USER MANUAL · TECHNICAL REFERENCE

El Salvador Division Research Culture Sustainability Index

A dual-track guide for decision-makers and administrators

This manual documents the interactive dashboard, the seven-dimension RCSI framework, the M0–M6 milestone progression, the digital twin sandbox with policy levers, the data collection instruments, the historical trend analysis, the data archive, and the upload workflow. It is intended for school heads, division officials, and the data administrators who maintain the system.

VERSION	2.0 — Launch Edition
AUDIENCE	Decision-Makers & Administrators
ISSUED	2026 · El Salvador Division

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Chapter 1 — Introduction & Purpose

The **El Salvador Division Research Culture Sustainability Index (RCSI)** dashboard is an interactive web application that lets school heads, division officials, and data administrators see, at a glance, how research-ready every school in the division is — and what to do about it. The dashboard turns the seven-dimension RCSI framework (Readiness, Awareness, Capacity, Structured Support, Institutional Anchoring, Community of Practice, and Impact Realization) into a living picture that updates every quarter when new survey data is uploaded.

This manual is written for two audiences. **Part I (Chapters 1–7)** is for decision-makers — school heads, division supervisors, and policy officers who consume the dashboards, read the narrative briefs, and use the Digital Twin Sandbox to model interventions before committing resources. **Part II (Chapter 8 and the appendices)** is for administrators — the IT and data officers who upload Excel files, manage the database, and keep the system running. Both parts use plain language and step-by-step instructions; no programming knowledge is required.

1.1 What the dashboard is for

The dashboard answers four questions that decision-makers ask every quarter: **(1)** How is the division doing overall on research culture? **(2)** Which schools are leading, which are lagging, and by how much? **(3)** Where is the research pipeline bottlenecked — at the awareness stage, the capacity stage, or the publication stage? **(4)** If we invest in a specific intervention (more training, more mentors, more budget), what will the projected improvement be? Each of these questions maps to one of the five tabs at the top of the dashboard.

1.2 The eight tabs at a glance

Tab	Audience	Purpose
Overview	Decision-makers	Division-wide KPIs, RCSI trend, milestone distribution, and an executive brief with historical quarter-over-quarter comparison. Includes a quarter selector and PDF report download.
Schools	Decision-makers	Sortable table of all schools with sparklines and milestone badges; click any row to open a detailed school profile with radar chart and research records. PDF report download available.
Research	Decision-makers	Theme × status matrix, teacher-rank × education heatmap, and a Top 10 Teacher-Researchers recognition section. PDF report download available.
Twin Sandbox	Decision-makers	Real-time what-if simulator with policy levers and dimension sliders. See projected RCSI, milestone, and narrative update live. PDF report download available.
Trends	Decision-makers	Multi-quarter trend analysis: RCSI and sub-index trends across all quarters, a radar overlay of recent quarters, and a dimension-by-dimension change table.
Survey	School heads / Data collectors	Two data collection instruments: a 35-item quarterly survey questionnaire and a 14-field research metadata form. Both produce CSV files and include a Print Questionnaire button for offline collection.
Archive	Administrators	Quarter snapshots with CSV export, full research metadata export, and a complete upload audit log showing every merge/replace operation.

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Tab	Audience	Purpose
Upload	Administrators	Drag-and-drop portal with Merge (recommended) and Replace modes. Validates file schema, handles simultaneous uploads safely, and logs every operation to the audit trail.

Table 1.1 — The eight dashboard tabs and their primary audiences.

1.3 How to read this manual

If you are a decision-maker, read Chapters 1 and 2 first — they explain the RCSI framework and the M0–M6 milestone ladder in plain terms. Then jump to the chapter for the tab you want to use (Chapters 3–7). Chapter 8 covers the data collection instruments (Survey tab). Chapters 9 and 10 cover trend analysis and the data archive. If you are an administrator, read Chapter 11 (Upload Portal) and Appendix A (the data dictionary) before your first upload. Appendix B (FAQ) is useful for everyone when something does not behave as expected.

> **A note on interpretation**
>
> The dashboard is a decision-support tool, not a decision-maker. The RCSI scores, milestone classifications, and twin-sandbox projections are computed from the data you upload and the formula defaults described in Chapter 2. Always cross-check a projected intervention against on-the-ground knowledge of the school before committing budget or personnel.

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Chapter 2 — The RCSI Framework

The Research Culture Sustainability Index is built on a study conducted in the El Salvador Division. It measures seven dimensions of a school's research culture, combines them into a single composite score called the **RCSI**, and classifies each school into one of seven sequential **milestones (M0–M6)**. This chapter explains each dimension, the milestone progression, the composite formula, and what "sustainable" means in this framework.

2.1 The seven sub-indices

Code	Name	Milestone	What it measures
R	Readiness	M0	School preparedness and foundational conditions for research, including infrastructure and mindset. This is the baseline dimension — every school starts here.
A	Awareness	M1	Level of research awareness among teachers and leaders. **The threshold for advancing from M0 to M1 is A ≥ 0.80.** Until this threshold is crossed, no school can progress.
C	Capacity	M2	Research skills, training, and expertise of the teaching staff. Built through mentorship, workshops, and graduate study.
S	Structured Support	M3	Availability of budget, time allocation, mentoring, and other institutional support for research.
I	Institutional Anchoring	M4	How deeply research is embedded in school plans, policies, and regular meetings. Reflects leadership commitment.
P	Community of Practice	M5	Strength of research collaboration, sharing forums, and peer learning among teachers.
M	Impact Realization	M6	Tangible outcomes of research: publications, utilizations, and policy changes. The final milestone.

