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Wye-Usk Transition Lab

This is one of 15 case studies informing the Infrastructure Systems Review.

System: Wye-Usk – socio-ecological and economic.

Systems contribution and value: Shared diagnosis, convening and trust-building developed common priorities for project, finance and governance development. Strengthened collaboration and developed a pipeline of potentially investable landscape-scale interventions.

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Summary

Rural economies across England and Wales are chronically underperforming. In landscapes like the Welsh Marches, Gross Value Added (GVA) per head is 65-70% of the UK average.[1]

- Agricultural value is extracted rather than retained locally.
- Producers are confined to low-margin commodity markets.
- Natural capital is depreciating.
- Fragmented top-down governance prevents regionally coordinated management and investment needed to reverse these trends.

Isolated, sector-specific interventions repeatedly fail to address the structural causes of this underperformance.

Focus
Wye-Usk Transition Lab offers a replicable model for rural economic development. A transition lab builds strong relationships, which are foundational to economic wellbeing. It convenes farmers, businesses, communities, public bodies and investors around a shared, bottom-up understanding of systemic challenges. A coordinated programme of mutually reinforcing interventions is emerging across five priorities: profitable and resilient farming; landscape restoration; locally owned renewable energy; population health and wellbeing; and landscape finance and governance frameworks.

Value
The lab demonstrates that devolved, coordinated, place-based investment can simultaneously address market failures across multiple capital types (financial, natural, human, social, manufactured, intellectual). Siloed approaches leave such failures unresolved. Its aim is to produce a coherent, investible programme from fragmented initiatives.

Alignment with UK national priorities
The lab's approach directly supports the government's missions on clean energy, nature recovery and economic growth, alongside the Land Use Framework, the Environmental Improvement Plan 2025, Defra's £2.7 billion land management schemes, and the Seventh Carbon Budget's emphasis on nature-based solutions. It generates quantifiable economic returns.

Scope

The rivers Wye and Usk are special areas of conservation. Home to around 400,000 people, they drain catchments of 4,136km^2 and 1,160km^2 respectively. While the Usk passes through Newport's urban centre, the region is mostly rural, with the lower, flatter lands supporting mixed farming, and hill farms in the upper reaches.

The Wye and Usk landscapes face:

- ecological degradation: polluted rivers, degraded soil, and flood/drought pressures
- extraction of economic value and equity
- low farm incomes with high input costs
- inadequate infrastructure and transport

Many feel fatigued by repeated attempts to meet national and regional goals that do not align with their values and interests. They live with the poverty produced by multiple deprivations which maintain a malfunctioning system.

- weak market access
- rural isolation
- a food-energy-poverty-wellbeing nexus antithetical to good health.

People in the region have little fiscal decisionmaking power and operate in silos, locking in practices that embed and worsen negative outcomes. Mistrust between stakeholders supresses local development.

Treating these landscapes as a single socio-ecological and economic system, not a set of isolated sites, Wye-Usk Transition Lab is developing a new approach to rural economic development. It works across five interconnected themes defined by stakeholders: nature-based flood and water management; food, farming and local value chains; transport and renewable energy; health and wellbeing; finance and governance.

The lab uses a methodology co-developed with University College London's Climate Action Unit, and supports stakeholders to work collectively. Over three years, 200+ participants have taken part, including farmers, unions, environmental and health bodies, regulators, local and national government, community projects, and financial institutions.

Providing the coordination capacity the market cannot, the lab aligns stakeholders, governance and investors, aggregating fragmented local initiatives into a coherent programme to raise GVA and retain economic value.

Outcomes

Persistent rural poverty and economic underperformance in the Wye-Usk region follow a self-reinforcing cycle. Without a systemic approach to long-term outcomes that accounts for local conditions and fiscal realities, this underperformance cannot shift.

When stakeholders enter a transition lab to discuss ways to break this cycle, they often feel sceptical of further interventions and guarded towards outsiders claiming expertise on the challenges facing their landscape

1 C. Jones, 'Green and pleasant land', LPIP Hub Report 2026

The evidence base for systems change Wye-Usk Transition Lab



The Wye (pictured) and Usk are polluted and face severe flood/drought pressures.

and community. Many feel fatigued by repeated attempts to meet national and regional goals that do not align with their values and interests. They live with the poverty produced by multiple deprivations which maintain a malfunctioning system.

