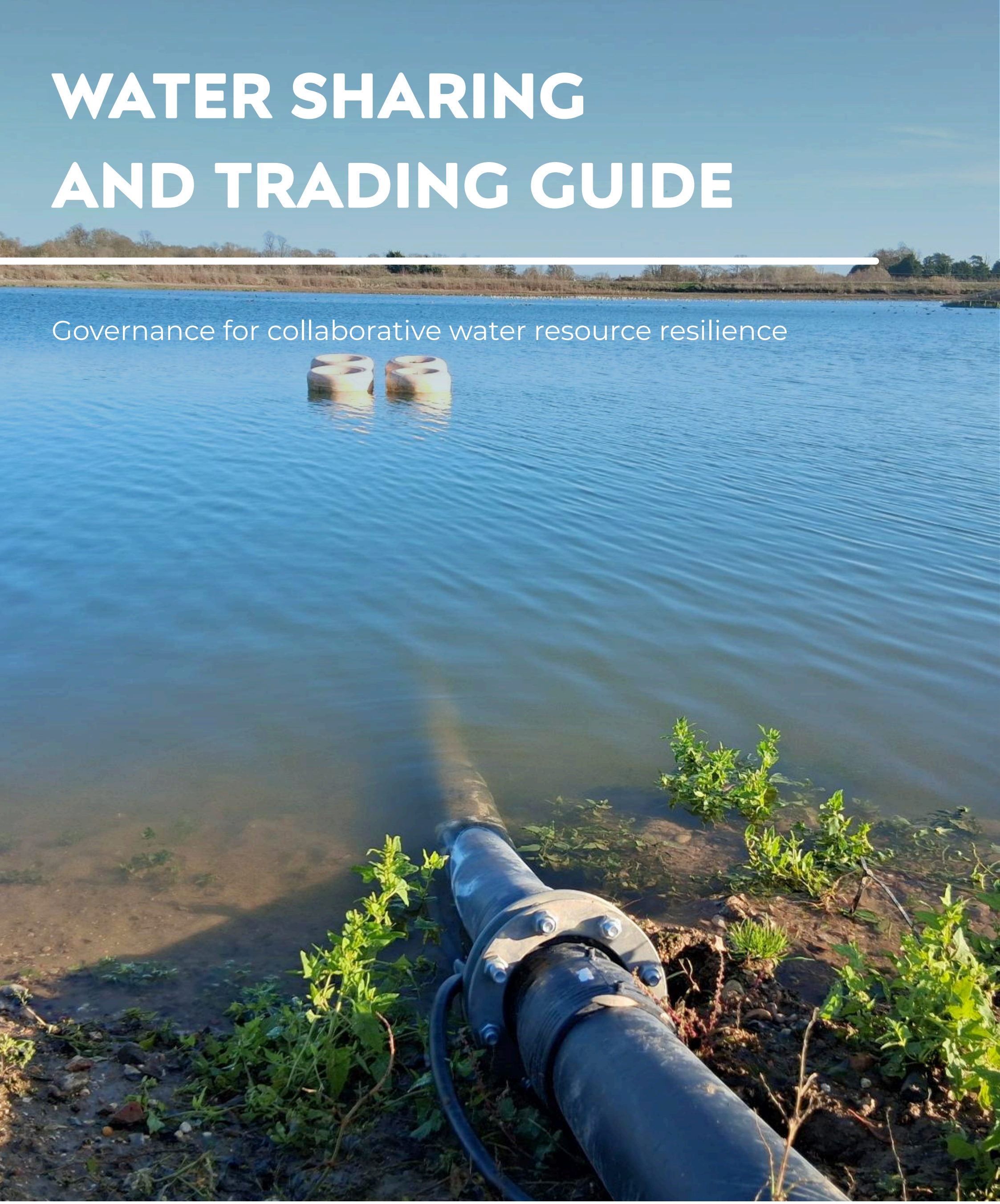
WATER SHARING AND TRADING GUIDE

Governance for collaborative water resource resilience



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1.PURPOSE

Farm businesses increasingly need reliable access to water to support irrigated cropping, livestock operations, and on-farm processing. In many catchments, licensed water availability is becoming increasingly constrained, due to climate change and abstraction licence reform. As a result, water sharing and water trading have the potential to become important tools for improving the resilience and efficiency of agricultural water use.

This document outlines how farm businesses can approach sharing and trading, the regulatory and environmental factors that determine feasibility, and the steps involved in developing proposals that are likely to be accepted by the Environment Agency.


IMAGE: MARK STALHAM



Farm businesses use a variety of water sources including surface water abstractions, groundwater boreholes, mains water supplies, reservoirs and rainwater harvesting. A balance of these sources shared across a catchment could secure business resilience.

2.CHANGING CLIMATES AND FARMING BUSINESSES

2.1 WHY FARM BUSINESSES ARE PRIORITISING WATER RESOURCE RESILIENCE

Climate patterns are becoming much less predictable, with dry springs and summers becoming a more regular occurrence that reduce river base flows. That makes both surface water and groundwater sources potentially less reliable than they used to be.

Greater variability in rainfall puts catchments under pressure, so hands-off flow restrictions are triggered more frequently when rivers run low. More frequent storm events drive the need to scalp high flows when they are available to be stored for later use. Therefore, our approach to abstraction must change, with water abstracted at the most optimum point, which may involve a shift away from summer abstraction or our traditional pattern of filling winter storage reservoirs in favour of storage reservoirs being filled throughout the year during high flow events. A shift in abstraction practice could also play a role in flood management and prevention as farming businesses take on a more active role in catchment water management.

Environmental regulations and moves to improve environmental resilience increase uncertainties for farming businesses. Protections linked to the Water Framework Directive, designated habitats and through environmental destination mean there’s limited scope for issuing new abstraction licences in many catchments. As a result, many catchments are now classed as restricted or over-abstracted, which means that farms can no longer rely on historic abstraction patterns and should consider building their resilience by making smarter use of the licensed water that is available within their catchment. Advances in smart technology are moving rapidly and may allow adoption of a smarter and more flexible approach to catchment abstraction management.



