

## Supplementary Materials

The domestic analytic corpus contains 58 Chinese cases, and six international cases are retained as sensitizing contrasts. Counts describe explicit design features in official documents and must not be interpreted as causal effects or verified outcomes.

Table S1. Corpus composition and analytical role

| <b>Batch</b> | <b>Domestic cases</b> | <b>Analytic role</b>                       | <b>Dominant repertoire</b>                                                    |
|--------------|-----------------------|--------------------------------------------|-------------------------------------------------------------------------------|
| 1            | 10                    | Initial category generation                | Restoration, ecological banks, land tickets, quota trading, compensation      |
| 2            | 9                     | Initial category generation and comparison | Ecological industry, restoration, compensation, carbon inclusion              |
| 3            | 8                     | Category refinement                        | Carbon, water funds, tourism, industry, international sensitizing concepts    |
| 4            | 10                    | Category refinement                        | National parks, land consolidation, collaborative and industrial arrangements |
| 5            | 10                    | Model extension                            | Full-chain carbon, multi-resource allocation, ecological parks                |
| 6            | 11                    | Saturation and portfolio extension         | Mine + land, land + forest, land + geothermal, wetland and cultural bundles   |

Table S2. Documentary triangulation of anchor cases

| <b>Anchor case</b>                | <b>Independent public record</b>                                                                   | <b>Design element cross-checked</b>                                                                | <b>Inference limit</b>                                                        |
|-----------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Futian mangrove blue carbon       | Shenzhen Municipal Planning and Natural Resources Bureau / Shenzhen Government transaction notices | Registration, carbon measurement, auction/transaction, and use of proceeds for mangrove protection | Institutional design and transaction occurrence; not long-term additionality. |
| Chongqing forest-coverage trading | National Forestry and Grassland Administration and Chongqing forestry reports                      | Binding targets, interjurisdictional transactions, and reported transaction scale                  | Program architecture and transaction records; not forest-quality impact.      |
| Luxian land + forest              | National Forestry and Grassland Administration case notice                                         | 715.5 mu forest rights + 12.3 mu construction-land-use rights bundled and transferred              | Bundle composition and platform transaction; not distributional outcomes.     |
| Lichuan mine + land               | Local natural-resource implementation and transaction documents                                    | Combined supply design and restoration-linked land allocation                                      | Policy and allocation design; not project effectiveness.                      |
| Jiujiang multi-resource supply    | Jiujiang municipal natural-resource disclosures                                                    | Multi-element natural-resource allocation and transaction package                                  | Existence and reported scale; not fiscal or ecological net benefits.          |
| Nanping forest ecological bank    | Nanping and national forestry reports                                                              | Rights aggregation, forest-ticket/platform, operational structure                                  | Institutional model; not household causal effects.                            |
| Qingshan Village water fund       | Hangzhou government/TNC-related public documentation                                               | Multi-actor trust/fund arrangement for water-source protection                                     | Governance arrangement; not verified ecological impact.                       |
| Dongzhou Island portfolio         | Hunan natural-resource transaction disclosures                                                     | Cross-departmental resource package and transaction structure                                      | Package design and reported transaction; not long-term outcomes.              |

Table S3. Discriminant coding protocol

| <b>Function</b>              | <b>Coding question</b>                                              | <b>Positive evidence</b>                                                                     | <b>Negative boundary</b>                                  |
|------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Institutional recognition    | What resource/right is made authoritative and governable?           | Rights clarification, registration, inventories, zoning, planning, boundary setting          | Do not code value estimates alone.                        |
| Value articulation           | How is ecological contribution represented and communicated?        | GEP, appraisal, carbon measurement, certificate, brand, traceability                         | Do not code rights clarification alone.                   |
| Governed market construction | How are demand and exchange conditions publicly constituted?        | Quota, platform, asset package, registry, eligibility and transaction rules                  | Do not code an isolated sale without public construction. |
| Collaborative mobilization   | Which actors supply implementation capacity?                        | Identifiable contributions from collectives, firms, experts, finance, NGOs, public platforms | Do not code a stakeholder list without a role.            |
| Public-value recirculation   | How is captured value linked to stewardship and collective benefit? | Benefit sharing, ecological reinvestment, employment, compensation, disclosure, monitoring   | Do not equate revenue with public value.                  |