Once in the lab, in a collective process, these stakeholders can begin to define the costs and cumulative, systemic harms they face. Their budget-setting and governance decisionmaking is limited. They express concern about not meeting resilience or net zero goals because of inadequate farming methods. Structural barriers to sustainable growth include housing, geographic isolation, high energy costs, and insufficient transport connectivity. They worry about restrictions being placed on current land use, adjustment costs, and uncertainty when new governance or finance models challenge existing practice.

The transition lab guides them to align multiple, interconnected outcomes and take better advantage of available financial support. For example, soil management that improves productivity, biodiversity, water retention and reduces flood risk; local renewables that support energy security, a modern local transport system, and rural income and wellbeing.

When guided to imagine opportunities from transitioning to regenerative approaches and pooling risk, the quantifiable outcomes stakeholders described included more effective and locally appropriate spending, better farm resilience, new income streams and local jobs, improved water quality, lower flood risk, and greater wellbeing for the community. They articulated how ecological health, economic viability and social wellbeing can be mutually reinforcing.

Stakeholders' input was synthesised by the team to generate five themes, capturing multiple potential intervention points: profitable and resilient farming; landscape restoration; distributed, locally owned renewable energy; effective transport; a healthy and well population; and appropriate, localised finance and governance.

By developing relationships, mental models and actions, the transition lab positions stakeholders for more effective local autonomy and ownership. Stakeholders overcome sectoral fragmentation and identify leverage points to foster greater local public control over essential services. They envisage how to aggregate small initiatives into larger programmes with devolved, distributed responsibilities and leadership. This creates stronger social legitimacy and opens new opportunity for investment.

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Participating in the lab makes trade-offs explicit for decisionmakers. For example, market mechanisms such as nature credits or nutrient trading seek particular outcomes but can miss the mark on related challenges. And high-return financial expectations can produce degenerative outcomes if the profits they produce are extracted from the area. The labs provide a means of understanding how and why.

Even in its early stages, the lab's systems approach is adding value beyond what individual initiatives can generate. The lab is actively mapping funding pathways to consolidate fragmented, small-scale projects into a coherent, investible programme, while building the cross-sector connections and shared purpose on which durable investment depends.

Systems

The Wye-Usk's structural and systems failures result from a lack of local autonomy and budgets, and from treating mutually dependent ecological, economic and social systems as separable. In the transition lab process, diverse stakeholders address these challenges, learning and sharing knowledge in iterative facilitated workshops, identifying interdependencies, causal relationships and common objectives.

With guidance, stakeholders reflected on the costs of artificially separating people, economy and environment, and the longitudinal impacts of reduced local autonomy to coordinate resources and responsibilities. Participants recognised the local economy and landscape health as interdependent: without healthy soils, clean water and biodiversity – and localised autonomy to prioritise and protect these – a durable agricultural or rural business base is impossible. Finance mechanisms and fragmented or misaligned policy and governance exacerbate the situation, such as when mechanisms for carbon, biodiversity or nutrient credits pay for single outcomes. By contrast, systems interventions produce multiple outcomes, such as wetlands restoration simultaneously reducing flooding, filtering nutrients, sequestering carbon and restoring habitat and amenity value.

The lab also surfaces structural disconnects between economic systems.

The transition lab enables stakeholders' attention to shift from improbable, 'silver bullet' solutions to those that are more achievable and locally responsive. Stakeholders identify leverage points that could change multiple outcomes at once.

- Although the Wye-Usk region produces substantial agricultural output, existing farming methods deplete soils and contaminate waters. Local equity and much of the economic value from agricultural production is extracted from the region, and opportunities for local horticulture, new entrants and nearby urban markets remain unrealised.
- Rural wellbeing is undermined by centralised fiscal and policy systems that entrench isolation, poor mobility, weak services and uneven health outcomes.
- The regenerative potential of the energy transition is reduced by overly centralised infrastructure decision-making. Investing in more locally owned and distributed energy encourages entrepreneurship, supports farm resilience, reduces emissions, and contributes to long-term renewal and wellbeing.