2.1 ECONOMIC AND BUSINESS DRIVERS

High-value crops like potatoes, field vegetables and soft fruit depend on a steady, reliable water supply, so any shortfall can hit crop quality, yields and profitability straight away. Drier summers have made it increasingly more common to irrigate arable crops that didn't previously need additional water.

The rising cost of infrastructure investment such as reservoirs, pumps, pipelines and monitoring equipment means many farms are finding that sharing infrastructure or investing jointly could make financial sense.

Retailers and processors may also seek additional information on sustainable water use and climate risk management. Socially and operationally, neighbouring farms often face the same water challenges, so co-ordinating abstraction and sharing infrastructure can be a win-win. Local abstractor groups can help bring growers together, making it easier to plan jointly and engage with the Environment Agency. As many water issues, like low flows and licence restrictions, can only be solved at a local catchment scale, working collaboratively not only builds trust but also improves monitoring and strengthens collective negotiating power.

2.2 SUMMARY OF KEY PRESSURES

- Lower baseflows and stressed catchments mean abstraction restrictions are triggered more often under hands off flow (HoF) conditions.
- Environmental protection requirements, including Water Framework Directive (WFD) objectives and designated habitats, limit the scope for new licences.
- Many catchments are now classed as restricted or over-abstracted, making resilience dependent on better use of existing licensed volumes.
- Limited availability of new abstraction licences forces businesses to explore sharing, trading, and joint storage.
- Scrutiny of agricultural production is increasing, with expectations for efficient use, robust monitoring, and catchment scale thinking.
- Changing weather patterns are driving changes in thinking and a need to abstract high flows when they become available. Smart technology and real time data may unlock opportunities for businesses to be more responsive to Hands off Flow restrictions and to scalp water arising from flashy high flow events.



3. WATER SHARING AND TRADING INTRODUCTION

Through this guidance, both water sharing and trading are discussed.

Water sharing is an arrangement where two or more licence holders co-ordinate how they use their existing abstraction volumes. It is a mechanism that allows abstractors to co-operate in using their existing licences without changing legal ownership. It is typically used to improve reliability during dry periods or to optimise irrigation scheduling.

Water trading involves the permanent or temporary transfer of part or all of a licensed abstraction volume from one licence holder to another. This is a formal regulatory process overseen by the Environment Agency. Trading is more complex because it changes legal entitlements and will require licence variations.

Applications for licence variations or new licences as a result of the proposed trade will go through the same permitting process as any other licence application.

With current regulatory and climate change pressures, collaboration on water resources becomes more practical and more attractive. Therefore, water sharing, trading, joint storage, and catchment level planning are becoming central tools for agricultural water management.

Typical experiences that lead to water sharing or trading:

1. A farming business experiences unreliable abstraction during dry years and so needs more water to maintain or expand production.
2. The Environment Agency restricts unconstrained new licences due to catchment status.
3. Individual investment is too costly or too risky.
4. Collaboration becomes the only viable route to resilience.



IMAGE: KIRYON SKIPPEN

4. REGULATORY CONTEXT

The Environment Agency regulates abstraction to protect ecological status and to prevent derogation of downstream abstractions. As a result, many catchments are constrained in their water availability, limiting opportunities for farming businesses to apply for new abstraction licences.

Sharing and trading allow better use of existing licensed volumes, but trading requires Environment Agency assessment and approval to ensure that trades do not increase environmental risk.

In assessing whether water sharing is viable from a regulatory perspective, you will need to consider:

- Current licence conditions (hands off flow conditions, seasonal limits, source or purpose constraints).
- Compliance with metering and reporting (responsibility remains with the licence holder when water sharing).

In assessing opportunities for a licence trade, you will need to consider if the activity will maintain:

- Current water availability for both surface water and groundwater abstractions by looking at the Abstraction Licensing Strategy for your local catchment.
- Local environmental designations (Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI) or Ramsar site.
- Ensure licence changes do not cause deterioration under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.
- Evidence that the proposals will not cause impacts of neighbouring abstractions.

5. WATER SHARING AND TRADING IN PRACTICE

5.1 WATER SHARING

Water sharing is an arrangement where two or more licence holders co-ordinate how they use their existing abstraction licences (including volumes). It is a mechanism that allows abstractors to co-operate in using their existing licences without changing legal ownership of the licence. It is typically used to facilitate crop rotation via land sharing, improve reliability during dry periods, to optimise irrigation scheduling or to make use of surplus unused water on a licence.

Key features:

- No transfer of legal rights.
- A licence holder retains their licence and “shares” water with another business.
- There is no change in abstraction location, abstraction volume, abstraction rate or the purpose listed on the licence. Any other conditions (such as hands off flow conditions) must also be complied with.
- Often used within catchments where multiple farms rely on the same surface water source.

5.2 WATER TRADING

Water trading involves the permanent or temporary transfer of part or all of a licensed abstraction licence from one licence holder to another. This is a formal regulatory process overseen by the Environment Agency. Trading is more complex because it changes legal entitlements and will require either licence variations or new licences.

Applications for licence variations or new licences as a result of the proposed trade will go through the same permitting process as any other licence application.

Where buyers in the trade do not have an abstraction licence currently, they would need to apply for a new one. This would be permitted where the trade is resulting in a reduction/revocation of the sellers licence, so there is not risk of deterioration under the Water Framework Directive rules.

Key features:

- Legal transfer of licensed volume.
- Abstraction points can be varied through a trade (not possible to do in water sharing).
- Requires Environment Agency approval and may involve public consultation.
- Existing licences will be reduced or revoked and a new/varied licence issued containing new licence conditions (e.g. lower licenced volumes).
- Required if there are proposed changes to licence conditions including:
  - timing or the location of abstraction points.
  - purpose listed on the licence (e.g. storage, spray irrigation, trickle irrigation). Loss factor conversions may also be put in place if purpose changes are made, for example from general agriculture (medium loss) to irrigation (high loss).
  - More suitable for long-term business planning or structural changes (e.g. expansion, crop diversification).
  - Can be temporary (seasonal) or permanent.

