GPSD Water Recovery Use Table & 3-Year Cost-Gain Projection

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Water Output Classifications (Post-GPSD Stage 2)

Input Source	Output Profile	Suggested Use Cases
Seawater	Clearer, still salty	Pre-treatment for RO or solar stills
Brackish runoff	Reduced solids, light salt	Drip irrigation, salt-tolerant crops
Floodwater	Odor-free, partially sterilized	Livestock cleaning, greywater reuse
Agricultural runoff	Reduced turbidity & pathogens	Return to fields, washwater for tools

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"Tamed Water" Category

This refers to **filtered, biologically safer water** not yet potable, but suitable for: - Controlled irrigation - Soil moisture recharge - Evaporation-to-recovery staging - Final RO entry stage (less wear on membranes)

Brine Residue Management

Post-GPSD brine is: - Lower in suspended solids - Slower to clog in salt pans - Suitable for: - Halophyte irrigation - Salt recovery beds - Greywater re-processing loop

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3-Year Cost-Gain Projection (1 Standard Unit)

Item	Cost Estimate (€)	Notes
Initial Setup (GPSD Core + Stage 2)	€1,800–€2,500	Includes funnel column + biochar blend
Maintenance (sand, top skims)	€150–€300/year	Quarterly top layer change, yearly flush

| Biochar/Refill or GAC (if used) | €100–€200/year | Based on usage, locally sourced
| Minor repairs/screen/overflow | €50/year | Typical upkeep

3-Year Total Cost: ~€2,400 – €3,800 (max)

3-Year Water Output (Estimated, 1m² Unit)

| Scenario | Daily Output | 3-Year Output | Value Equivalent* |
|---|---|---|---| | Gravity passive (avg.) | ~1,500 liters | ~1.64 million L | €3,000–€5,000 in bottled water equivalency
| Pressure-enhanced | ~2,500 liters | ~2.73 million L | €5,000–€8,000 (in greywater/irrigation value)

*Assumes €1.50–€3.00 per 1,000L for agricultural or municipal reuse class water.

Net Outcome

| Metric | Value | |---|---| | ROI (non-potable use) | ~2x–3x water value vs cost
| Maintenance load | Low (quarterly attention)
| Expandability | Modular, scalable by unit
| Long-term viability | High — materials locally available
| Environmental impact | Low waste, no fuel dependency

Summary

The GPSD system offers a **clean, ethical, low-cost path to high-volume tamed water production**, suitable for semi-industrial use, rural communities, and agricultural resilience. Over 3 years, even one system pays for itself in water returned to land or infrastructure bypassed.