Table S4. Representative evidence and coding chain

| ID     | Case                                               | Chinese evidence excerpt (abridged)                                                                                                                                                              | Concise English translation                                                                                                                                                                                 | Functions coded                                                                                                                     |
|--------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| B1-C02 | Nanping Forest Ecological Bank                     | 一是政府主导，设计和建立“森林生态银行”运行机制。按照“政府主导、农户参与、市场运作、企业主体”的原则，由顺昌县国有林场控股、8 个基层国有林场参股，成立福建省绿昌林业资源运营有限公司，注册资本金 3000 万元，作为顺昌“森林生态银行”的市场化运营主体。公司下设数据信息管理、资产评估收储等“两中心”和林木经营、托管、金融服务等“三公司”，前者提供数据和技术支撑，...       | A government-led, farmer-participatory, market-operated model established a state-controlled forestry operator with data, valuation, asset acquisition, forestry, trusteeship, and financial-service units. | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization, Public-value recirculation |
| B1-C04 | Chongqing Forest-Coverage Quota Trading            | 一是明确任务，分类划标。重庆市将全市 2022 年森林覆盖率达到目标值作为每个区县的统一考核目标，促使各区县政府由政府被动完成植树造林任务，转变为主动加强国土绿化工作，切实履行提高森林覆盖率的主体责任。同时，根据全市的自然条件和主体功能定位，将 38 个区县到 2022 年底的森林覆盖率目标划分为三类：产粮大县或菜油主产区（不包括国家重点生态功能区）的 9 个区县森林覆盖率目... | The municipality set differentiated 2022 forest-cover targets for 38 districts and counties, turning afforestation targets into jurisdictional obligations and demand for forest-coverage indicators.       | Institutional recognition, Value articulation, Governed market construction, Public-value recirculation                             |
| B1-C10 | Ezhou Ecological Value Accounting and Compensation | 按照价值实现的内在逻辑，鄂州市将生态价值工程分为四个环节：首先是自然资源调查与确权，摸清家底、夯实生态价值实现的基础；其次是生态价值计量，将自然生态系统提供的各类服务和贡献，统一计量为无差别的货币单位；再次是生态价值应用及实现，将价值计量的结果运用于各区之间的生态补偿；最后是开展考核，推动生态责任制度化。通过环环相扣的制度设计和试点探索，鄂州市在解决生态环境...          | The city linked resource inventory and rights confirmation, ecological valuation, interdistrict compensation, and performance assessment in a four-stage institutional design.                              | Institutional recognition, Value articulation, Collaborative mobilization, Public-value recirculation                               |
| B3-C02 | Azheke Village Ecotourism in Yuanyang, Yunnan      | 一是坚持人与自然和谐共生，筑牢自然生态和人文根基。千百年来，哈尼族根据生产生活实践，探索出了独特的土地利用方式，在哈尼梯田世界文化遗产区内形成了森林、                                                                                                                      | Hani land-use practices integrate forests, villages, terraces, and water systems into                                                                                                                       | Collaborative mobilization                                                                                                          |