5.3 FACTORS THAT DETERMINE WHETHER SHARING OR TRADING IS POSSIBLE

5.31 ENVIRONMENTAL CONSTRAINTS AND CATCHMENT STATUS (FOR TRADING ONLY)

The Environment Agency will only approve a trade if it does not cause environmental deterioration.

This includes:

- Impacts on surface water flows and groundwater levels.
- Effects and risks to protected habitats and species.
- Compliance with the Water Framework Directive (WFD) objectives, which require that water bodies do not deteriorate in ecological status.
- Cumulative impacts of multiple abstractors in the same catchment.
- Where a water body is classified as over abstracted or no water available, the Environment Agency is likely to reduce abstraction to recent actual levels for a licence trade, which may mean that a licence trade is not of interest/value.

Environmental risk is a key determinant of whether a proposed water trade is likely to be approved. If a catchment is already over abstracted or failing WFD targets, the Environment Agency will consider recent actual volumes of water abstracted as an increase in total volumes abstracted may lead to an unacceptable environmental risk. In these cases, there is likely to be a reduction in volumes able to be abstracted (in total between both parties involved in the trade). In addition, they are likely to consider local impacts as a result of the proposed changes, including the presence of other abstractors, invasive species, water temperature, flow conditions, dissolved oxygen levels and nutrient concentrations such as phosphate and nitrate. (Farmers may also want to take into account crop-related disease risks, for example, brown rot, when assessing whether a proposed arrangement is appropriate and sustainable.)

Seasonal restrictions may also apply. The Environment Agency will seek assurance that the WFD water body status will not deteriorate within the water body where the trade will take place and in downstream water bodies.



5.32 UNDERSTANDING AN ABSTRACTION LICENSING STRATEGY (FOR TRADING ONLY)

An Abstraction Licensing Strategy (ALS) is the Environment Agency's catchment level plan that sets out how water is managed in your area. It explains how much water is available, where and when it can be taken, and the conditions that apply. The ALS guides decisions on new licences, variations, and whether trading of existing licensed volumes is likely to be acceptable.

Each water body in the ALS is classified to show how much water is available for abstraction at different points in the flow profile. The categories are: water available for licensing, restricted water available for licensing, water not available for licensing.

Understanding Q values
When discussing water availability for abstraction across the flow profile, a Q value is often quoted. Q values, such as Q30, Q50 or Q95, represent flow percentile statistics that split a river's hydrological regime into distinct flow bands. For instance, Q95 is the flow rate equalled or exceeded 95% of the time, acting as a crucial baseline for low flows, drought periods and abstraction licensing.

For farmers, this classification effectively sets the boundaries for what is possible in your catchment. It shapes whether you can apply for a new licence, whether a licence variation might be successful, whether trading is feasible, and whether high flow abstraction or winter storage would be available. It also provides an indication of the reliability of abstractions (a measure of how often restrictions are likely to come into effect), as well as longer term changes such as tightening environmental requirements.

The ALS also sets out the environmental constraints that abstraction must not breach. These include Hands-off Flow (HoF) thresholds, ecological flow needs, Water Framework Directive (WFD) objectives, and protections for designated habitats. Together, these constraints define the limits on how much water can be sustainably abstracted without harming the environment.

View your catchment Abstraction Licencing Strategy here.

5.3.3 ABSTRACTION LICENCE CONDITIONS

Licence conditions play a major role in determining whether water sharing or trading is feasible. Abstraction licences include controls, such as Hands-off Flow (HoF) requirements, abstraction locations, seasonal limits, time limits, source specific constraints (for example, surface water or groundwater) and conditions linked to the purpose of use, such as spray irrigation or land on which water can be used for storage. These factors shape what is technically possible.

Water can be shared if the proposed way of sharing the water is within the existing licence conditions. If a condition is needed to change, then water sharing will not be possible and a trade or licence variation should be sought.

5.3.4 BUSINESS AND OPERATIONAL FACTORS

When assessing whether a new water sharing or water trading arrangement is feasible, a farm business should consider a range of operational, technical and legal factors. These include crop water requirements, irrigation timing and how reliably water is needed throughout the season. It is also important to review existing infrastructure and whether it is compatible with a shared or expanded arrangement, for example, pumps, pipelines, storage and any conveyance assets that would need to link between farms.

Pumping capacity and the ability to transfer water efficiently are key considerations, as are metering and monitoring systems that allow all parties to demonstrate compliance with licence conditions. Businesses should also consider the contractual elements of any arrangement, including roles, liabilities and processes for managing disputes.

Finally, it is important to understand the financial and practical implications, such as legal and administrative costs, the need for professional advice, and whether new or upgraded infrastructure would be required. In some cases, there may also be opportunities to develop shared assets, such as jointly constructed reservoirs, where this supports catchment resilience and offers clear benefits to all participating businesses.

- **Crop water requirements, timing and irrigation management.**
- **Infrastructure requirements and compatibility (e.g. pumps, pipes, storage).**
- **Pumping capacity and conveyance infrastructure.**
- **Metering and monitoring capability.**
- **Contractual arrangements, liabilities, and dispute resolution.**
- **Costs of legal and administrative processes and professional advice.**
- **Additional and new infrastructure requirements**
- **Feasibility of constructing shared infrastructure (e.g. shared reservoirs)**



CASE STUDY: ROBERT SMITH, RUSSELL SMITH FARMS

SECURING IRRIGATION RESILIENCE THROUGH COLLABORATION AND INFRASTRUCTURE



Ba**ckground**

For Russell Smith Farms, irrigation is central to growing onions and pre-pack potatoes, where skin finish is critical to meeting market specifications. Reliable, timely water application directly influences crop quality, market access and profitability.

The business operates land across the River Cam and River Rhee catchments in Cambridgeshire. This area faces significant water management challenges. Four of the five sub-catchments in which the farm operates are identified as failing to achieve "good" status under Water Framework Directive (WFD) due to pressures on water flow. Reduced flows are understood to affect the hydrological regime, water temperature and dissolved oxygen levels.

