Learning from Regulatory Sandboxes

A Common Reporting Framework and Joint Thematic Calls for European Innovation Facilitators

FIRSA Policy Brief No. 2026/01

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September 2026

Understanding FinTech Regulatory Sandbox Development in Europe (FIRSA)

Website: https://firsa.eu

Funded by the European Union

VU TSPMI

FIRSA Policy Briefs

This series publishes policy briefs and early research results connected to the EU Horizon Marie Skłodowska-Curie Actions ERA Fellowship *FIRSA*. For any comments, please contact:

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Disclaimer

FIRSA is funded by the European Union under grant agreement No. 101180601 titled: *Understanding FinTech Regulatory Sandbox Development in Europe*. Views expressed are those of the author(s) and do not necessarily reflect those of Vilnius University or the European Union.

Executive Summary

Regulatory sandboxes have expanded across Europe, making the capacity to learn from them increasingly important. In a Commission survey published in 2026, Member States reported 132 ongoing and completed regulatory sandboxes across sectors, compared with 40 recorded in 2021; standardised reporting templates were reported in only four countries (European Commission 2026). The Artificial Intelligence Act extends the use of this instrument to AI (European Union 2024). Experience in FinTech offers lessons for this wider expansion. Findings often remain in narrative reports that are difficult to compare or reuse, while research on energy-sector regulatory sandboxes finds that the path from results to regulatory change is rarely formalised (Interview 08 2026; Gangale et al. 2026). Drawing on eleven anonymised primary sources, comprising interviews with officials of financial supervisory authorities and an EU-level authority, expert engagements, and written institutional responses, alongside official and academic sources, this brief makes two recommendations.

EFIF and the ESAs should introduce a short common reporting framework for European innovation facilitators. A shared core would cover mandate, resources, demand and selection, safeguards, documented learning, and negative results; separate modules would serve live-testing sandboxes, innovation hubs, and thematic programmes. Schemes sharing the sandbox label range from statutory multi-authority regimes to test environments that have never been entered; no single template can describe them, and rankings built on their numbers would mislead. European reporting practice suggests that a small standardised core with proportionate extensions can serve heterogeneous reporters at acceptable cost (European Banking Authority 2021).

EFIF and the ESAs should also pilot joint thematic calls. The EU's cross-border testing framework had not been used as of the ESAs' 2023 review (European Supervisory Authorities 2023). An EU-level interviewee identified one possible explanation: early-stage firms are often not yet ready for multi-country testing (Interview 12 2026). Authorities that organised their schemes around shared problems, such as financial-crime data sharing, report stronger demand, easier internal buy-in, and joint work with other agencies and incumbent firms. An annual exercise on one or two shared problems, open to authorities with and without sandboxes and reported through the common core, would move knowledge across borders within existing mandates.

Both measures build on activities EFIF already undertakes. Their additional cost has not been estimated; feasibility would depend on keeping the reporting burden small and securing staff time from volunteer authorities. The earlier comparable reporting begins, the more the coming generation of AI sandboxes can draw on a decade of FinTech experience.

Keywords: FinTech; regulatory sandboxes; innovation facilitators; reporting; regulatory learning

Abbreviations

Acronym	Full term
AML	Anti-money laundering
EBA	European Banking Authority
EEA	European Economic Area
EFIF	European Forum for Innovation Facilitators
ESAs	European Supervisory Authorities
JRC	Joint Research Centre (European Commission)
NCA	National competent authority

Introduction

A decade after the United Kingdom opened the first FinTech regulatory sandbox in 2016 (Marcelin 2026), Europe operates a crowded and uneven landscape of innovation facilitators. Every EEA country runs at least one innovation hub, while supervised live-testing sandboxes exist in roughly a third of jurisdictions, and several highly capable FinTech markets have chosen other instruments after weighing the option (European Supervisory Authorities 2023; Hernández Sánchez 2026a). Authorities across this landscape face the same underlying task of encouraging financial innovation without weakening the commitment to stability that their public discourse consistently reaffirms (Hernández Sánchez 2026b). The instruments have meanwhile spread well beyond finance. Member States report regulatory sandboxes in transport, energy, environment, and digital policy in the Commission survey (European Commission 2026). The AI Act provides for AI regulatory sandboxes (European Union 2024), and the Interoperable Europe framework prescribes six-monthly and final reports for its sandboxes, published on a common portal (European Commission 2025).