| ID     | Case                                                            | Chinese evidence excerpt (abridged)                                                                                                                                                           | Concise English translation                                                                                                                                                                  | Functions coded                                                                                                                     |
|--------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|        |                                                                 | 村寨、梯田、水系“四素同构”的自然生态循环系统：山顶的森林涵养水源，汇成溪流、泉水流入沟渠，为山腰的村寨生活用水和村寨下方的梯田灌溉提供水源；山顶与山脚有近 2 千米的海拔差，山底的河流因高温蒸发产生的大量水蒸气，...                                                                                | a coupled ecological cycle supporting livelihoods, irrigation, and landscape conservation.                                                                                                   |                                                                                                                                     |
| B3-C03 | Qingshan Water Fund in Hangzhou, Zhejiang                       | 一是组建“善水基金”信托，建立多方参与、可持续的生态补偿机制。2015 年，TNC 联合万向信托等合作伙伴，组建了“善水基金”信托并获得 33 万元的资金捐赠，用于支持青山村水源地保护、绿色产业发展等，第一个信托期为 2016—2021 年。借鉴国际上成熟的水基金（Water Fund）运行模式，“善水基金”信托建立了由各利益相关方参与的运行结构和可持续的生态补偿机制（... | TNC, Wanxiang Trust, and partners created a stakeholder-governed trust fund financing watershed protection and green development through a sustainable multi-actor compensation arrangement. | Governed market construction, Collaborative mobilization, Public-value recirculation                                                |
| B4-C01 | Xixi Wetland Restoration and Land Reserve in Hangzhou, Zhejiang | 西溪湿地片区通过持续的湿地修复和生态管护，形成了包括湿地、水体、林草等在内的自然资源资产综合体，具有丰富的生态效益、景观价值和文化属性，以及显著的正外部性。杭州市通过授权西溪湿地运营管理有限公司开展生态旅游等经营活动，促进了周边土地增值和产业升级发展，实现了西溪湿地的生态价值外溢，带动了整个城市的品质提升，是外溢共享型路径的典型做法。...                   | Wetland restoration and stewardship created an integrated natural-asset base; an authorized operator developed ecotourism and generated spillovers to surrounding land and industries.       | Institutional recognition, Collaborative mobilization                                                                               |
| B4-C04 | Wuyishan National Park in Nanping, Fujian                       | 武夷山国家公园充分利用优质的自然资源本底条件，实现生态产品的增值溢价。通过实施生态保护补偿项目，对武夷山国家公园范围内生态公益林、商品林的林权所有者进行补偿。国家公园管理局与竹农签订地役权管理合同，在保持林地、林木权属不变的前提下，获得毛竹林的经营管理权；竹农在获得生态补偿资金的同时，承担森林资源共管与保护义务。同时，鼓励社会资本参与公园产业项目经营，积极探...       | Ecological compensation, easement contracts with bamboo farmers, co-management obligations, and private investment were combined while underlying forest ownership remained unchanged.       | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization, Public-value recirculation |

| ID     | Case                                                      | Chinese evidence excerpt (abridged)                                                                                                                                                            | Concise English translation                                                                                                                                                                                         | Functions coded                                                                                                                     |
|--------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| B4-C08 | Liubao Tea Industry in Wuzhou, Guangxi                    | 梧州市按照“龙头企业+合作社+农户”和“企业+集体经济+大户”等模式，积极引导村集体经济组织、农户、林场等产权主体，通过转包、转让、出租、入股等多种形式开展土地经营权流转，推动六堡茶园的规模种植和经营，夯实生态产品价值实现的产权基础。同时，梧州市在国土空间规划中合理安排和预留用地指标，为六堡茶种植、茶旅融合等产业发展提供用地保障，充分发挥了自然资源管理政策对...        | Land-use rights were consolidated through transfers, leases, and equity participation among collectives, farmers, and forest farms, while spatial planning reserved land for tea and tourism development.           | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization                             |
| B5-C01 | Multi-resource Bundled Supply in Jiujiang, Jiangxi        | 2022 年 12 月，九江市选取八里湖等六宗全民所有自然资源资产，作为江西省首单整体出让标的物进行公开出让，竞拍企业以 28.73 亿元竞得其 15 年经营使用权，探索了整体收储、设权赋能、整体评估、整体配置、收益共享、多元共治的自然资源资产价值实现新路径，促进了资源的高效配置、资产的保值增值、资金的共享分配和资源的保护修复，实现“资源变资产、资产变资本、资本变资金、资... | Six publicly owned natural-resource assets were bundled and auctioned for 15-year operating rights, integrating rights creation, valuation, allocation, benefit sharing, collaborative governance, and restoration. | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization, Public-value recirculation |
| B5-C02 | Futian Mangrove Carbon Transaction in Shenzhen, Guangdong | 一是推进自然资源调查监测和碳汇产品登记。摸清碳汇底数。基于无人机摄影、倾斜摄影测量等提供的高精度地图和空间数据支持，利用高光谱遥感反演和激光雷达技术，连续 10 年开展生物多样性保护调查监测，同步采用数字孪生技术搭建红树林碳汇三维仿真可视化系统，实现碳汇产品全方位、多角度的可视化呈现，为后续开发交易提供数智化支撑。明晰碳汇登记路径。构建自然资源统确权登记标准、方...      | Long-term biodiversity monitoring, remote sensing, LiDAR, and digital-twin tools were used to quantify, visualize, and register mangrove carbon assets for subsequent market development and trading.               | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization, Public-value recirculation |
| B5-C04 | Yakeshi Wetland Concession in Inner Mongolia              | 一是推动特许经营，赋能湿地资源资产。免渡河国家湿地公园优良的自然资源和极具代表性的低温环境，十分契合汽车高寒测试对自然条件的严格要求。近年来，牙克石市                                                                                                                    | A 323-ha wetland and lake area was allocated through concession arrangements for                                                                                                                                    | Collaborative mobilization                                                                                                          |