The challenge

Producing high-quality irrigated crops in a water-stressed catchment requires both agronomic and environmental balance. Summer spray irrigation licences are typically curtailed by June or July, depending on groundwater levels and river flows. This creates uncertainty during peak crop demand.

At the same time, good soil and disease management depend on long crop rotations. To maintain these rotations, the business requires access to a large land bank connected to licensed abstraction points. Much of this land is secured through annual rental agreements, often including water. Availability can fluctuate depending on the profitability of other crops, meaning both land access and licenced water use vary from year to year.

Strategy and infrastructure investment

To manage this complexity, Russell Smith Farms has worked with others to develop a diversified and highly connected water supply system. The business has access to a mixture of summer spray irrigation licences, winter abstraction licences for reservoir filling, and borehole supplies. It currently operates three reservoirs designed to capture high winter flows and is planning to construct two additional reservoirs to strengthen long-term resilience.

A key feature of the strategy has been substantial investment in infrastructure. Approximately 40 kilometres of buried pipework connect irrigation systems across both owned and neighbouring land. Robert Smith works with 18 neighbouring landowners, enabling the business to grow between 300 to 350 hectares of irrigated crops each year. This network allows water to be transferred efficiently to where it is required, providing flexibility across a large land base.

This level of capital investment is only viable when viewed over the long-term and multiple irrigation seasons. Confidence in future markets, continued access to water, and land availability are essential if farmers are to take a long-term view and commit to infrastructure that future-proofs both food production and catchment sustainability.

Environmental context

The catchment's abstraction pressures and WFD targets make winter storage increasingly important. By capturing water during periods of high winter flow, the farm reduces reliance on summer abstraction when rivers are most vulnerable. In this context, reservoir development is not simply a business growth decision but a strategic response to environmental constraint and regulatory pressure.

Water sharing and governance

Water sharing within this system is largely enabled by physical connectivity and long-standing, trusted relationships between the business and neighbouring landowners. Agreements are generally straightforward and operate with minimal formal governance. This approach has worked effectively where relationships are well established.

For farmers developing new working relationships with local landowners, more robust governance structures may be necessary. As water resources come under greater scrutiny, clarity around allocation, responsibilities and risk-sharing is likely to become increasingly important.

6. STEP-BY-STEP PROCESS FOR SHARING OR TRADING WATER

Use this step-by-step guide when considering water sharing or trading. Relevant sections are highlighted, if they are appropriate for water sharing or trading as below:

S Section relevant to water sharing

T Section relevant to water trading

6.1 ASSESS YOUR OWN POSITION AND WATER NEEDS

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A useful starting point is to confirm the position of your business and future potential demands and constraints. Make an assessment of your existing resources and storage and review these, considering current cropping plans, irrigation demands, and existing licence conditions. Consider surface abstractions, groundwater, mains supplies, reservoirs and rainwater harvesting. It's also worth considering scope for cropping changes and business growth at this stage.

This will determine whether trading or sharing would provide operational benefits for your business and potentially the wider catchment. It's important to understand your own position and whether your ideas are likely to be workable before approaching others.



QUESTIONS TO ASK OF YOUR OWN BUSINESS:

A useful starting point is to confirm the position of your business and future potential demands and constraints. Make an assessment of your existing resources and storage and review these, considering current cropping plans, irrigation demands, and existing licence conditions. Consider surface abstractions, groundwater, mains supplies, reservoirs and rainwater harvesting. It's also worth considering scope for cropping changes and business growth at this stage.
This will determine whether trading or sharing would provide operational benefits for your business and potentially the wider catchment. It's important to understand your own position and whether your ideas are likely to be workable before approaching others.

Water resource planning resources

There are templates that can be used to support this water resource use and planning - examples are included below:

NIEA How to calculate water usage on farms – useful for the livestock sector

Cranfield University D-Risk planning tool – planning tool to manage irrigation abstraction and drought risks

Cranfield University Rainwater harvesting tool – tool to evaluate the hydrological performance and water storage effectiveness of rainwater harvesting systems

British Columbia – Water management plan checklist

Reference Guide, including irrigation system water use check templates

You may also be able to access support through your local Water Abstractor Group

6.2 IDENTIFY POTENTIAL PARTNERS

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These would typically be neighbouring farms or abstractors within the same catchment. Longer distance sharing with a business located within a neighbouring catchment may become more complex. Mixing a range of water sources such as harvested rainwater or groundwater abstractions may also increase complexity.
Use the Environment Agency's Help for Licence Trading Map to identify local licences that may have potential for trading. It should be noted that this tool rates the likelihood of trading based on recent actual volumes, with higher recent actual use having the opportunity of a greater likelihood of success from a trading application.

Help for Licence Trading Map

Consider whether other landowners or other water-using sectors could contribute to or benefit from the sharing arrangement. A third party might offer land for a reservoir, provide access needed for pipelines, or supply an additional water source (e.g., from quarrying or amenity operations). Exploring these opportunities can strengthen a proposal but may also require additional agreements, permissions, and alignment of interests.



IMAGE: MARK STALHAM

6.3 CONSIDER PRACTICAL ISSUES

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When assessing the practical feasibility of a sharing arrangement, consider the distance between donor and recipient businesses and whether the local topography supports efficient water transfer. Pumping water over long distances or up steep gradients can significantly increase infrastructure and energy costs. It is also important to assess the compatibility of existing assets, for example, whether irrigation mains could be linked or extended, and whether the timing of water application aligns across the participating businesses.

You should also consider how the shared water will be used and whether its quality is suitable for that purpose. Make a clear note of intended uses, such as spray irrigation, storage, or livestock drinking, and identify any agronomic or operational constraints. Water quality issues, such as sediment load, nutrient levels, or disease risks, may limit how or when the water can be used, or constrain particular crops or activities.

Finally, evaluate whether the sharing proposal is financially viable for everyone involved. Consider installation costs for pipelines, pumps and trenching, alongside ongoing operational and maintenance expenses, including electricity, servicing, telemetry and monitoring. Explore different payment or cost sharing models and factor in the long term risks of climate change and future water scarcity. Once you have a clear understanding of these considerations, you will be better placed to judge whether your proposal is robust enough to discuss with neighbouring businesses.