Ten years of FinTech experience indicate what this expansion will produce if reporting practice stays as it is. Schemes multiply while their value goes undemonstrated, participation figures resist interpretation, and lessons remain with the authority that generated them. This brief proposes two coordination measures, a common reporting framework built from a shared core and instrument-specific modules, and joint thematic calls that move knowledge across borders.

The analysis draws on eleven anonymised sources selected from a corpus of eighteen interviews, written responses, and expert discussions collected between April 2025 and July 2026, together with desk research of official, legal, and academic sources. Sources are cited as *Interview NN* under randomised identifiers. Appendix A describes the corpus and the limits of the evidence.

FinTech regulatory sandboxes in Europe overview

How widespread FinTech sandboxes are depends on the definition used. Counting supervised live testing in finance, the European Supervisory Authorities found 14 sandboxes in 12 EEA countries in 2023 (European Supervisory Authorities 2023). Under stricter definitions, only 11 European jurisdictions have a live-testing FinTech sandbox (Hernández Sánchez 2026a). Beyond FinTech, counting self-reported schemes across all sectors, Member States reported 132 regulatory sandboxes in a Commission survey, three quarters of them in two Member States (European Commission 2026). Evidence on FinTech sandbox effectiveness remains limited. A study of the United Kingdom sandbox found that entry increased firms' capital raised, their probability of raising capital, their survival, and their patenting (Cornelli et al. 2024). Whether these results extend to smaller markets is unknown, and the Commission's own guidance describes European experimentation tools as largely unevaluated (European Commission 2023). Judging what sandboxes achieve therefore requires better reporting before it requires more or different schemes.

Experimentation Is Outrunning Evidence

Headline counts of European sandboxes diverge because each embeds a definition. The ESAs, applying a financial-sector definition anchored in supervised testing, found 14 sandboxes in 12 EEA countries as of October 2023 (European Supervisory Authorities 2023). A stricter count of supervised live testing yields eleven of thirty EU and EEA jurisdictions (Hernández Sánchez 2026a). Member States reported 132 regulatory sandboxes in the Commission's all-sector survey, three quarters of them reported by two Member States whose national frameworks bring large portfolios of testing schemes under the sandbox heading, and its respondents noted grey areas between sandboxes and testbeds (European Commission 2026). None of these figures is wrong, and none can serve as a ranking of regulatory sophistication. Comparative research finds, moreover, that non-adoption commonly reflects a deliberate instrument choice rather than a lag (Raudla et al. 2025; Hernández Sánchez 2026a).

Behind the counts sits a taxonomy. The classification developed in the FIRSA working paper and its accompanying dashboard distinguishes supervisory live-testing sandboxes, statutory testing spaces in which live testing rests on legislation, advisory cohort sandboxes that use the vocabulary without live-market testing, statutory exemptions without a supervised testing process, and innovation hubs as a separate facilitation channel; only the first two involve testing with real customers under supervisory monitoring (Hernández Sánchez 2026a). Figure 1 maps the resulting picture across the thirty EU and EEA jurisdictions studied. Live testing clusters in a minority of mostly smaller jurisdictions, while several of Europe's largest financial centres rely on hubs, guidance, and ordinary supervision.

Participation statistics are equally hard to read. One sandbox operated for four years without completing a live test, largely because eligibility was initially restricted to already-authorised institutions, and a more open second iteration is now being prepared (Interview 07 2025). Another authority's supervisory test environment has never been entered, because structured hub dialogue has so far resolved every case (Interview 14 2026). A statutory sandbox saw applications fall sharply between its first and second cohorts, prompting a legislative simplification of its procedures (Interview 09 2026). A fourth authority reports two participants since launch, under deliberately strict entry rules (Interview 16 2026).

Low participation is therefore consistent with weak demand, restrictive eligibility, procedural burden, limited capacity, effective triage through a hub, or the absence of problems that need live testing. Each explanation calls for a different response, and the raw number cannot distinguish them. The context that can distinguish them already sits with authorities, in eligibility rules, referral flows between hub and sandbox, the reasons applications lapse, and the volume of cases resolved at hub level. Reporting that includes this context can turn ambiguous counts into interpretable and actionable evidence.