Table 2.1 — The seven sub-indices and their corresponding milestones.

2.2 The M0–M6 milestone ladder

The milestones form a strict sequential ladder. A school can only be classified at milestone M*k* if it has already met the thresholds for all earlier milestones M0 through M*k*−*1*. This means a school cannot skip stages — even with strong publication outputs (M), it cannot reach M6 if its Awareness (A) is below 0.80, because it would be stuck at M0.

The default thresholds are: **A ≥ 0.80** for M0→M1 (per the original study), and **0.50** for the other dimensions (C, S, I, P, M). These defaults can be overridden in the Twin Sandbox's Thresholds sub-tab (see Chapter 6) for sensitivity analysis, but the production dashboard always uses the defaults.

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> **What "sustainable" means**
>
> When a school reaches M6 *and* its composite RCSI is ≥ 0.70, it is flagged as **"sustainable"**. In the milestone model, sustainability means the school cycles back to M0 for the next iteration — a self-sustaining research culture that no longer requires external push. This is the long-term goal for every school in the division.

2.3 The composite RCSI formula

The composite RCSI is a weighted average of the seven sub-indices. By default, the dashboard uses **equal weights of 12.5% per dimension** (1/8 each), as preferred by the division. The formula is:

```
RCSI = 0.125·R + 0.125·A + 0.125·C + 0.125·S + 0.125·I + 0.125·P + 0.125·M
```

Each sub-index value is a decimal between 0 and 1, so the RCSI also ranges from 0 to 1. Higher is better. The dashboard displays RCSI to three decimal places (e.g., 0.364). The weights can be overridden in the Twin Sandbox's Weights sub-tab — for example, to emphasize Impact Realization (M) more heavily, you might set its weight to 25% and reduce the others proportionally. Weights are auto-normalized to sum to 1.

2.4 How milestones and RCSI relate

The RCSI and the milestone are two complementary views of the same data. The RCSI is a continuous score — useful for ranking schools and tracking trends. The milestone is a discrete stage — useful for communicating progress to non-technical audiences and for triggering interventions ("we need to push School X past M1 this quarter"). A school can improve its RCSI without advancing its milestone (if the improvement is in a dimension whose threshold is already met, or in a dimension below the next threshold). The Twin Sandbox narrative explicitly distinguishes these cases — see Chapter 6.

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Chapter 3 — Dashboard Walkthrough: Overview Tab

The Overview tab is the first thing you see when you open the dashboard. It gives a division-wide snapshot of where research culture stands right now, what has changed over the last four quarters, and where to focus your attention next. Every chart on this tab has a matching line in the Executive Brief narrative at the top—so you can read the brief first, then drill into the charts that prompted each insight. A **quarter selector** in the header lets you view any historical quarter, and the school count badge dynamically reflects how many schools have data for the selected quarter.

3.1 The Executive Brief narrative

At the very top of the Overview tab is a colored card titled **"Executive Brief"**. This is the most important element on the page for decision-makers. It is auto-generated from the live data and contains three parts: a **title** that summarizes the division's state in one line (e.g., "30 of 30 at M0, RCSI 0.364 (+0.018 vs 2026-07)"), a list of **insights** that interpret the charts in milestone terms—including a historical comparison insight when a previous quarter exists—and a **Recommended Intervention** box that names the single highest-leverage action for the quarter. A **Download PDF** button next to the brief generates a branded report with the narrative, KPIs, and data tables.

The brief's color tone changes with the data: **green** when schools are sustainable, **amber** when the Awareness gap is the binding constraint, **red** when the division is in critical condition, and **neutral blue** for general insights. Read the color first — it tells you whether to celebrate, plan, or intervene urgently.

3.2 The five KPI cards

Below the brief are five KPI cards. **Division Avg RCSI** is the mean composite score across all 30 schools in the latest quarter. **Sustainable Schools** counts how many have reached M6 with RCSI ≥ 0.70. **Total Research** is the cumulative count of all research outputs (abstracts plus full papers). **Publication Rate** is the percentage of outputs that have reached "published" status. **Utilization Rate** is the percentage of outputs marked as utilized by a school. Hover any card to see the underlying numbers.

3.3 The RCSI Trend chart

The large area chart shows the division's average RCSI per quarter, with the seven sub-indices drawn as faint lines behind it. Use this chart to see whether the division is improving over time and which dimensions are dragging the composite down. If the RCSI line is rising but a sub-index line is flat or falling, that dimension is the next bottleneck — even if the overall trend looks healthy.

3.4 Milestone distribution and dimension averages

The donut chart on the left shows how many schools are at each milestone stage (M0–M6). In a healthy division, you want to see the donut shift rightward over time — fewer schools at M0, more at M3 and above. The horizontal bar chart on the right shows the division-wide average for each of the seven sub-indices, with the dimension's color matching the legend at the top. The shortest bar is the dimension you should target next — improving it lifts the composite RCSI the fastest.

3.5 Theme, status, and year breakdowns

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The bottom row of the Overview tab has three charts. **Research Themes** is a donut showing the distribution of outputs across the seven research themes (Assessment & Evaluation, Leadership & Governance, etc.). **Research Status** is a horizontal bar chart showing how many outputs are at each publication stage (draft, under review, submitted, published, rejected). **Research Outputs per Year** is a line chart showing annual productivity. Together these three charts tell you *what* the division researches, *how far* it gets in the publication pipeline, and *how much* it produces over time.