6.4 CHECK ENVIRONMENTAL AND REGULATORY CONSTRAINTS

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6.1 Use Environment Agency catchment data to build a clear picture of local environmental constraints, water availability and any operational restrictions such as Hands-Off Flow (HOF) conditions. This information helps you understand when water is legally and environmentally available for abstraction, and whether additional use could place pressure on the catchment. In restricted or over-abstracted catchments, trading arrangements may still be feasible, but only where they do not increase overall abstraction pressure or risk environmental deterioration.

Understanding these constraints early ensures that any trading proposal is realistic, compliant, and aligned with the Environment Agency's expectations for sustainable catchment management.

Catchment Explorer

6.5 DECIDE WHETHER TO APPOINT AN ADVISER

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Appointing a technical specialist could be beneficial, as they can navigate the complexities of water sharing or trading and ensure the proposal is technically robust. A specialist understands regulatory requirements and can identify the necessary inputs, such as searches and potential modelling of abstraction impacts. This expertise is particularly valuable because any change from existing licence conditions will require a formal trading arrangement, with regulatory oversight from the Environment Agency and licence changes (or new licences). A specialist can also manage practical elements including infrastructure compatibility, monitoring plans and documentation, helping the process run smoothly. Their involvement reduces risk and saves time by identifying issues early and ensuring the proposal aligns with Environment Agency expectations from the outset.

6.7 DEVELOP A SHARING PROPOSAL

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If your scenario is a trade, the Environment Agency recommends using its enhanced pre-application service. Pre-application advice provides early clarity on the likelihood of approval, allowing potential issues to be identified before significant time or money is committed. The Environment Agency will consult internal mapping data including detailed records of protected species, non-native invasive species and other abstractors who may be affected by changes to existing licences, information not always publicly available. The process enables applicants to shape their proposal to meets regulatory expectations, reducing risk and avoid costly redesigns later.

The service is charged on a time-and-materials basis (currently approximately £100 per hour plus VAT). Through this process, the Environment Agency can alert you to constraints such as local environmental impacts or specific conditions likely to apply.

For enhanced pre-application advice, contact the Environment Agency permitting team. They may request an upfront payment covering the first 20 hours of work (approximately £2000 plus VAT), which covers the average time typically required for pre-application advice. If the work takes less time, the unused portion is refunded. If the proposal is more complex and requires additional hours, the permitting officer will provide a quote for the extra time required. At that stage, you can either finish the pre-application and proceed with the initial information, recognising it may be incomplete, or pay for the further work needed to finalise the advice.

A **robust proposal should clearly set out:**

- The volumes and timing of abstraction
- How abstraction will be coordinated between parties
- Metering and monitoring arrangements
- Roles, responsibilities, and liabilities
- Cost sharing or payment arrangements
- Maintenance responsibilities
- The agreed principles for how and when water will be shared

Move towards formalising an agreement only once all practical issues have been explored, resolved, and agreed in principle by every participating business.



6.8 FORMALISE THE GOVERNANCE AGREEMENT

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If all parties decide to proceed, the next step is to develop a written agreement that clearly sets out how the sharing arrangement will operate. This document should define each party's roles and responsibilities, how water will be allocated and distributed, and the operational rules that will apply throughout the sharing period. Establishing these fundamentals early helps create a shared understanding of expectations and reduces the risk of conflict as the agreement moves into practice.

The agreement should also outline the procedures for managing infrastructure, maintenance and monitoring requirements, along with the mechanisms for reporting usage and demonstrating compliance with licence conditions. Clear dispute resolution processes, including how disagreements will be escalated, mediated or formally resolved, provide essential reassurance for all parties. In addition, the agreement must set out how the group will respond during drought years or periods of reduced water availability, helping ensure that decision making remains fair, transparent, and consistent under pressure.

Finally, the documentation should include provisions for adapting the arrangement over time, such as how to handle future changes in supply or reductions in permitted abstraction.

The sharing template agreement that has been developed by the WRE Smart Agri-Abstraction trial allows participants to draw on an established structure while tailoring the details to suit their specific catchment, infrastructure and governance needs. This structured approach ensures the agreement is robust, practical, and capable of supporting long term collaboration.



6.9 MONITOR AND RECORD USAGE

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Maintain existing abstraction records ensuring they are clear and accurate, to demonstrate compliance with licence conditions. Consider whether an emerging catchment management or smart abstraction platform could provide a more efficient, reliable way to manage a sharing arrangement and support day-to-day oversight.

Smart systems can automate much of the ongoing operational monitoring required in a sharing arrangement. These platforms integrate meter data, telemetry, and real-time river flow information to track abstraction activity continuously and flag any risks of noncompliance.

By creating a digital log of all abstraction events, system status changes and flow conditions, these tools generate a robust evidential record that simplifies reporting, supports governance, and reduces the administrative burden on each business.



6.10 COMPLIANCE

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Each licence holder remains responsible for complying with every condition on their abstraction licence and for submitting accurate, timely licence returns; this accountability cannot be delegated within a sharing arrangement. However, for a trade, part or all of the licence will be traded to the ‘buyer’. To make that practical, the governance agreement should set out who does what, how water is allocated and scheduled, and the operational rules that apply, so compliance is built into day-to-day activities rather than checked after the fact.

Ongoing compliance should be supported by clear procedures for monitoring, maintenance, and reporting, with metering and telemetry specified, shared dashboards (where used), and straightforward mechanisms for evidencing usage against licence conditions and Hands-off Flow (HoF) triggers.

Finally, recognise that compliance is continuous: parties should review performance, update procedures when catchment conditions or licence terms change, and ensure records remain complete and accessible. Shared visibility of flows, thresholds and usage, ideally via a smart dashboard, helps partners coordinate pumping windows and stay within agreed limits, reducing regulatory risk for each licence holder.