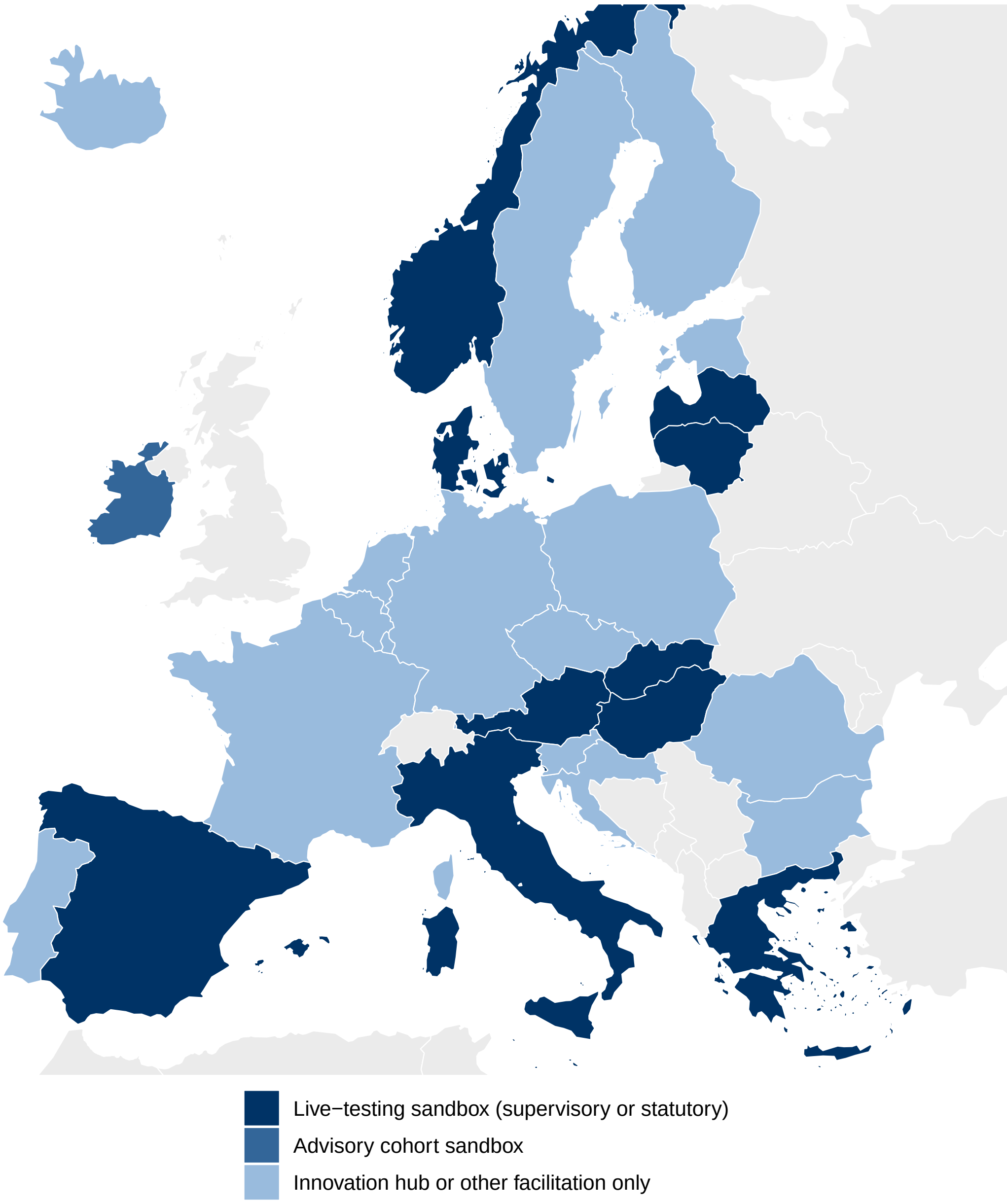

Figure 1: Innovation facilitation models for FinTech across 30 EU/EEA jurisdictions (Hernández Sánchez 2026a). Statutory testing spaces are grouped with supervised live-testing sandboxes. Source: FIRSA dashboard (dashboard.firsa.eu); administrative boundaries © EuroGeographics.

