 2024d) and broader land-related functions under Resolutions 903 and 905 (2025).

5. The State Emergency Service of Ukraine (SESU) under the Ministry of Internal Affairs. Operates the Interregional Center for Demining (MIA Order No. 1073, 2023).

6. The National Police of Ukraine (NPU) under the Ministry of Internal Affairs. Responsible for EOD response within civilian areas.

7. The Special State Transport Service (SSTS) under the Ministry of Defense. Responsible for explosive ordnance disposal on transport infrastructure.

8. The Demining Center of Military Unit A2641 of the Armed Forces of Ukraine (AFU support forces). Named in the National Mine Action Strategy as one of three quality-management bodies.

B.3 Mandate Coding Rules

Mandate coding employs a three-level system. Code 2 denotes a leading mandate: the institution is identified in a primary legal source as the principal actor for the given function and pillar. Code 1 denotes a shared or supporting mandate: the institution is named alongside others, or in a supporting, consultative, partial, or jointly assigned role. Code 0 denotes no mandate. Assignment of codes 1 or 2 requires explicit mention in a primary legal document. Mandates referenced solely in audit reports or third-party assessments are excluded. The term "primary source" in this appendix refers to documentary attribution, not to the mandate weight. The distinction between leading and shared mandates is documented in §3.1.2 and §4.4.1.

B.4 Pillar Definitions

The index is disaggregated by four mine-action pillars:

- **Land Release** (operational survey and clearance of contaminated areas).

- **Explosive Ordnance Disposal (EOD) and Survey** (response to discovered ordnance and non-technical survey).

- **Population Protection** (explosive ordnance risk education and victim assistance entry points).

- **Institutional Development** (governance, standards, certification, information management).

B.5 Pillar-Year Source Listing

Appendix Table A1 presents the comprehensive mapping of legal acts to specific pillar-year matrix entries.

Appendix C. QCA Calibration and Case Coding

C.1 Calibration Anchors

Logistic fuzzy-set calibration is conducted according to Ragin (2008), employing the QCA package's calibrate() function (Duşa, 2019). For each variable, three raw-score anchors are used to define the fully-out (0.05), crossover (0.50), and fully-in (0.95) thresholds. The logistic function generates continuous membership scores between 0 and 1.

- **NMAA consolidation:** Anchors of 3, 6, and 9 on a 0-to-10 governance scale. Scores below 5 indicate no functional NMAA. Scores between 5 and 7 indicate partial consolidation. Scores above 7 indicate a consolidated authority across the four core functions of policy formulation, operational coordination, quality assurance, and information management.

- **Post-conflict status:** Anchors of 3, 6, and 9 on a conflict intensity scale derived from UCDP conflict data.

- State capacity (WGI Government Effectiveness): Anchors of -1.40, -0.50, and 0.40 on the WGI point-estimate scale, calibrated relative to the mine-affected state median, with a symmetric span of 0.90 on each side of the crossover (Kaufmann & Kraay, 2025). All WGI values use the 2025-revised series with the 2024 dataset year, which is the methodology vintage applied throughout.

- **Program effectiveness:** Anchors of 3.5, 5.5, and 7.5 on the Mine Action Review 0-to-10 performance scale.

C.2 Case-by-Case Coding Notes

Eleven mine-affected states were coded using Mine Action Review annual assessments, Landmine Monitor country profiles, and APMBC Article 7 reports. For nine cases, outcome scores are verified directly from Mine Action Review performance tables, with precise page references provided in Appendix Table A2. Vietnam and Mozambique have estimated outcome scores, with the basis for these estimates detailed in §5.3.1 and supported by convergent validity checks in §5.3.5.

C.3 WGI Dimension Selection

Selecting a single WGI dimension, rather than employing all six as conditions, reflects the ratio of cases to conditions. With 11 cases and 3 conditions, the truth table yields 8 possible configurations and maintains sufficient degrees of freedom. Expanding to 4 conditions produces 16 configurations, introducing many logical remainders and weakening inferential power. Government Effectiveness was chosen as the most direct indicator of state capacity relevant to mine-action governance. Robustness checks substituting Regulatory Quality (rho = 0.927 with Government Effectiveness) yield equivalent results. The remaining WGI dimensions and contextual variables (CPI, contamination scale, per-capita denominators) are included in case profiles for context but are excluded from QCA models due to collinearity and case-to-condition constraints.

C.4 Robustness Variables Not Used as Primary Conditions

Two variables are examined in robustness models but excluded as primary QCA conditions. Program age confounds institutional learning with contamination depletion, since older programs may appear more effective due to either accumulated experience or the prior

clearance of less challenging contamination. National funding share is problematic because of inconsistent comparability across cases with different currencies and accounting standards. Inclusion of either variable does not alter the substantive results.

C.5 Robustness specifications

Table 5.6 reports the consistency and coverage of NMAA * POST → OUT under eleven specifications. The composition of each non-trivial specification is recorded here for transparency.

Core verified cases (N=7). The seven cases retained are Croatia, Cambodia, Bosnia-Herzegovina, Serbia, Iraq, Lao PDR, and Angola. These are the cases with Mine Action Review outcome scores verified directly from the 2025 edition, excluding the two cases with estimated outcomes (Vietnam and Mozambique) and the two cases at the 0.500 fuzzy-set crossover on POST (Afghanistan and Colombia).