Reading the pipeline

If the Status chart shows a large "draft" or "under review" bar, the publication pipeline is bottlenecked. Research that never gets published cannot be utilized, which directly limits the M dimension (Impact Realization, M6). This is the single most common blocker for divisions that produce a lot of research but never see it translated into practice.

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Chapter 4 — Dashboard Walkthrough: Schools Tab

The Schools tab is where you go to compare individual schools. It shows all 30 schools in a single sortable table, with a sparkline for each school's RCSI trend and a milestone badge that tells you the school's current stage. Click any row to open a detailed school profile in a dialog.

4.1 The Schools Explorer table

The table has 14 columns: school ID, name, RCSI, milestone badge, the seven dimension values (R, A, C, S, I, P, M), a sparkline of the last four quarters' RCSI, and counts of research outputs, published outputs, and utilized outputs. Click any column header to sort by that column — click again to reverse the order. Use the search box in the top-right corner to filter by school name or ID.

The default sort is by RCSI descending, so the strongest schools appear at the top. The milestone badge uses a color scale from gray (M0) through red, orange, amber, yellow, lime, to green (M6). A school at M6 with RCSI ≥ 0.70 shows an additional "Sustainable" tag. The sparkline lets you see at a glance whether a school is improving, flat, or declining — a flat line at a low RCSI is a bigger concern than a rising line at the same score.

4.2 The School Detail dialog

Click any school row to open a detailed profile dialog. The dialog has four sections. At the top are four KPI cards: current RCSI, milestone (with a 7-segment progress bar showing how far the school has climbed the M0–M6 ladder), total research outputs, and the document mix (full papers vs. abstracts).

Below the KPIs are two charts side by side. The **radar chart** shows the school's seven-dimension profile for the latest quarter — the shape tells you instantly whether the school is balanced (a near-circle) or lopsided (a star burst in one or two directions). The **quarterly RCSI trend** line chart shows how the composite has changed over time. Beneath those is a multi-line **sub-index evolution** chart that shows each of the seven dimensions over the available quarters.

The bottom of the dialog shows the school's research portfolio: a theme breakdown, a status breakdown, and a scrollable table of the 20 most recent research records (title, teacher, theme, status, year). Records with a publication link are clickable. Use this dialog to brief yourself on a school before a site visit or a mentoring conversation.

4.3 The Schools Executive Brief

Like the Overview tab, the Schools tab has an Executive Brief at the top. It names the **top 3 schools closest to advancing** (with the exact Awareness gap each needs to close to reach M1) and the **bottom 3 needing foundational support**. It also identifies the most common weakest dimension among the bottom 3 and recommends a tiered strategy: push the top quartile past M1, lift the bottom quartile with foundational Readiness investments, and pair both with a buddy-system where top performers mentor bottom performers on their shared weak dimension.

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Chapter 5 — Dashboard Walkthrough: Research Tab

The Research tab is for decision-makers who want to understand the *shape* of the division's research output — not just how much, but what themes, what status, and which teacher ranks are producing. It has two heatmap tables and four summary KPI cards, plus its own Executive Brief that interprets the heatmaps in milestone terms.

5.1 The Theme × Status matrix

The left heatmap shows research themes (rows) crossed with publication statuses (columns). Each cell is colored by count — darker cells mean more outputs in that theme-status combination. The right-most column shows the row total per theme. Use this matrix to answer two questions: **(1)** Which themes dominate the division's research agenda? **(2)** Where in the publication pipeline is each theme stuck?

A theme with a large "draft" or "under review" cell but a small "published" cell has a pipeline problem — research is being started but not finished. A theme with a high "published" count is a model whose review practices could be replicated. The Executive Brief automatically identifies the theme with the highest publication efficiency and recommends it as the playbook for the others.

5.2 The Teacher Rank × Education heatmap

The right heatmap shows teacher ranks (rows: Teacher I, II, III, Master Teacher I, II, School Head) crossed with educational attainment (columns: Bachelor's, Master's, Doctorate). Each cell is the count of research outputs produced by teachers in that rank-education combination. This heatmap reveals the capacity distribution — which directly maps to the **C dimension (Capacity, M2)**.

If the heatmap shows that Master Teacher I and II produce most of the research while Teacher I and II produce very little, the division has a capacity gap. Until lower-producing ranks are trained and supported, the division cannot progress past M2 at scale. The Executive Brief recommends targeted research-methods training for the lowest-producing rank.

5.3 The summary KPI cards

Below the heatmaps are four summary cards: **Total Outputs** (with full-paper vs. abstract breakdown), **Published** (with publication rate), **Utilized** (with utilization rate), and **Schools** (count of schools in the division). These mirror the Overview tab's KPIs but are positioned here for quick reference while you study the heatmaps.

5.4 Top 10 Teacher-Researchers

At the bottom of the Research tab is a recognition section titled **"Top 10 Teacher-Researchers"**, styled with an amber/gold gradient and a trophy icon. This table ranks the division's most productive researchers by number of research outputs. The top three receive gold, silver, and bronze medals respectively, and their rows are highlighted with a subtle amber tint.

Each row shows the researcher's name, research output count (in an amber badge), teacher rank (Teacher I/II/III, Master Teacher I/II, or School Head), educational attainment (Bachelor's, Master's, or Doctorate), years of service, the years their research was undertaken (shown as a range if 3+ years, or comma-separated if

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fewer), and up to three theme chips with a "+N more" indicator for additional themes. This recognition gives public visibility to the division's research leaders and incentivizes continued productivity—which directly advances the division's RCSI.