6.11 BUSINESS CONSIDERATIONS WHEN CHOOSING BETWEEN SHARING AND TRADING

When deciding whether to pursue water sharing or water trading, a farm business should consider several key factors:

- Flexibility: Water sharing offers simplicity and can be adjusted or reversed relatively easily. Trading, by contrast, is more formal and typically involves long term commitments and regulatory processes.
- Cost: Sharing arrangements are usually low cost, relying mainly on coordination between participants. Trading incurs higher expenses due to legal, administrative and permitting requirements.
- Risk: Trading is subject to greater regulatory scrutiny and carries higher compliance risk. Sharing relies more heavily on cooperation, communication and trust between participating businesses.
- Strategic goals: Businesses planning expansion, crop diversification or long term changes may find trading more suitable. For short-term drought resilience or operational flexibility, sharing is often the preferred option.

COMPARISON OF WATER SHARING AND WATER TRADING

Business Factor	Water Sharing	Water Trading
Flexibility	High	Low – Moderate
Cost	Low	Moderate – High
Regulatory complexity	Moderate	High
Environmental scrutiny	Moderate	High
Best for	Short-term resilience	Long-term structural change

Sharing is generally more flexible and cost-effective for short-term needs, while trading is more suitable for long-term business development or reallocation of unused licensed volumes.



CASE STUDY: LINCOLN WATER TRANSFER LTD

WHAT WORKS IN PRACTICE, AND WHY IT MATTERS FOR WATER SHARING AGREEMENTS

BACKGROUND AND SCALE

Lincoln Water Transfer Ltd (LWT) was formed in the early 2000s so that neighbouring farm businesses could collaborate on abstraction and make better use of licensed volumes. Today it brings together 14 members and operates under two licences (a transfer licence and a direct abstraction licence) that together allow up to 580,000 m^3 of abstraction annually, supporting irrigation across 4,600 ha.

WHERE AND HOW IT RUNS

Abstraction and movement of water are co-ordinated across three principal locations: Burton Pump Drain, Oxpasture Pump Drain and Saxilby Pump Drain. The Upper Witham Internal Drainage Board (IDB) provides the operational structure for the scheme. Telemetry on IDB pumps monitors movements, while members submit weekly abstraction readings to maintain transparency and compliance.

GOVERNANCE THAT PROTECTS RIGHTS AND ENABLES FLEXIBILITY

LWT's core value lies in its administration and governance: it protects individual members' water rights while optimising licence use across the group. Clear procedures govern requests for additional water, annual deadlines for offering surplus permanent volumes and annual temporary volumes released to the reserve (pool), alongside director-led decisions on re-allocations. Failure to provide weekly readings triggers financial penalties, a simple tool that sustains data quality and timely reporting.

OPERATING PROTOCOL THAT MATCHES REAL-WORLD DEMAND

Each member holds an individual allocation that can be transferred only within LWT. Members can request to take up reserve (pool) water annually in February, then if members are nearing 80% of their limit, they can request top-ups from a central pool, with extra supply capped at four weeks and calculated from the member's average weekly use in the current season. This design delivers short-term flexibility, while discouraging dependency on pooled reserves.

CHARGING AND INCENTIVES THAT KEEP THE SYSTEM HONEST

Charges reflect both allocated volume and actual use, encouraging efficiency and creating space for members with spare headroom to release it. Income also covers administration, calibration/repairs to pumps and targeted maintenance (e.g. channel desilting where it falls outside the drainage authority's remit).

RESULTS

The system gives greater flexibility to abstractors, improved resilience in high-demand periods and stronger protection of long-term rights, achieved through transparent governance, active monitoring and aligned financial signals.

PRACTICAL LEARNING FROM THE LINCOLN WATER TRANSFER LTD (LWT) CASE STUDY

1. Collaboration between water users can significantly improve the efficiency of water management. By forming a collective group and sharing licensed volumes, farms can optimise available resources and increase resilience during periods of high irrigation demand.
2. Strong governance and clear operational rules are valuable. LWT operates with defined procedures for reallocating water. This structure protects individual rights while allowing the group to operate flexibly, demonstrating that well-designed governance systems are essential for maintaining fairness and trust.
3. Monitoring and transparency is important. The use of telemetry to track water movement and the requirement for weekly abstraction readings ensures accurate data collection and accountability. Simple enforcement mechanisms, such as financial penalties for missing data submissions, help maintain compliance and ensure reliable reporting.
4. A flexible allocation system will reflect real-world demand. Allowing members who reach 80% of their allocation to request temporary top-ups from a shared pool, provides short-term flexibility while preventing over-reliance on shared resources.
5. A well-designed charging system encourages efficient water use. By linking charges to both allocated volume and actual usage, the system incentivises members to use water responsibly and make surplus capacity available to others within the group.

LOOKING AHEAD

LWT is exploring whether additional water sources, such as groundwater, could be integrated into the existing sharing approach.

7. SMART AGRICULTURAL TECHNOLOGY

7.1 SMART ABSTRACTION TECHNOLOGIES – SOLUTIONS FOR FARM BUSINESSES

Smart platforms use real-time telemetry and dashboards to flag periods when abstraction is legally allowed and environmentally safe. Recent work led by Water Resources East (WRE) demonstrate smart abstraction systems that support real-time abstraction management, water availability forecasting, and shared decision making through live dashboards. These mechanisms have the potential to maximise the capture of high flows and enable collaborative abstraction between businesses.

All businesses will have access to open data detailing river levels, licences and real time HoF status. This enables multiple farms to plan pumping co-operatively, maximising the potential capture of high flows. The development of these systems allows abstractors to re-think local abstraction with sharing of infrastructure on neighbouring holdings, unlocking opportunities to share water. This evidence building is particularly helpful for feeding evidence into discussions around catchment abstraction management with the Environment Agency.

Technology	What it provides	Best use for farm groups
Smart Abstraction Platforms (WRE/Artesia style)	Real-time abstraction availability, shared dashboards, catchment insights	Co-ordinating pumping, sharing flows, improving compliance and availability
Hydro-Logic Telemetry	High quality hydrometric data, alerts, integration with SCADA	Monitoring river levels, HoF alerts, trusted data for group decisions
Custom SCADA	Infrastructure automation, remote control, alarms and optimisation	Shared pump control, group storage management, automated compliance



7.2 SMART ABSTRACTION PLATFORMS

Smart abstraction platforms can support collaborative water sharing and trading by bringing together catchment, licence, asset and wider information into one place.