| ID     | Case                                                       | Chinese evidence excerpt (abridged)                                                                                                                                                         | Concise English translation                                                                                                                                                            | Functions coded                                                                                                                     |
|--------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|        |                                                            | 抢抓国内冬季汽车测试产业契机，创新湿地资源资产配置方式，利用 323 公顷湖面和湿地资源，发展冬季汽车测试产业及衍生产业，发挥“湿地+”模式倍增效应。设置租赁特许经营权，牙克石市政府作为授权主体，与国际知名的汽车测...                                                                              | winter vehicle testing, linking wetland-resource use with a specialized industrial model.                                                                                              |                                                                                                                                     |
| B5-C08 | Liuba County Ecological Planning in Hanzhong, Shaanxi      | 一是坚持规划引领，落实生态保护。科学编制国土空间总体规划。发挥国土空间规划的战略引领与刚性管控作用，编制《留坝县国土空间总体规划(2021—2035 年)》，合理配置区域资源要素。从严划定生态保护红线，将自然保护区、饮用水源地等生态敏感区纳入生态保护红线范围内，划定生态保护红线面积 219.65 万亩，占全县国土总面积的 74.83%。科学划定城镇开发边界，在城镇规... | Territorial spatial planning and strict ecological red lines were used to allocate resources and protect sensitive areas; 74.83% of the county was placed within ecological red lines. | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization                             |
| B6-C01 | Lichuan “Mineral + Land” Bundled Supply in Fuzhou, Jiangxi | 一是统筹谋划，确定总体工作思路。黎川县创新开展《基于矿产资源储备的自然资源整体配置研究》，在此基础上，江西省自然资源厅与黎川县政府研究确定了“协同推进、整体配置、联合出让、高效赋能”的组合供应总体思路。协同推进方面，由江西省自然资源厅协同黎川县政府共同推进资产组合供应工作，积极对接用地、采矿权审批流程，解决组合供应难点堵点问题；整体配置方面，将矿泉水采矿权与...     | Provincial and county authorities coordinated land-use and mining approvals under a joint supply model integrating asset planning, bundled allocation, and unified transfer.           | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization, Public-value recirculation |
| B6-C02 | Xuan'en Multi-resource Asset Package in Enshi, Hubei       | 湖北省宣恩县依托良好的自然资源禀赋和自身旅游发展本底，围绕贡水河和地热资源，坚持以国土空间规划为统领，积极探索多门类自然资源资产组合供应的实践路径。2025 年 4 月，宣恩县“浪漫温泉城”项目自然资源资产包以 1.602 亿元成功竞拍，通过资源整合、制度创新与整体评估，探索实践了区域统筹、多权融合的自然资源资产整                              | River and geothermal resources were integrated through spatial planning, institutional innovation, and joint valuation; the bundled asset package was auctioned for RMB 160.2 million. | Institutional recognition, Value articulation, Governed market construction, Public-value recirculation                             |