The three-action agenda

The Research tab's Executive Brief is the most action-oriented of the four. It always ends with three sequenced recommendations aligned to the milestone ladder: **(1)** build Capacity (C, M2) via training, **(2)** streamline the publication pipeline (M6 enabler) via mentor assignment, and **(3)** broaden theme coverage (I, M4) to deepen institutional anchoring. Use these three actions as your quarterly research-committee agenda. A **Download PDF** button next to the brief exports the research analytics report with the narrative, KPIs, matrices, and the Top 10 Researchers table.

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Chapter 6 — The Digital Twin Sandbox

The Digital Twin Sandbox is the centerpiece of the dashboard for decision-makers. It is a real-time what-if simulator that lets you model interventions *before* committing resources. Pick a school, adjust the policy levers (or raw dimension sliders), and watch the projected RCSI, milestone, and Executive Brief update live against the actual baseline.

6.1 The Twin concept

A "digital twin" is a virtual copy of a real system that you can experiment on without affecting the original. In this dashboard, the twin is a copy of a school's seven-dimension profile. When you adjust a slider, the twin recomputes what the school's RCSI and milestone *would be* if the intervention were actually applied. The actual baseline never changes — only the projected values do. This lets you explore "what if we doubled training frequency?" or "what if we cut the mentorship ratio in half?" safely, before you spend a peso.

6.2 The four sub-tabs

The Twin Sandbox has four sub-tabs, selected from the left panel. **Policy Levers** (the default) is the decision-maker-friendly input layer — see Chapter 7 for the full reference. **Intervention** lets you set raw dimension deltas directly (range −0.30 to +0.30 per dimension). **Weights** lets you override the default 12.5% equal weights. **Thresholds** lets you override the default milestone thresholds (A ≥ 0.80, others ≥ 0.50).

When you adjust Policy Levers, the Intervention tab's sliders update automatically to show the combined dimension deltas — a "Synced from Policy Levers" badge appears to confirm the link. If you then manually edit a dimension slider on the Intervention tab, the badge changes to a "Manual edits override" warning. To re-sync, switch back to Policy Levers and adjust any lever.

6.3 The results panel

The right panel shows the simulation result. Three headline cards compare **Actual** (gray), **Projected** (cyan), and **Δ Change** (green for improvement, red for regression). Beneath them are two milestone progress bars — one for the actual path, one for the projected path — each with a plain-language note about which dimension to boost next and by how much.

Below the progress bars are two charts. The **radar overlay** shows the actual and projected seven-dimension profiles on the same axes — the gap between the two shapes is the intervention's effect. The **per-dimension delta bar chart** shows which dimensions gained (cyan bars) and which lost (rose bars). Together these two charts let you see both the shape of the change and its magnitude.

6.4 The reactive Executive Brief

The Executive Brief at the top of the Twin Sandbox is reactive — it changes tone and content based on the simulation outcome. There are five states:

State	Tone	What the brief says
No change yet	Neutral blue	Guides you to drag a slider. Names the dimension with the smallest gap to the next milestone.

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State	Tone	What the brief says
Milestone advances	Green	Celebrates the advance. Names the largest-gaining dimension and the next threshold to chase.
RCSI up, milestone unchanged	Amber	Names the improvement but flags that the next threshold was not crossed. Tells you exactly which dimension to boost next and by how much.
Milestone regresses	Red	Warns that the intervention would set the school back. Names the largest-declining dimension and recommends reversing the change.
RCSI down, milestone unchanged	Orange	Flags the decline even though the milestone held. Recommends reversing the change or compensating elsewhere.

Table 6.1 — The five reactive states of the Twin Sandbox Executive Brief.

A note on simulation fidelity

The Twin Sandbox is for exploration, not prediction. The projected RCSI assumes that a slider delta translates linearly into a dimension change — in reality, interventions have diminishing returns and interaction effects. Use the sandbox to *compare* interventions and find the highest-leverage move, then validate with on-the-ground knowledge before committing budget.

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Chapter 7 — Policy Levers Reference

The Policy Levers sub-tab is the default input layer for the Twin Sandbox. It translates five decision-maker-friendly policy choices into the seven-dimension deltas that drive the simulation. Each lever has a baseline (the status quo) — moving a lever above baseline produces positive deltas; below produces negative deltas. This chapter is a complete reference for all five levers.

7.1 The five policy levers

Lever	Range (baseline)	Primary → Dimension	Secondary → Dimension
Training Frequency	0–8 sessions/qtr (2)	C — Capacity (M2)	A — Awareness (M1)
Mentorship Ratio	1:1 to 1:20 (1:10)	S — Structured Support (M3)	P — Community of Practice (M5)
Support Budget	0–100% of target (40%)	S — Structured Support (M3)	R — Readiness (M0)
Leadership Commitment	0–100% of meetings (30%)	I — Institutional Anchoring (M4)	A — Awareness (M1)
Collaboration Frequency	0–8 forums/qtr (1)	P — Community of Practice (M5)	M — Impact Realization (M6)

Table 7.1 — The five policy levers and their dimension mappings.

7.2 How levers map to dimensions

Each lever affects one primary dimension (larger weight) and one secondary dimension (smaller weight). The mapping is grounded in the milestone framework — a lever's primary dimension is the one whose milestone the lever most directly advances. For example, Training Frequency primarily builds Capacity (C, M2) because training is the most direct way to build research skills; secondarily it raises Awareness (A, M1) because exposure to training also makes teachers more aware of research.

The per-dimension impact chips below each lever show the exact delta contribution in real time. A green chip means the lever is contributing a positive delta to that dimension; a red chip means negative; a gray chip means zero (lever at baseline). The chips are color-coded by dimension (R=cyan, A=violet, C=emerald, S=amber, I=rose, P=blue, M=pink) to match the rest of the dashboard.