The deeper problem concerns what happens to the learning that schemes do produce. Standardised reporting templates remain rare, and when the Commission survey asked whether sandbox experience had influenced policymaking, respondents in four Member States pointed to concrete regulatory changes, seventeen considered it too early to tell, and three saw no impact (European Commission 2026). In the energy sector, the JRC finds that the process by which sandbox outcomes contribute to regulatory change is usually described only in general terms and rarely codified (Gangale et al. 2026). An external expert on structured regulatory reporting and experimental governance described the underlying mechanics. Lessons are typically dispersed through narrative reports rather than recorded in any standard form, which makes them hard to search, compare, aggregate, or reuse; authorities can duplicate work, miss relevant experience elsewhere, or reach inconsistent conclusions without noticing the conflict (Interview 08 2026). On this view, publication alone is not a remedy, since a public report may improve transparency while yielding little comparable evidence.

What Facilitators Produce When They Work

Across several interviews conducted for this study, officials emphasised the convening function of regulatory sandboxes. An EU-level official contrasted an innovation hub, in the leanest cases “an email address”, with a sandbox as a unit proper built on the “convening power of the state” (Interview 12 2026). A written response described the core benefit as meetings with experts from AML, payments, crypto-assets, regulation, and supervision “all in one place” (Interview 16 2026), and officials in a statutory sandbox stressed inter-institutional support, including access to data protection expertise (Interview 09 2026). A thematic cohort programme accelerated at least one partnership between an incumbent bank and a small FinTech firm on customer-due-diligence technology (Interview 11 2026). Published research points in the same direction; a recent study of a cohort-based sandbox programme, drawing on social capital theory, finds that designed routines such as relationship-manager brokerage, structured regulator-firm engagement cycles, and explicit boundary-setting built ties, trust, and shared understanding between regulators and innovators (Leonard et al. 2025).

Authorities can document these effects by recording the experts involved, the partnerships created, the classification questions resolved, and any guidance that followed. One case officer described the value of having worked through the legal analysis of a novel business model before it reaches ordinary supervision (Interview 02 2025), and a hub-only authority treats incoming queries as an early signal of market developments (Interview 15 2026). A framework that captures only applications and graduations will miss much of what authorities themselves value.

Schemes that share a label also differ considerably underneath it. One sandbox operates on a legally earmarked annual budget with a small dedicated team and a formal advisory board (Interview 02 2025). Others run with no earmarked funding and draw part-time on staff from busy supervisory units (Interview 05 2025; Interview 07 2025), and one official noted that without dedicated resources sandbox work is deprioritised (Interview 07 2025). Similarly, cost is poorly documented across the board. Operating models range from dedicated teams to intermittently monitored contact points, and an advisory scheme bears little resemblance, in resource terms, to one that performs technical testing (Interview 08 2026). Cost indicators appear to be uncommon. The Commission survey identifies operational cost as an internal performance indicator in only one sandbox example (European Commission 2026).

European FinTech hubs and sandboxes operate as a tiered continuum rather than as competing options. One authority described the iterative learning of its hub as a "knowledge loop" that has so far handled every case, with resource-intensive testing capped at one active case and held in reserve (Interview 14 2026). A case officer credited prior hub dialogue with the quality of formal applications, observing that "when you are able to draft the formal application, you are already quite aware of the process" (Interview 02 2025). Expectation management runs through all of this as both safeguard and tension. Officials stress that participation in the regulatory sandbox does not constitute a stamp of approval, nor does it guarantee full compliance with all applicable regulations once the solution enters the market. The authority assesses the initiative within the controlled testing environment and under the applicable regulatory framework; participation does not entail ongoing monitoring or endorsement after the sandbox period (Interview 09 2026). Consumer protection must be observed at all times (Interview 02 2025). Nevertheless, one coordinator observed that admission works in practice as a mark of quality that attracts attention and engages other public bodies (Interview 05 2025). This tension reinforces the need to communicate the limits of participation clearly. Given that resourcing, triage, and expectation management account for much of the variation that shared *sandbox* labels conceal, it is important that a common reporting template inquire about them.

Proposal 1: A Common Reporting Framework

EFIF and the ESAs should agree a short annual reporting framework for financial-sector innovation facilitators, one which may travel beyond FinTech to other sectors. The ESAs are the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA), and the European Securities and Markets Authority (ESMA). EFIF is a forum organised under their Joint Committee through which national authorities exchange experience with innovation hubs and regulatory sandboxes. Its terms of reference provide for information sharing and voluntary joint testing arrangements, while the Commission participates as an observer (European Supervisory Authorities 2019).