One example is the Smart Abstraction Platform, which has been developed by Water Resources East (WRE), where trials showed that real-time data and shared dashboards can help groups of abstractors co-ordinate their activities during short windows when flows are high enough to support abstraction.

These platforms can bring together on-farm sensors, river flow gauges and catchment wide telemetry to give growers a single, real-time view and shows how conditions are changing. This helps farms make quick, well informed decisions to make the use of available water and stay compliant with licence conditions.

Platforms can also draw on advances in hydrometric telemetry, such as HydroLogic™ systems that monitor river levels, flows and climate data in real time. These technologies reinforce the importance of accurate environmental information, which the smart abstraction dashboard uses to improve compliance and operational efficiency.

In the WRE Smart Agri-Abstraction Trial, the interactive smart abstraction dashboard, enabled shared visibility of flows and abstraction/reservoir status across multiple parties.



How participating farms benefit:

- Integrate on farm sensors, river flow gauges, and catchment wide telemetry
- Interactive dashboard for multiple abstractors
- Clear, real-time indication of when abstraction is permitted
- Reduced risk of regulatory breach
- Ability to synchronise pumping during high-flow windows
- Shared understanding of catchment dynamics

7.3 6.1 HYDROLOGIC™ TELEMETRY

HydroLogic™ telemetry systems provide real-time monitoring of key hydrometric data, including river levels, flows, water quality and local climate conditions. Remote loggers collect this information and transmit it wirelessly for visualisation, alerts and integration with existing farm or catchment systems such as SCADA. These tools support a range of water management needs, from day-to-day abstraction decisions to longer term impact assessments and forecasting.

For farm businesses, HydroLogic™ systems offer clear operational benefits. Real-time visibility of river levels and Hands-off Flow (HoF) thresholds helps farmers understand exactly when abstraction is permitted (in combination with Environment Agency notifications). Automated alerts reduce the risk of breaching licence conditions during falling flows, while reliable, verified data strengthens engagement with the Environment Agency and supports compliance checks. Where farms operate within groups, shared access to the same data feed also helps coordinate pumping decisions fairly and efficiently.

7.4 SCADA SYSTEMS (SUPERVISORY CONTROL AND DATA ACQUISITION)

SCADA systems provide real-time monitoring, automation and control of pumps, pipelines and on-farm or shared storage. They gather live data from sensors, valves, tanks and infrastructure across multiple sites and can be configured to operate equipment remotely—for example, stopping abstraction automatically when HOF conditions trigger or when storage reaches capacity.

For farmers, SCADA offers a practical way to streamline operations, reduce labour costs and maintain compliance even when staff are not on site. Automation reduces the likelihood of over abstraction, while alarms and remote control functions cut unnecessary travel and provide greater oversight of equipment health. SCADA systems can also integrate the assets of several neighbouring farms into a shared, secure control environment, making them well suited to collaborative abstraction or joint infrastructure arrangements.



8. MAKING A FARM WATER SHARING AGREEMENT WORK FOR A GROUP OF ABSTRACTORS

A farm Water Sharing Agreement is a simple and effective way for neighbouring farms to keep water use fair, reliable and well-organised. The agreement includes a set of straightforward schedules that capture key information in one place, so every participant understands what has been agreed and what is expected of them.

The template developed through the WRE Smart Agri-Abstraction Trial provides a practical starting point for groups considering sharing or temporarily transferring water. It highlights the issues farmers need to think about and can be adapted to suit the specific circumstances of any group of abstractors. While the template is designed to make the process easier, each farm should still seek independent legal advice before finalising or signing any agreement.

Farmers who complete the agreement and its schedules benefit from clearer expectations and fewer disputes – everyone knows their pumping windows, daily limits and responsibilities. Shared rules help improve resilience during dry periods by reducing pressure on abstraction and avoiding enforcement issues. Clear contacts, operating procedures and financial terms strengthen business-to-business relationships, while storing all licence and compliance requirements in one place makes auditing and record-keeping much more straightforward. The agreement also provides confidence during equipment breakdowns, with documented emergency procedures and maintenance responsibilities ensuring water continues to flow. These advantages are reinforced by the recommended next steps in the guidance, such as gathering licence documents, confirming shared volumes, listing pumps and telemetry, setting alert thresholds, agreeing a financial model and finalising contact details.

9. THE SCHEDULES OF THE WATER SHARING AGREEMENT TEMPLATE

The Water Sharing Agreement template includes a detailed schedule that captures eight supporting elements of the water sharing agreement. Each part of the schedule relates to a specific part of the agreement so that participating farms have a shared record of how the agreement will work in practice. The schedule forms the operational backbone of the governance agreement.

- **Licences and Constraints (Schedule 1)**

Sets out each farm's abstraction licence details — volumes, abstraction points, Hands-off Flow thresholds, time limits and any special conditions. This gives everyone a clear picture of what's allowed.



- **Rota and Shared Volumes (Schedule 2)**

Agree how much water is shared, the maximum pumping rate, and who pumps when. The weekly rota (Mon–Sun) and daily caps to make planning simple and avoid clashes.

- **Infrastructure and Operations (Schedule 3)**

Lists equipment, such as pumps, pipelines, valves, telemetry and storage. Sets out how pumping starts/stops, emergency actions, site access and who handles repairs. This avoids confusion when equipment needs attention.



- **Monitoring and Data Platform (Schedule 4)**

Notes how meters and shared smart abstraction platforms are set up, who has access, alert thresholds, and a back-up plan if systems go offline.

- **Roles and Responsibilities (Schedule 5)**

A simple RACI-style table that makes clear who does what, operations, compliance, maintenance, invoicing and dispute handling and contacts for each farm.

- **Financial Arrangements (Schedule 6)**

This schedule offers a choice - one of three options:

- Water sale
- Cost sharing
- In-kind exchange

Includes space for payment details, VAT/tax notes and dispute processes.