Participants are equipped in the transition lab to identify where governance and finance can become coherent and appropriate to local and regional needs. Significant topics that have emerged include:

- more adaptive and inclusive local governance and decision-making
- stronger farmer-to-farmer learning
- better cross-sector integration
- catalysing investment that bundles complementary actions into connected programmes with clear and measurable outcomes, and cross-outcome budgets.

The transition lab enables stakeholders' attention to shift from improbable, 'silver bullet' solutions to those that are more achievable and locally responsive. Stakeholders identify leverage points that could change multiple outcomes at once. Systemic approaches emerging from the lab offer decision-makers practical ways to move from triaging individual symptoms towards grounded, distributive systems design that can improve long-term economic and environmental performance across the landscape.

Interventions

Wye-Usk Transition Lab is supporting stakeholders to identify regional opportunities and design interconnected actions to drive the system-wide change necessary for landscape regeneration. Five such priority action areas have emerged, and North Star Transition is working with stakeholders to scale, align and find resources to carry out interventions within each area.

1. Profitable and resilient farming: a region-wide programme of farm transition plans, farm clustering for peer support and resource sharing, local supply chain development, agroecological horticulture, and soil health restoration – to improve nutrient cycling, increase water retention, reduce emissions, and cut costs and pollution.

2. Landscape restoration: deploying nature-based practices across the catchment – to restore wetlands and soil, improve flood management, sequester carbon, enhance biodiversity – and paying farmers for delivering on environmental goals.

3. Community-owned renewable energy: solar, wind and bio energy on farms and public buildings, electrified transport, local trading, storage, and distribution – delivering decarbonisation and new income streams.

The evidence base for systems change Wye-Usk Transition Lab

Farmers in both catchments are economically trapped into reinforcing the conditions for increasingly severe drought-flood cycles.





Table 1. A multi-capital deficit in the Wye-Usk landscape.

Capital	Current trajectory	Key driver
Financial	Net loss and leakage; lack of autonomy	Centralised fiscal policy, siloed budgets, misaligned subsidies, commodity pricing
Natural	Depreciation	Intensive farming, unpriced externalities
Human	Erosion	Farm income compression and viability pressure, diet-related ill-health
Social	Fragmentation	Value extraction and social fragmentation; loss of trust
Manufactured	Underinvestment and leakage	Externally owned energy infrastructure
Intellectual	Loss of local and applied knowledge	Monoculture pressure

4. Finance and governance innovation to deliver multiple, localised outcomes: combining public, private, philanthropic, community and corporate capital, bridging and transition funds, co-operative models and governance structures.

5. Landscape-scale aggregation: linking farm clusters, nature restoration, energy schemes, food networks and improved health outcomes into larger programmes – to attract investment and generate systemic returns.

Outputs so far include over 100 identified intervention opportunities, early project development, stronger collaboration and momentum for coordinated action, early inputs into reformed finance, and governance design. These should catalyse coordinated, investible, locally owned and designed programmes to deliver durable, measurable outcomes.

Economic assessment

Long-term centralised fiscal decision-making has resulted in a fragmented and depleted infrastructure and economic system in the Wye-Usk region. Without an effective local reinvestment strategy, including local procurement, more value is extracted from the Wye-Usk landscape than is retained locally.

Farmers and other producers are confined to low-margin commodity markets and compete primarily on price, while many of the higher-value services, processing activities, supply chains and ownership structures that could add value and support the rural economy accrue outside the region.

Broad national and regional policy and investment objectives – including the energy transition – are often inappropriate and difficult to meet. Where policy objectives are pursued at a distance, and in isolation, implementation risks compounding an already weak local economic position.

The region experiences a self-reinforcing cycle of a lack of autonomy, underinvestment characterised by low business resilience, limited capacity for local investment, increasing pressure on public services, outmigration of labour, and degradation of the natural assets on which long-term prosperity depends.



Systemic barriers must be tackled, from fragmented governance to disconnected stakeholders, limited investment capacity, and incentive structures misaligned with long-term value creation. No single organisation has the mandate or capability to address these issues alone.