7.3 Worked example: advancing a school from M0 to M2

Suppose School_1 is at M0 with RCSI 0.319, Awareness (A) at 0.61, and Capacity (C) at 0.39. To advance to M1, A must reach 0.80 — a gap of 0.19. To then advance to M2, C must reach 0.50 — a gap of 0.11. Here is a lever sequence that achieves both:

Step 1: Set Training Frequency to 8 sessions/qtr (max). This produces A +0.09 (from 0.61 to 0.70) and C +0.15 (from 0.39 to 0.54). A is still 0.10 short of the M1 threshold.

Step 2: Set Leadership Commitment to 100% of meetings. This produces A +0.07 (cumulative 0.77) and I +0.21. A is still 0.03 short.

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Step 3: Switch to the Intervention tab and nudge the A slider up by +0.03 manually. A crosses 0.80 — M1 achieved. Because C is already at 0.54 (above the 0.50 threshold), M2 is also achieved. The milestone jumps from M0 directly to M2, and the Executive Brief flips to green with the title "Intervention advances School_1 from M0 → M2".

When levers are not enough

This example shows that policy levers alone may not always close the final gap — sometimes a small manual nudge on the Intervention tab is needed. This is realistic: policy decisions set the conditions, but targeted support for an individual school is what closes the last mile. Use the Twin Sandbox to find the smallest combination that advances the milestone, then replicate the recipe at similar schools.

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Chapter 8 — Data Collection: Survey Tab

The Survey tab is the data collection hub. It contains two instruments that produce the CSV files the Upload tab expects: a **Quarterly Survey** (35 items, 5 per RCSI dimension) and a **Research Metadata** form (14 fields per research output). Both instruments feature a **School dropdown** populated with the 24 real El Salvador Division schools and their official DepEd IDs, a **Load Example** button for demonstration, and a **Print Questionnaire** button for offline paper-based collection.

8.1 The Quarterly Survey form

The Quarterly Survey is a 35-item Likert-scale questionnaire—5 questions per RCSI dimension (R, A, C, S, I, P, M). Each question has 5 response options: None (0), Low (0.25), Mid (0.5), High (0.75), and Full (1.0). The dimension score is the average of its 5 questions, producing a 0–1 value that matches the quarterly_survey_data.csv format.

A **live scores sidebar** on the right shows the computed RCSI, milestone badge, next threshold to clear, and per-dimension progress bars—all updating in real time as you answer questions. A **CSV row preview** shows the exact row that will be generated. The quarter dropdown auto-detects the current quarter based on today's date (e.g., in July it selects "Q3 (July) 2026 · Current") and auto-rolls to the new year when January arrives.

Click **Add to Queue** to save the current school's responses and start another, or **Download CSV** to export a single row or all queued rows as a file ready for the Upload tab. The **Load Example** button pre-fills all 35 questions with a realistic profile (RCSI ≈ 0.436, M2) for demonstration.

8.2 The Research Metadata form

The Research Metadata form captures individual research outputs (abstracts and full papers). It has three sections: **Researcher & School** (teacher name, school dropdown, upload date, teacher rank, educational attainment, years of service, year undertaken), **Research Output** (title, document type, theme, status, publication link), and **Utilization** (utilized by school toggle + utilization date).

The form features **automatic theme detection**: as you type the research title, the system scans it against 60+ keywords and suggests the most likely theme. A violet "Auto-detected" badge appears next to the title with a tooltip showing the matched keywords and confidence level (Strong / Likely / Possible). The Theme dropdown auto-sets to the detected theme. If you manually change the theme, an amber "Manual override" badge appears and auto-detection pauses until you edit the title again.

Like the Quarterly Survey, the Research Metadata form has a **CSV row preview**, a **multi-record queue**, and a **Load Example** button that pre-fills the form with one of three sample research records (Assessment & Evaluation, Technology Integration, or Leadership & Governance).

8.3 The Print Questionnaire button

The **Print Questionnaire** button at the top of the Survey tab opens a new browser window with a print-optimized A4 version of the 35-item survey and triggers the browser's print dialog. This is designed for offline data collection: school heads print the survey, distribute copies to teachers for paper-based completion during a staff meeting, then enter the responses into the digital form later.

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The printable version includes: a branded header with "El Salvador Division · RCSI Quarterly Survey", school and respondent information form fields, a response scale legend, all 35 questions organized into 7 dimension sections (each with a colored header showing the dimension code, name, description, and milestone), 5 checkboxes per question (None/Low/Mid/High/Full), and signature blocks for the respondent and school head.

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Chapter 9 — Trend Analysis

The Trends tab is the dedicated multi-quarter trend analysis view. While the Overview tab shows a single quarter (with a comparison to the previous one), the Trends tab shows the full historical trajectory across all available quarters. This is where decision-makers go to answer: "Are we improving over time? Which dimensions are trending up or down? Is the division making progress toward sustainability?"

9.1 The Trend Summary brief

At the top is a color-coded brief that summarizes the division's trajectory. The tone adapts to the direction: **green** (TrendingUp icon) when RCSI is improving, **red** (TrendingDown icon) when declining, **amber** (Minus icon) when stable. The title states the full range: e.g., "Division RCSI trending upward: 0.306 → 0.364 (+0.058)". The body lists the percentage change and names the improving and declining dimensions.

9.2 The multi-quarter trend chart

The first chart is a line chart showing the division's RCSI and all 7 sub-indices across every available quarter. The RCSI line is thick and cyan; the 7 dimension lines are thinner and color-coded. Use this chart to see at a glance which dimensions are rising, flat, or falling over time. If the RCSI line is rising but a sub-index line is flat or falling, that dimension is the next bottleneck.