EFIF already collects much of the raw material. Its quarterly meetings compile case statistics across the EEA through a members' newsletter, it has surveyed Member State readiness for AI sandboxes, and its 2025 work programme includes support for the implementation of AI regulatory sandboxes (European Forum for Innovation Facilitators 2025). EFIF's terms of reference also envisage annual summaries of its work, including statistics where possible (European Supervisory Authorities 2019). The proposal would build on these arrangements by introducing common definitions and a short annual template that supports comparison across facilitators. The added value lies in a standardised, published record of learning and operational context, rather than an additional narrative reporting obligation. The architecture would pair a small shared core, which every facilitator can complete, with modules matched to the type of scheme.

Component	Content
Shared core (all facilitators)	Legal mandate and design; resourcing model and expertise; demand, selection, and referrals; safeguards and expectation management; documented learning events; negative and corrective results
Live-testing sandbox module	Testing plans and duration; consumer and data safeguards; incidents and safeguards triggered; early terminations; derogations requested and granted; exit assessments and post-exit follow-up
Innovation hub module	Query volumes, themes, and response times; referrals to testing or licensing; recurring classification questions
Thematic programme module	Problem statements and selection criteria; participants and partners; partnerships formed; published lessons

Further modules, for supervisory test environments or for sectoral regimes such as the AI Act sandboxes, could be added without altering the core. A design of this kind has support beyond the sandbox field. An EBA study of supervisory reporting argues that harmonised definitions and reporting formats can support data quality and greater convergence in supervisory practice. It also recommends a proportionate design that separates a common core from supplementary requirements (European Banking Authority 2021). However, banking reporting differs from sandbox reporting in volume, legal basis, and reporting population, so the analogy should not be pressed too far. The design lesson nevertheless carries. Standardisation delivers its value through common definitions and a deliberately small core required of authorities that choose to participate, and burden grows with every field added beyond it. OECD guidance on establishing and managing sandboxes likewise treats evaluation design as part of setting up a scheme rather than an afterthought (OECD 2025). An external expert with design experience in structured reporting of sandbox learning drew the same conclusion, arguing that a minimum common record with optional extensions is more workable than an exhaustive template, which resource-constrained authorities are unlikely to adopt (Interview 08 2026).

Several principles should guide the content. Regulatory learning is best recorded as identifiable events or outputs, covering the issue examined, the method used, the finding, any legal interpretation, the regulatory implication, and the follow-up action, so that lessons can be located and compared rather than reconstructed from narrative text. Emerging technical work suggests that records of this kind can be completed in familiar document formats and converted into structured data, provided key terms carry shared definitions across languages and legal systems (Interview 08 2026). Negative and corrective results, including tests ended early, safeguards triggered, applicants redirected, inactive schemes, and cases where existing rules proved sufficient, warrant a required category of their own, because reporting systems otherwise drift toward success stories, a tendency well documented in public-sector experimentation (Cuello et al. 2025). Resources and operational capacity deserve a place in the core, in proportionate form, since they explain much of the variation described above and since evaluation should reflect what schemes can do in practice as well as what their statutes provide. EFIF members have questioned the value of granular operational detail such as staff numbers (European Forum for Innovation Facilitators 2025), and the framework can accommodate that concern by asking for the resourcing model rather than headcounts. The shared core should remain small, each indicator should be published with its definition, and no composite score or ranking should be built on the results. Comparison is useful module by module; a league table of heterogeneous instruments would mislead readers and weaken the incentive to report honestly.

The moment favours an incremental step. EU law already imposes structured reporting on newer sandbox families. Interoperability regulatory sandboxes must report at least every six months and publish their reports on a common portal (European Commission 2025), and the AI Act sets out annual reporting duties for AI regulatory sandboxes (European Union 2024, art. 57(16)). A financial-sector core agreed within EFIF and tested with volunteer authorities could be designed with these regimes in mind, while retaining fields specific to financial supervision. A pilot phase would also serve the design itself, since the proportionality of a template's categories can only be judged inside real regulatory workflows.