The evidence base for systems change Wye-Usk Transition Lab

Addressing these interconnected challenges requires more devolution and local financial control, so that local drivers of economic renewal are activated. As that renewal occurs, the economic rewards need to be reinvested to rebuild and expand local equity and drive regeneration. Ground-level systemic barriers must also be tackled, from fragmented governance to disconnected stakeholders, limited investment capacity, and incentive structures misaligned with long-term value creation. No single organisation has the mandate or capability to address these issues alone.

The transition lab addresses the coordination failure that prevents local actors from achieving landscape-scale outcomes. It convenes farmers, businesses, communities, public bodies and investors around shared goals, producing mutually reinforcing interventions designed to attract investment while retaining economic value locally.

Taken together, the lab's priority action areas are designed to transform the Wye-Usk region from a low-value, externally dependent, extractive economic model characterised by degraded natural capital, to a more resilient, productive and locally rooted region – one with the capacity for autonomous and accountable public control over essential services, including food systems, water, energy and transport.

The transition lab's contribution is not only to enable individual projects, but to build the governance and coordination capacity to make devolution work effectively and visibly.

The lab builds the coordination infrastructure that fragmented actors cannot create alone: shared knowledge, governance capacity and accountable leadership across the landscape. It creates: the potential for reciprocal contracts between local governments and communities; space for private investors; and the planning of integrated, cross-outcome budgets to support holistic outcomes. This is the foundation for mobilising and devolving public and private resources at the scale landscape transition requires – and for ensuring the returns are retained and reinvested locally.

Systemic assessment

Table 1 reveals a multi-capital deficit in the Wye-Usk landscape. These are not six separate problems, but six angles of a single, systemic failure.

Farming systems are placed under acute strain by lack of localised budget control and capacity to make autonomous decisions, rising input costs, climate instability, debt pressures and market uncertainty.

Farmers struggle to balance profitability with environmental stewardship and are trapped into reinforcing the conditions for increasingly severe drought-flood cycles and wider ecological degradation.

Inappropriate agricultural practices and ageing sewage infrastructure add nutrient and pollutant loads to already stressed rivers.

Inadequate transport and energy systems create isolation.

The result is poorer health and economic outcomes, including youth outmigration. These challenges together erode the value base on which farming, local business and community wellbeing depend.

As part of a national devolution strategy, all six interconnected trajectories could be reversed simultaneously, revitalising the local economy and community wellbeing. In the Wye-Usk Transition Lab, stakeholders acquire the skills to begin this process. They apply a multi-capital deficit framework, then design an alternative, locally coherent and adapted system including subsidies suitable to regenerative farming conditions, local energy retention and cross-sectoral budgeting.

Recommendations

The programme is ongoing. These recommendations and systemic insights have emerged to date.

- For local and combined authorities, transition labs offer a proven method to coordinate fragmented local initiatives into investible, landscape-scale economic renewal programmes.
- For national government, adopt the transition lab model as a replicable instrument for place-based rural economic development, capable of advancing devolution, raising GVA and retaining value in underperforming landscapes.
- For regulators and investors, the lab creates the governance and coordination infrastructure needed to aggregate disconnected actors into accountable, multi-sector programmes – improving the risk-adjusted case for capital deployment.
- For all partners, sustained, place-based engagement is essential, supported by appropriate and predictable resourcing. The transition lab approach should be embedded in long-term governance frameworks.
- For regulators, the lab approach provides an enabling environment for regulatory alignment across sectors, reducing enforcement gaps that arise when actors operate in silos.
- Funders require consistent long-term engagement that builds trust, distributing responsibilities and supporting innovation – it is a precondition for landscape-scale investment.

Systemic insights:

- Systems level thinking can be learned and applied wherever stakeholders work collectively for change. A lab's place-based, inclusive approach – backed by appropriate resourcing and governance – is the delivery mechanism.
- Landscape-scale rural economic development is achievable and replicable in comparably underperforming regions. The model does not depend on exceptional local conditions.
- Building stakeholder trust requires sustained in-person engagement. This cannot be substituted by digital interaction and must be resourced accordingly.
- Regions function as systems. Ground-up actions, when aligned and adequately resourced, can scale to deliver economic and environmental outcomes.

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