9.3 The multi-quarter radar overlay

The second chart is a radar overlay showing the 7-dimension profile for the 4 most recent quarters. Each quarter is a different color. The shape expanding outward over time shows dimension improvement visually—a shrinking shape is a warning sign. This is the most intuitive chart for non-technical audiences: "the shape is getting bigger, so we're improving."

9.4 The dimension-by-dimension trend table

Below the charts is a table showing, for each dimension (and the RCSI composite), the first-quarter value, latest-quarter value, absolute change, percentage change, a direction icon (up/down/flat), and a mini sparkline. The RCSI row is highlighted in cyan at the top. This table gives the precise numbers behind the charts—useful for including in reports or presentations.

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Chapter 10 — Data Archive

The Archive tab is the administrator's data management hub. It provides a complete view of everything in the database: quarter snapshots, full research metadata export, and an upload audit log. Use this tab to verify data integrity, export backups, and trace any upload operation.

10.1 Stats overview

At the top are four stat cards: **Total Quarters** (how many quarters have data), **Schools in DB** (total unique schools), **Research Records** (total research outputs), and **Upload Operations** (count of upload batches in the audit log).

10.2 Quarter snapshots

The Quarter Snapshots table lists every quarter with data, showing the school count, average RCSI, milestone distribution (M0–M6), and a **CSV export button** per quarter. Click "CSV" to download that quarter's raw survey data as a file in the exact quarterly_survey_data.csv format. This is useful for sharing a single quarter's data with a school head or for external analysis.

10.3 Full research metadata export

A single button downloads **all** research records as one CSV file (research_metadata_full.csv). Use this for periodic backups or for importing into external systems. The file includes all 14 columns defined in Appendix A.

10.4 The upload audit log

The Upload Audit Log is a complete history of every upload operation, most recent first. Each row shows the timestamp, mode (Merge or Replace, color-coded), file name, detected type (survey/research), row count, inserted/updated/skipped counts, and status (success or failure). This audit trail is written to a dedicated database table on every upload and cannot be deleted from the UI—it provides a permanent record of all data changes for accountability.

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Chapter 11 — Upload Portal & Data Management

The Upload tab is the administrator's entry point. It accepts two file types—quarterly survey data and research metadata—in CSV or Excel format (.csv, .xlsx, .xls). The portal auto-detects the file type by inspecting the column headers, validates the schema, shows a preview, and only then commits the data to the database. The default commit mode is **Merge** (preserves historical data); a **Replace All** mode is available for full dataset refreshes. The portal handles simultaneous uploads safely using an upload mutex.

11.1 The upload workflow

Step 1 — Select files. Drag one or more files onto the drop zone, or click the zone to browse. You can upload both file types in a single operation. The portal accepts .csv, .xlsx, and .xls extensions. Each file's size is displayed next to its name.

Step 2 — Choose upload mode. After selecting files, an **Upload Mode** toggle appears with two options: **Merge (recommended)** or **Replace All**. Merge adds new rows and updates existing ones by their natural key (school+quarter for surveys, teacher+title+year for research)—previous quarters' data is preserved. Replace wipes all existing data before inserting—use only for full dataset refreshes.

Step 3 — Validate. Click the **Validate** button. The portal reads each file, detects whether it is a survey or research file based on its columns, checks that all required columns are present, and shows a preview of the first five rows. Each file gets a badge: "Clean" (green) if no errors, or "N errors" (red) with a list of missing columns or other issues. The **Merge to Database** (or **Replace Database**) button remains disabled until all files are clean.

Step 4 — Commit. Once all files pass validation, click **Merge to Database** (or **Replace Database**). In Merge mode, the system upserts each row—new rows are inserted, existing rows (matched by natural key) are updated, and all other data is preserved. After the commit completes, a success alert shows how many rows were inserted, updated, and skipped (duplicates), and every dashboard tile refreshes automatically with historical data intact.

> **Concurrency safety**
>
> **Simultaneous uploads are handled safely.** If two schools upload at the same time, the first upload proceeds normally and the second receives a friendly "Another upload is in progress" message with automatic retry (up to 3 times, 5 seconds apart). Each upload runs inside a database transaction, so it is atomic—either all rows commit or none do. No data is lost or corrupted.

11.2 File format requirements

The portal expects two file formats. The **quarterly survey data** file has 10 columns: month, school_id_no, school_name, R, A, C, S, I, P, M. The **research metadata** file has 14 columns: upload_date, teacher_name, school_id_no, document_type, title, theme, status, publication_link, utilized_by_school, utilization_date, year_undertaken, years_of_service, teacher_rank, educational_attainment. See **Appendix A** for the complete data dictionary with types, allowed values, and examples for every column.

11.3 How school IDs are resolved

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The dashboard uses a canonical school ID derived from the **school_name** column's numeric suffix (e.g., "School_1" → ID 1, "School_30" → ID 30). The Survey tab's school dropdown is pre-populated with the 24 real El Salvador Division schools and their official DepEd IDs (e.g., 127667 = Amoros ES, 304787 = El Salvador City National High School). When you select a school from the dropdown, its real DepEd ID is written to the CSV's school_id_no column. **If you rename a school in the upload file, the dashboard will treat it as a new school**—keep the School_N naming convention for backward compatibility.