Proposal 2: Joint Thematic Calls

The EU's procedural framework for cross-border testing had not been used as of the ESAs' 2023 review (European Supervisory Authorities 2023). An EU-level interviewee described a possible mismatch between this opportunity and the needs of early-stage firms, which are often not yet ready for multi-country operation (Interview 12 2026). In this discussion, a sandbox "passport" is shorthand for facilitating a firm's testing across jurisdictions. It does not mean an authorisation to operate across the EU or automatic recognition of regulatory approval.

The Interoperable Europe arrangements concern a different setting: cooperation on public-sector interoperability, rather than the market expansion of a FinTech firm (European Commission 2025). An external expert considered the requirements demanding for a voluntary mechanism and reported that no such interoperability regulatory sandboxes had been established by mid-2026 (Interview 08 2026). This is a separate coordination challenge; its causes should not be equated with those affecting financial-sector cross-border testing.

The problems themselves do cross borders. Financial-crime data sharing, AI in financial services, tokenised assets, digital identity, and open finance raise similar legal questions in every jurisdiction, and technologies such as AI-driven decision-making and decentralised finance generate risks that are cross-border by construction (Interview 03 2025). Experience with problem-centred engagement is encouraging. One authority reoriented its sandbox around a financial-crime data-sharing theme, drawing incumbent banks into joint projects and cooperating with the data protection authority (Interview 05 2025). Another runs six-month thematic cohorts selected against published problem statements (Interview 11 2026). An EU-level official observed that thematic cohorts help authorities plan resources and secure internal buy-in, because they concentrate the convening power of the authority on a defined problem (Interview 12 2026).

Joint thematic calls would extend this format across borders, building on coordination work EFIF has already begun in support of AI sandbox implementation and in its members' exchanges on shared supervisory themes (European Forum for Innovation Facilitators 2025). Participating authorities, working through EFIF, would agree one or two shared problems each year and include the exercise in its annual work plan. EFIF's terms of reference explicitly provide for voluntary cross-border or joint testing across existing regulatory sandboxes (European Supervisory Authorities 2019). The proposed calls would use that coordination role: the ESAs would support agreement on a common theme, while participating national authorities would invite and assess projects under their own mandates. Any testing, supervisory decision, or exemption would remain subject to the applicable national and EU legal framework. This proposal would not create an EU-wide authorisation or give EFIF new regulatory powers. National authorities would take part in whatever format their mandate and resources support, whether a live-testing cohort, structured hub engagement, or a supervisory test environment, and would report through the shared core. EFIF would close the cycle with a joint debrief and a published synthesis of lessons and unresolved legal questions. Knowledge would thus move in both directions. Regulators would compare interpretations of the same problem across jurisdictions, and firms would receive more consistent supervisory expectations across markets, together with structured contact with peers, incumbents, and authorities beyond their home market. Because EFIF works by consensus and participation would be voluntary, uptake would depend on incentives. Linking thematic calls to existing EU funding and support instruments, subject to those instruments' eligibility rules and separate funding decisions, is one plausible route, and the integration of sandbox testing into EU research and deployment programmes has been raised in expert discussion as a way to make voluntary participation attractive (Interview 08 2026).

Implementation and Feasibility

Neither measure is costless, and the sequencing should respect the institutions involved. EFIF has no power to require reporting, so the template would be voluntary and would need visible sponsorship from the ESAs, whose 2023 recommendations already ask authorities to evaluate their facilitators using metrics and participant feedback (European Supervisory Authorities 2023). A realistic sequence would begin with a shared vocabulary of facilitator types and a one-page core agreed within EFIF's normal work programme cycle, followed by a pilot among volunteer authorities run alongside a first thematic call, and only then a published synthesis. Timelines of this kind commonly slip, and volunteer authorities would carry real staff costs. The template should therefore stay short enough for a small innovation team to complete, with fields marked "not collected" where data do not yet exist, and hub-based participation in thematic calls should count as full participation.

The main objections can be addressed through the design of the framework. Confidential information can be protected by reporting aggregate figures and anonymised themes rather than firm-level details. Published definitions and comparisons within each module would limit false precision. Common non-endorsement language would reduce the risk that participation is mistaken for regulatory approval, a concern authorities already recognise (Interview 05 2025; Interview 09 2026). Including negative and corrective results as core fields would reduce the emphasis on success stories, although completeness would still depend on participating authorities' reporting practices.