| ID     | Case                                                  | Chinese evidence excerpt (abridged)                                                                                                                                                            | Concise English translation                                                                                                                                                       | Functions coded                                                                                                                     |
|--------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|        |                                                       | 体配置模式，实现了生态保护与产业发展的“双向奔赴”。...                                                                                                                                                                  |                                                                                                                                                                                   |                                                                                                                                     |
| B6-C04 | Dongzhou Island Resource Portfolio in Hengyang, Hunan | 一是资产清查，摸底建册。针对自然资源资产“底数不清、产权不明”等问题，开展了以土地和矿产资源为重点，林、草、湿、水为补充的自然资源资产清查，摸清区域内自然资源资产的数量、质量、分布、权属、保护和开发利用状况；编制了市级自然资源资产清单，开展全民所有自然资源资产确权登记，加快形成自然资源资产权益管理“一张图”，明晰家底“有什么、有多少、在哪里”。以此为基础，精...        | A citywide inventory mapped land, minerals, forests, grasslands, wetlands, and water, followed by public-asset rights registration and an integrated resource-rights map.         | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization, Public-value recirculation |
| B6-C05 | Luxian “Land + Forest” Package in Luzhou, Sichuan     | 2024 年，泸州市统筹推进建设用地、林地等多要素自然资源资产组合供应，选取丘陵地貌显著的泸县石桥镇开展试点，聚焦区域内林地资源多、坡耕地多、低效用地多，产业用地少、经济收益少、连片资源少的“三多三少”特征，将 715.5 亩集体林地经营权与 12.3 亩集体经营性建设用地使用权（原为工矿废弃地）打包，形成 727.8 亩的“土地+森林”资源资产组合供应包，通过农村产权交... | A total of 715.5 mu of collective forest operating rights and 12.3 mu of collective construction-land rights were bundled into a 727.8-mu package for unified transaction.        | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization, Public-value recirculation |
| B6-C06 | Mile “Land + Geothermal” Package in Honghe, Yunnan    | 2025 年 6 月，红河州弥勒市选定东风韵艺术小镇“国有建设用地使用权+地热水开采权”组合形成资产包，结合实际采取“一盘棋谋划、一股绳协同、一本账清算、一次性发布、一平台交易、一主体成交”的“六个一”模式，解决不同门类资源的配置权限不同、出让收益比例难以分配、不同资源的权责差异等问题，实行整体挂牌出让，最终竞拍企业以 228.6 万元成功摘牌，获得国有建设用地 40 年... | State-owned construction-land rights and geothermal extraction rights were combined under a “six-in-one” coordination and trading model and transferred through a single listing. | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization                             |
| B6-C08 | Red Beach Wetland in Panjin, Liaoning                 | 一是探索委托经营方式，提升生态系统服务功能。盘锦市“红海滩国家风景廊道”于 2010 年 9 月经盘锦市委、市政府批准设立，区域规划面积 239 平方公里，采用市委、市                                                                                                           | A municipal management committee governed the 239-km <sup>2</sup> wetland scenic corridor and                                                                                     | Institutional recognition, Value articulation,                                                                                      |

| ID     | Case                                                                     | Chinese evidence excerpt (abridged)                                                                                                                                                     | Concise English translation                                                                                                                                                                  | Functions coded                                                                                         |
|--------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|        |                                                                          | 政府派出机构盘锦红海滩湿地旅游度假区管理委员会（以下简称红海滩管委会）行使市级政府经济管理模式。为推进产业化转型，提升自然资源资产价值显化，2013 年红海滩管委会及大洼区人民政府以协议方式委托盘锦市文旅集...                                                                              | later delegated operations to a cultural-tourism enterprise to commercialize ecosystem-service assets.                                                                                       | Collaborative mobilization                                                                              |
| B6-C09 | Yunhe Terraces Production-Living-Ecology Integration in Lishui, Zhejiang | 一是统筹实施“四个统一”，实现生态产品价值蝶变。实施统一规划，因地制宜选育生态产品。云和县在坚持保护优先的前提下，按照多规合一的要求，将湿地公园规划与景区规划的功能分区相融合，保障了通景公路、游客咨询服务、旅游停车场等功能区和项目的开发建设空间，并结合景区生产生活需要，预留部分弹性规划空间。在规划引领下，围绕“赏花胜地”和“避暑胜地”两个优势，着力打造稻米景... | Unified planning integrated wetland-park and scenic-area zoning, protected ecological functions, reserved development space, and supported agriculture-tourism products.                     | Institutional recognition, Value articulation, Governed market construction, Collaborative mobilization |
| B6-C10 | Shibalianwei Wetland Restoration in Hefei, Anhui                         | 一是坚持规划引领，统揽城市之肾建设。加强顶层设计，高效编制规划。以湿地保护与发展规划为基础，编制湿地公园发展规划、环巢湖湿地公园群总体规划等“1+N”规划体系，系统谋划了湿地群空间布局、生态廊道建设、水质净化工程等关键内容，勾勒出每个湿地的建设规模、核心生态功能区划分、生物多样性保护措施等建设蓝图。完善工作机制，实施分级管理。成立巢湖生态示范区领导小组，建立... | A “1+N” planning system coordinated wetland spatial layout, ecological corridors, water purification, biodiversity protection, and tiered governance under a dedicated leadership mechanism. | Institutional recognition, Public-value recirculation                                                   |

Note: Coded only where the excerpt or instrument description provides explicit design evidence; no outcome causality inferred.