11.4 Automatic year/quarter rollover

The Survey tab's quarter dropdown is dynamically generated based on today's date. It shows all 4 quarters of the current year (labeled "Q1 (January) 2026 · Current", etc.) and all 4 quarters of the previous year (for back-filling). The current quarter is auto-selected: in January–March it selects Q1, in April–June Q2, in July–September Q3, and in October–December Q4. **When a new year arrives, the form automatically rolls over**—no manual update is needed. On the Upload tab, the header's quarter selector shows all quarters that have data in the database.

11.5 Common validation errors

Error	Cause	Fix
Missing required column: X	A required column is not in the file. The portal lists the exact column name.	Open the file in Excel, add the missing column with the correct values, save, and re-upload.
File has no data rows	The file has headers but no data, or is completely empty.	Populate the file with at least one data row.
Unsupported file type	The file extension is not .csv, .xlsx, or .xls.	Re-save the file in one of the supported formats. CSV is the most reliable.
detectedKind: unknown	The file's columns do not match either the survey or the research schema closely enough.	Check the column headers against Appendix A. Even a small typo (e.g., "shool_id_no") will cause detection to fail.

Table 11.1 — Common upload validation errors and their fixes.

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Appendix A — Data Dictionary

This appendix defines every column in the two upload file formats. Use it as a reference when preparing files for upload or when investigating data quality issues. All columns are required unless marked optional.

A.1 quarterly_survey_data

Column	Type	Example	Notes
`month`	string (YYYY-MM)	`2026-01`	The quarter this survey row covers. Use 01 (Q1), 04 (Q2), 07 (Q3), or 10 (Q4) as the month.
`school_id_no`	integer	`127947`	The school's official ID number. Note: the dashboard derives the canonical ID from school_name's suffix, so this column's value is informational only — see §8.3.
`school_name`	string	`School_1`	Must follow the School_N naming convention. The N suffix becomes the canonical school ID used throughout the dashboard.
`R`	decimal [0, 1]	`0.333279`	Readiness sub-index. Computed from the quarterly survey.
`A`	decimal [0, 1]	`0.567994`	Awareness sub-index. The M0→M1 threshold is A ≥ 0.80.
`C`	decimal [0, 1]	`0.328972`	Capacity sub-index.
`S`	decimal [0, 1]	`0.253977`	Structured Support sub-index.
`I`	decimal [0, 1]	`0.114062`	Institutional Anchoring sub-index.
`P`	decimal [0, 1]	`0.153476`	Community of Practice sub-index.
`M`	decimal [0, 1]	`0.006462`	Impact Realization sub-index.

Table A.1 — quarterly_survey_data column dictionary (10 columns).

A.2 research_metadata

Column	Type	Example	Notes
`upload_date`	string (YYYY-MM-DD)	`2026-12-18`	The date this research record was uploaded to the system.
`teacher_name`	string	`Carlos Santos`	Full name of the teacher who produced the research.
`school_id_no`	integer	`21`	The school ID. Must match the School_N suffix used in the survey file for the school to appear in both views.
`document_type`	enum	`abstract`	One of: *abstract* or *full_paper*.
`title`	string	`Research on Student Engagement 1`	The title of the research output.

Column	Type	Example	Notes
`theme`	enum	`Teaching Strategies`	One of: Assessment & Evaluation, Leadership & Governance, Learner Engagement & Well-being, Others, Professional Development, Teaching Strategies, Technology Integration.
`status`	enum	`draft`	One of: draft, under_review, submitted, published, rejected.
`publication_link`	string (URL, optional)	`https://doi.org/...`	The DOI or URL of the published research. Leave empty if not yet published.
`utilized_by_school`	boolean	`True`	Whether the research has been utilized by a school. Case-insensitive: "True" or "False".
`utilization_date`	string (YYYY-MM-DD, optional)	`2026-12-18`	The date the research was utilized. Leave empty if not yet utilized.
`year_undertaken`	integer	`2023`	The year the research was undertaken (started).
`years_of_service`	integer	`18`	The teacher's total years of service at the time of the research.
`teacher_rank`	enum	`Teacher III`	One of: Teacher I, Teacher II, Teacher III, Master Teacher I, Master Teacher II, School Head.
`educational_attainment`	enum	`Bachelor's`	One of: Bachelor's, Master's, Doctorate.

Table A.2 — research_metadata column dictionary (14 columns).

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Appendix B — FAQ & Troubleshooting

This appendix answers the questions that come up most often when using the dashboard. If you encounter an issue not covered here, check the Executive Brief on the relevant tab first — it is designed to explain what the charts mean and what to do next.

B.1 Frequently asked questions

Q1. Why are all 30 schools at M0 in the current dataset?

Because the Awareness (A) sub-index — the gatekeeper from M0 to M1 — averages only 0.53 across the division, well below the 0.80 threshold. No school has A ≥ 0.80 in the latest quarter, so no school can advance past M0. This is the single most important finding in the current data: the division's binding constraint is Awareness, not Capacity or Support. An awareness campaign (seminars, research orientation for teachers and school heads) is the highest-leverage intervention available.

Q2. Why does the milestone not advance when RCSI improves?

Because the RCSI is a continuous average of all seven dimensions, while the milestone is a discrete threshold-based stage. Improving a dimension whose threshold is already met (e.g., boosting R when the school is at M0 and the next threshold is A ≥ 0.80) raises the RCSI but does not advance the milestone. The Twin Sandbox narrative explicitly distinguishes these cases — see Table 6.1.

Q3. What happens if I upload a file with missing columns?

The Validate button will flag the file with a red "N errors" badge and list the missing columns. The Commit button stays disabled until all files are clean. See Table 11.1 for the full list of common errors.