Conclusion

After a decade of FinTech regulatory experimentation, the main policy question is no longer whether regulatory sandboxes should be established. Authorities need to know what these schemes produce, which lessons can travel across jurisdictions, and whether experience leads to changes in supervision, guidance, or regulation (Marcelin 2026; European Supervisory Authorities 2023). Current reporting rarely supports such judgements, since participation figures arrive without the context needed to read them and lessons stay dispersed across scheme-specific reports. As sandboxes extend into AI, energy, and digital government, the cost of these habits rises.

The two proposals set out here would help address this gap through structures that already exist. A common reporting core with instrument-specific modules would give authorities a shared minimum record, and joint thematic calls would let them examine the same regulatory problem through whatever instrument each jurisdiction operates. The voluntary coordination proposed here would operate within existing mandates and would not produce rankings.

The first step is concrete. Within the next EFIF work programme cycle, members could agree a shared vocabulary of facilitator types and trial the one-page core with a handful of volunteer authorities, with lessons from the pilot available to inform reporting in AI regulatory sandboxes and other sectors. A decade of FinTech experience shows the difficulties of comparing learning across schemes. Establishing a common record early would help the next generation avoid repeating them.

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Appendix A: Sources and Methods

The interview corpus assembled for this project comprises eighteen primary sources collected between April 2025 and July 2026, including semi-structured interviews with officials of national competent authorities and EU-level bodies, written institutional responses, and expert interviews and discussions. This brief draws on the eleven sources most relevant to reporting, evaluation, and cross-border coordination; the remaining sources inform other project outputs. Of the eleven, six are semi-structured interviews with officials of national competent authorities and one is an interview with an official of an EU-level authority. Two are expert engagements, and two are written institutional responses. Two interviews were recorded with consent; the remaining sources are researcher notes from unrecorded online interviews or written documents. Interviews followed a semi-structured protocol covering objectives, governance, resources, operations, performance, and regulatory learning.

Sources are cited as *Interview NN*. Codes are non-consecutive identifiers assigned at random within broad collection periods, so that the numbering does not reproduce the order of collection, and codes are not comparable across project publications. Following established standards for reporting anonymised elite-interview data (Bleich and Pekkanen 2013), the table below documents respondent type, facilitation model, format, and date for each source, while withholding names, organisations, and jurisdictions under the project's ethics protocol. Quotations are used only where they do not identify a participant or disclose sensitive operational detail, and dates are reported at month-level precision.

The interview material was combined with in-depth desk research covering Commission, ESA, JRC, OECD, and parliamentary documents alongside the academic literature. The comparison centres on how reported participation and learning vary with scheme design, resources, and the relationship between hubs and live testing. Accounts of low demand are considered alongside alternative explanations, including restrictive entry rules and effective resolution through hub dialogue. Public documents provide a separate source for institutional arrangements and reported outcomes. The recommendations are proposals informed by this evidence, not interventions whose effectiveness has been established by the study.

The evidence has limits that the main text respects. Respondents were selected purposively to cover the main facilitation models, so the material identifies recurring themes and mechanisms; it does not support prevalence claims or causal inference. Most sources reflect the perspective of authorities rather than firms. Anonymisation restricts independent verification, which the brief mitigates by citing public sources wherever a claim can be checked against them.

Code	Respondent(s)	Facilitation model	Format	Date
02	Sandbox and innovation-hub case officer	Innovation hub and regulatory sandbox	Online interview	Oct 2025
03	Academic researcher (financial technology, DeFi)	—	Online interview	Apr 2025
05	Regulatory sandbox coordinator	Innovation hub and regulatory sandbox	Online interview	Oct 2025
07	Head of digital-finance supervision; innovation-hub coordinator	Innovation hub and regulatory sandbox	Online interview	Oct 2025
08	External expert on structured regulatory reporting and experimental governance	—	Online interview	Jul 2026
09	Two sandbox management and coordination officials	Statutory sandbox and innovation hub	Online interview	May 2026
11	Sandbox programme manager	Thematic cohort sandbox and innovation hub	Online interview	May 2026
12	Policy officer, digital finance and innovation	EU-level coordination	Online interview	Jun 2026
14	Institutional response	Innovation hub and supervisory test environment	Written response	May 2026
15	Innovation and strategy staff member	Innovation hub (no live-testing sandbox)	Online interview	Jun 2026
16	Institutional response	Innovation hub and regulatory sandbox	Written response	May 2026