- **Environmental Compliance (Schedule 7)**

Records drought triggers, low flow actions, screening, spill response and what must be logged. Helps keep abstraction compliant and the farms protected.

- **Notices (Schedule 8)**

Adds formal addresses and emails for serving notices, along with standard wording. Keeps communication official and traceable.

- **Attachments**

Add maps of abstraction points, licence copies and meter photo logs so everything is kept together.

10. CONCLUSION

Farming businesses are facing increasing pressure from changing weather patterns, tighter abstraction rules and the rising costs of building and maintaining water infrastructure. It will be difficult for farms to tackle these challenges alone. Water sharing, trading and smarter use of existing licences offer practical ways for neighbours to strengthen their resilience together. Utilising the sharing and trading opportunities makes better use of the water that abstractors have access to, while staying within environmental and regulatory limits.

Working collaboratively does not mean losing control of your own water resources, it means gaining reliability. By co-ordinating pumping, sharing infrastructure where it makes sense and using clearer governance agreements, farm businesses could reduce downtime, avoid disputes and improve access to water during difficult seasons or ensure a resilient supply into the future.

Smart technologies, from telemetry to shared dashboards, are rapidly becoming a powerful tool for giving all abstractors the same real-time information, helping everyone make better and fairer decisions. These systems also support compliance, reducing the risk of breaching licence conditions during periods of pressure.

Most importantly, building resilience at a farm level also strengthens the wider catchment. Well-designed sharing agreements, supported by robust monitoring and transparent governance, or effective trading applications, show the Environment Agency that groups of abstractors can manage water responsibly. This increases confidence, reduces regulatory risk and helps protect long term access to water for everyone involved. By planning ahead, working with neighbours and adopting smarter approaches, farmers can create a more reliable, fair and future-proofed system, for managing the water their businesses depend on.

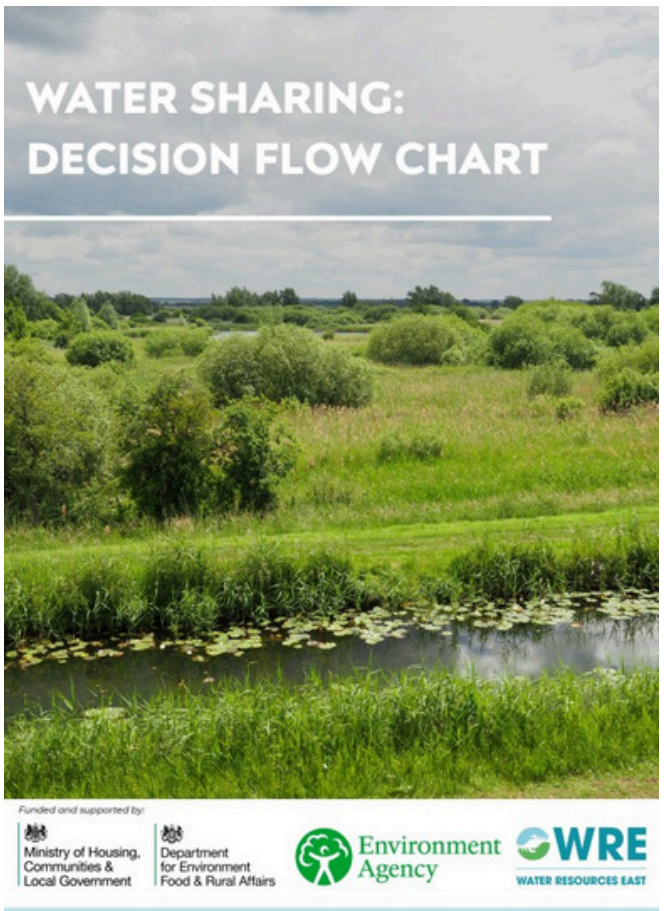


FARM WATER SHARING AND TRADING GUIDANCE

A series of guidance documents have been produced associated with this Guide related to water sharing and trading. Please find the links to these below:



WATER SHARING:
ABSTRACTORS GUIDE LINK



WATER SHARING:
DECISION FLOW CHART LINK



WATER SHARING:
AGREEMENT TEMPLATE LINK



WATER SHARING:
GOVERNANCE PRINCIPLES LINK



WATER TRADING:
ABSTRACTOR CONSIDERATIONS LINK



GLOSSARY FOR AGRICULTURAL ABSTRACTORS LINK

PRACTICAL RESOURCES FOR FARM BUSINESSES

Environment Agency (EA) – Guidance on abstraction licensing, catchment availability, Hands off Flow (HoF) restrictions, and regulatory requirements.

Environment Agency Water Hub – Provides updates, tools and technical information to support water management decisions.

Help for Licence Trading Map – Provides details of groundwater and surface water abstractors in a catchment, with information on their potential for water trading

AHDB – Practical advice on water regulations, pollution prevention, irrigated cropping, water efficiency, and farm infrastructure planning. AHDB also provides tools for calculating crop water needs and irrigation scheduling.

NFU – Policy briefings, member support, and guidance on navigating abstraction rules, catchment planning, environmental regulation and drought resilience. Local NFU advisers can support discussions with regulators and abstractor groups.

UK Irrigation Association (UKIA) – Independent analysis on water sharing, irrigation system performance, abstraction planning and regulatory considerations. UKIA resources are helpful when reviewing infrastructure options or preparing technical proposals.

Water Abstractor Groups (WAGs) – Peer networks that provide catchment specific insights, shared experiences, and support for collaborative abstraction approaches.

Regional Water Resources Planning Groups, such as Water Resources East – Can provide agricultural water resources information and links, along with information on future abstraction reform. WRE also offers tools, templates, case studies and learning from the Smart Agri-Abstraction Trial.

Catchment Based Approach (CaBA) Partnerships – Local groups working on catchment improvements, nature-based solutions, environmental data and opportunities for collaborative catchment management.

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Please note that this document has been designed as guidance - it does not constitute legal advice. Parties should obtain independent legal or technical advice before entering water sharing or trading agreements, where appropriate. This is to ensure understanding and compliance with rights, obligations, and risks associated with abstraction licencing and regulatory conditions.

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