Regulatory Quality substitution. WGI Regulatory Quality replaces WGI Government Effectiveness in the calibration of CAP_GE. Because the two dimensions correlate at rho = 0.927 in this sample, the calibrated fuzzy values are near-identical and the path NMAA * POST → OUT is unchanged.

NMAA crossover sensitivity. The crossover anchor for NMAA shifts to 5.0, 5.5, and 7.0 in turn, while the exclusion and inclusion anchors are held at 3 and 9.

Outcome crossover sensitivity. The crossover anchor for the outcome shifts to 5.0 and 6.0, while the exclusion and inclusion anchors are held at 3.5 and 7.5.

Afghanistan dual coding. Afghanistan is recoded twice to test sensitivity to the choice of historical period. The pre-2021 coding (NMAA = 7, POST = 4) reflects the Islamic Republic period, in which the Directorate of Mine Action Coordination operated as a relatively consolidated authority under the Ministry of Defense while civil conflict remained active. The post-2021 coding (NMAA = 3, POST = 7) reflects the collapse of national mine-action coordination under the Islamic Emirate together with the end of large-scale combat as recorded by UCDP. The pipeline's base coding (NMAA = 6, POST = 6) sits at the crossover on both conditions, which is the value used in Table 5.3 and §5.3.

C.6 QCA Data Sources

The primary data backbone consists of Mine Action Review “Clearing the Mines” annual reports (2024, 2025a). Secondary sources comprise Landmine Monitor country profiles (International Campaign to Ban Landmines, 2024) for funding, casualties, and policy information, APMBC Article 7 reports for official contamination estimates and targets, GICHD publications for operational efficiency and capacity assessments, and World Bank WGI data for measuring state capacity.

Replication materials. The R scripts, input files, and generated outputs used for the RFI and QCA analyses are archived in the project replication folder: https://drive.google.com/drive/folders/1WFz58HeXGR02gXYdtZel2E313MQwnzOF?usp=sha

ring. The folder includes the raw coding files, R scripts, and output tables used to reproduce Tables 5.1 and 5.3-5.7.

Appendix D. Detailed Assessment of Bills 15108 and 15108-1

D.1 Bill 15108 (Cabinet of Ministers, 30 March 2026)

Bill 15108, registered by the Cabinet of Ministers on 30 March 2026 (Cabinet of Ministers of Ukraine, 2026d), proposes limited amendments to the existing Law on Mine Action.

Article 23 transfers NMAA chairmanship, following the cessation of martial law, to the head of the ministry responsible for civil protection (the Ministry of Internal Affairs, via SESU). This change addresses only one of the four key functions outlined in §7.3 (governance coordination). The operational, certification, and quality-assurance functions remain unchanged.

Article 25 expands NMAC's responsibilities to include participation in the humanitarian demining plan and additional Registry-related tasks. Land cadastre and Registry provisions are harmonized across relevant statutes. However, the parallel-mandate structure of Articles 25 and 25-1 is retained, perpetuating the institutional configuration responsible for the 22.5 percent RFI step-change observed in 2023.

D.2 Bill 15108-1 (Deputies of the Verkhovna Rada, 15 April 2026)

Bill 15108-1, registered by deputies of the Verkhovna Rada on 15 April 2026 as an alternative proposal (Deputies of the Verkhovna Rada of Ukraine, 2026), restructures the Law on Mine Action around a three-tier model.

At the highest level, the NMAA is retained as an inter-ministerial collegial body, but its role is limited to strategic coordination. The National Agency for Mine Action (NAMA), established by Article 12, is introduced as a central executive authority with special status. It is independent from both the Ministry of Defense and the Ministry of Internal Affairs and is directly accountable to the Cabinet of Ministers and the Verkhovna Rada. The CHD is transformed into a legal entity of public law under NAMA, serving as a central point of contact for operators and donors. Functions currently assigned to NMAC are redistributed to NAMA (policy, standards, quality assurance) or to CHD (operational planning, monitoring, certification).

Article 12 designates the new institution as the National Agency for Mine Action, whereas the explanatory note refers to it as the National Agency for Humanitarian Demining. In the event of enactment, the statutory text would take precedence.

D.3 Criterion-by-Criterion Comparison

Both bills are assessed using the five criteria specified in §7.2 (effectiveness, political feasibility, administrative suitability, efficient use of public funds, and IMAS/Ottawa coherence). Table 7.1 in the main body provides a comparative summary.

The principal distinction between the bills lies in their institutional design. Bill 15108 maintains the institutional configurations that cross-case QCA evidence (§5.3.3) associates with suboptimal outcomes (e.g., Bosnia-Herzegovina, Serbia, Iraq). In contrast, Bill 15108-1 adopts a structure aligned with those of successful programs (e.g., Cambodia, Angola, Lao PDR, Mozambique). Evidence from the H1 mechanism (§5.2) indicates that preserving the NMAC-CHD parallel structure sustains bargaining costs, information asymmetries, and process bottlenecks that contributed to the implementation bottleneck in the compensation program.

Political feasibility, however, points in the opposite direction. Bill 15108, as a Cabinet-sponsored initiative, aligns with the government's stated reform agenda and is therefore more likely to pass. Bill 15108-1, by contrast, reallocates mandates in ways that challenge incumbent interests, necessitates extensive transitional legislation, and must compete for scarce legislative attention amid wartime constraints. Whether the ultimately enacted legislation aligns with the empirically supported direction is a political determination beyond the scope of this thesis, though the structural implications of each bill are identifiable.