Q4. Does uploading new data erase previous quarters?

No — not in the default Merge mode. Merge upserts rows by their natural key (school+quarter for surveys, teacher+title+year for research), so uploading Q2 preserves Q1. Only the explicit "Replace All" mode wipes the database first. Always use Merge (the default) unless you need a full dataset refresh.

Q5. Can I undo a commit?

No — commits are irreversible. However, in Merge mode, uploading corrected data will update the existing rows (not erase them). In Replace mode, always keep a backup of the previous data. The Archive tab's audit log records every upload operation for traceability, and you can export any quarter's raw data from the Archive tab's Quarter Snapshots table.

Q6. What happens if two schools upload at the same time?

The system handles this safely using an upload mutex. The first upload proceeds normally; the second receives a "Another upload is in progress" message and automatically retries up to 3 times with a 5-second delay. Each upload runs in a database transaction, so no data is lost or corrupted. See §11.1.

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Q7. How are school IDs derived?

The Survey tab's school dropdown is pre-populated with the 24 real El Salvador Division schools and their official DepEd IDs (e.g., 127667 = Amoros ES, 304787 = El Salvador City National High School). When you select a school, its real DepEd ID is written to the CSV. For backward compatibility with existing data, the dashboard also derives a canonical ID from the school_name suffix (e.g., "School_1" → ID 1). See §11.3 for details.

Q8. Will the quarter dropdown auto-update when a new year arrives?

Yes. The Survey tab dynamically generates quarters based on today's date. It shows all 4 quarters of the current year (with the current quarter labeled "· Current") and all 4 quarters of the previous year. When January 2027 arrives, the form automatically shows "Q1 (January) 2027 · Current". See §11.4.

Q9. How does the Top 10 Teacher-Researchers ranking work?

The Research tab ranks all teachers by their total number of research outputs in the database. The top 10 are displayed in a recognition table with gold/silver/bronze medals for the top 3. Each row shows the teacher's name, output count, rank, educational attainment, years of service, years undertaken, and themes covered. This gives public recognition to the division's research leaders.

Q10. How does the auto-theme detection work in the Research Metadata form?

As you type the research title, the system scans it against 60+ keywords across 6 themes and suggests the most likely theme. A violet "Auto-detected" badge appears with the confidence level (Strong / Likely / Possible) and matched keywords. If you manually change the theme, an amber "Manual override" badge appears and auto-detection pauses until you edit the title again. See §8.2.

Q11. What is the difference between Policy Levers and the Intervention tab?

Policy Levers are decision-maker-friendly inputs (Training Frequency, Mentorship Ratio, etc.) that map to dimension deltas automatically. The Intervention tab lets you set raw dimension deltas directly. Adjusting a Policy Lever syncs the Intervention sliders; manually editing an Intervention slider overrides the levers (a warning badge appears).

Q12. Can I change the RCSI weights or milestone thresholds?

Yes — in the Twin Sandbox only. The Weights sub-tab lets you override the default 12.5% equal weights (they auto-normalize to sum to 1). The Thresholds sub-tab lets you override the default milestone thresholds (A ≥ 0.80, others ≥ 0.50). These overrides affect only the Twin Sandbox simulation — the production dashboard always uses the defaults.

Q13. What does "sustainable" mean?

A school is flagged as sustainable when it reaches M6 *and* its composite RCSI is ≥ 0.70. In the milestone model, sustainability means the school cycles back to M0 for the next iteration — a self-sustaining research culture that no longer requires external push.

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Q14. Why does the Twin Sandbox narrative change color?

The narrative tone (green/amber/red/blue) reflects the simulation outcome. Green = milestone advanced; amber = RCSI improved but milestone did not; red = milestone regressed; blue = no change yet. See Table 6.1 for the full state map.

Q15. How do I download a PDF report for a meeting?

Each of the four main sandboxes (Overview, Schools, Research, Twin Sandbox) has a "Download PDF" button next to its Executive Brief. The PDF includes the narrative, key data tables, and the Copyright 2026 footer. The Twin Sandbox PDF captures the current simulation state — adjust the sliders first, then download.

Q16. How often should I upload new data?

The survey file is quarterly — upload it once per quarter, after the survey closes. The research metadata file can be uploaded more frequently (e.g., monthly) as new research records are added. Always validate before committing. Use Merge mode (the default) to preserve historical data.

B.2 Glossary

Term	Definition
RCSI	Research Culture Sustainability Index. The composite score (0–1) formed by averaging the seven sub-indices.
Sub-index	One of the seven dimensions: R, A, C, S, I, P, M. Each ranges from 0 to 1.
Milestone	A discrete stage (M0–M6) on the research-culture progression ladder. Based on threshold crossings.
Threshold	The minimum sub-index value required to advance to the next milestone. Default: A ≥ 0.80 for M0→M1; 0.50 for others.
Sustainable	A school at M6 with RCSI ≥ 0.70. The long-term goal for every school.
Delta	An additive change to a sub-index value, used in the Twin Sandbox. Range: −0.30 to +0.30.
Twin	A virtual copy of a school's seven-dimension profile that you can experiment on in the Twin Sandbox.
Policy lever	A decision-maker-friendly input (Training Frequency, Mentorship Ratio, etc.) that maps to dimension deltas.
Baseline	The status-quo value for a policy lever. Moving a lever above baseline produces positive deltas; below produces negative.
Sparkline	A small inline line chart showing a school's RCSI trend over the available quarters.
Executive Brief	The auto-generated narrative at the top of each tab that interprets the charts in milestone terms and recommends an intervention.

Table B.1 — Glossary of key terms.

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