Table S5. Coding quality, consensus audit, and claim calibration

| <b>Audit component</b>                        | <b>Revision procedure</b>                                                                                                                                                                                                                                                                                                                                 | <b>What it establishes</b>                                   |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Complete feature matrix                       | All 58 domestic cases recoded using explicit binary criteria; international cases flagged separately.                                                                                                                                                                                                                                                     | Traceability of documentary occurrence.                      |
| Independent double coding and consensus audit | Two researchers independently coded a common subsample using the finalized scheme; overall Cohen's $\kappa = 0.80$ and Krippendorff's $\alpha = 0.82$ , with category-specific coefficients of $\kappa = 0.77\text{--}0.82$ and $\alpha = 0.79\text{--}0.83$ . Remaining disagreements were resolved by consensus against explicit definitions and memos. | Inter-coder consistency and transparent adjudication.        |
| Translation protocol                          | Chinese excerpts preserved; English translations prioritize governance meaning and retain uncertainty.                                                                                                                                                                                                                                                    | Cross-language auditability.                                 |
| Documentary triangulation                     | Separate public records checked for eight anchor arrangements.                                                                                                                                                                                                                                                                                            | Existence and institutional design of selected arrangements. |
| Negative-case/risk log                        | Commodification, elite capture, measurement reductionism, fiscal risk, and accountability diffusion recorded.                                                                                                                                                                                                                                             | Prevents uncritical success-story theory.                    |

Table S6. Distribution by descriptive case type

| <b>Case type</b>               | <b>n</b> | <b>Recognition</b> | <b>Articulation</b> | <b>Market construction</b> | <b>Mobilization</b> | <b>Recirculation</b> |
|--------------------------------|----------|--------------------|---------------------|----------------------------|---------------------|----------------------|
| Multi-resource/territorial     | 24       | 20                 | 15                  | 12                         | 16                  | 4                    |
| Water/wetland/coastal          | 18       | 14                 | 10                  | 7                          | 13                  | 7                    |
| Land/mineral restoration       | 5        | 4                  | 1                   | 4                          | 3                   | 3                    |
| Forest/carbon                  | 6        | 6                  | 6                   | 6                          | 4                   | 4                    |
| Agriculture/cultural landscape | 4        | 3                  | 2                   | 3                          | 3                   | 1                    |
| Protected area/other           | 1        | 1                  | 1                   | 1                          | 1                   | 1                    |

Table S7. Rival explanations and observable implications

| <b>Rival explanation</b> | <b>What it explains</b>                                                | <b>Why insufficient for the full pattern</b>                                                                     | <b>Evidence needed in future research</b>                                   |
|--------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Pure marketization       | Trading, pricing, auctions, carbon and quota exchange.                 | Many exchanges appear only after public definition of rights, demand, platforms, and ecological obligations.     | Contracts, price formation, entry/exit, and counterfactual market evidence. |
| PES expansion            | Compensation and upstream–downstream transfers.                        | Does not cover resource bundling, platform governance, ecological industry, and land-based portfolio allocation. | Comparative analysis of transfer and non-transfer cases.                    |
| Local developmentalism   | Tourism, land-value uplift, visible investment, and growth incentives. | Under-specifies cases with benefit-sharing and ecological conditions, but remains a serious risk.                | Fiscal incidence, debt, displacement, and bargaining data.                  |
| Ecological modernization | Institutional innovation and protection–development narratives.        | Under-specifies property-right design and distributional accountability.                                         | Independent ecological monitoring and distributional outcomes.              |

Table S8. Policy instrument functions and failure risks

| <b>Instrument family</b>     | <b>Primary governance function</b>     | <b>Representative practices</b>                                  | <b>Failure risk if isolated</b>                        |
|------------------------------|----------------------------------------|------------------------------------------------------------------|--------------------------------------------------------|
| Regulatory                   | Recognition and bounded demand         | Ecological red lines, zoning, quotas, land-use controls          | Rigid compliance or development displacement.          |
| Informational                | Value articulation                     | GEP, carbon measurement, appraisals, certification, traceability | Symbolic valuation and reductionism.                   |
| Fiscal/financial             | Compensation and risk absorption       | Transfers, guarantees, water funds, green credit                 | Fiscal dependence, debt, and weak conditionality.      |
| Market                       | Exchange and investment                | Carbon trades, forest tickets, asset packages, platforms         | Speculation, commodification, and rent capture.        |
| Organizational/collaborative | Capacity mobilization                  | Collectives, SOEs, firms, universities, NGOs                     | Diffused accountability and weak community bargaining. |
| Accountability               | Ecological and distributive safeguards | Monitoring, disclosure, benefit sharing, reinvestment            | Value extraction without public value.                 |