

# The Westcountry Rivers Trust

## Sustainable Catchment Management

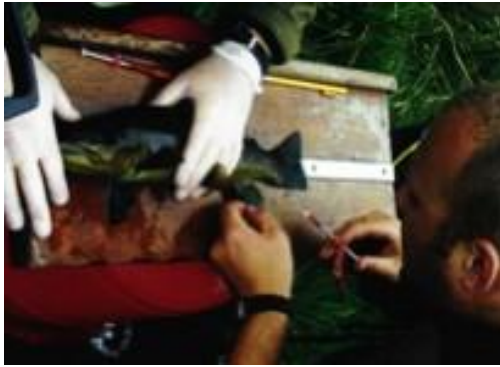
By Dylan Bright  
Trust Director



Westcountry Rivers Trust

*Registered Charity No. 1045806*

# The Trust's normal sphere of operations...



Research



Practical advice



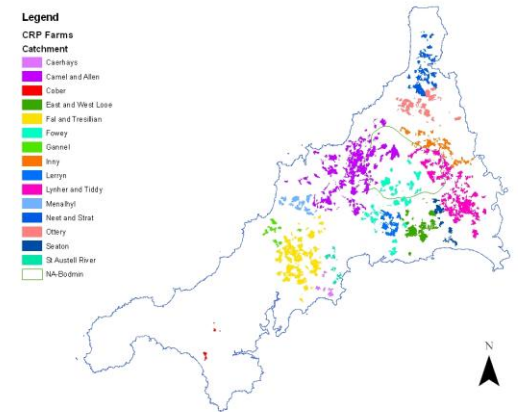
Environmental education



Physical works



Demonstration sites



Catchment-scale projects



# Land management change - a potted history

- **Regulatory Protection** -you commandeer land or the right to do certain things on land, for one purpose (SSSI, NVZ, WPZ, CROW Act) - *cost prohibitive on a catchment scale, I feel unfair if not universally applied, disconnected planning, species and habitat focus (Lawton)*
- **Community Conservation** - you find win-wins for land owners that save them money and improve the environment, and foster land management change



## Case Study: Riverbank fencing



Savings: Fencing preventing lameness, straying and infection saving £2 per animal per year. On a 200 head dairy unit the fencing more than paid for itself in the first year = **£400/yr**

Cost: Fencing = **£250**



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## Case Study: Improved savings associated with collecting & using roof water in the farm yard

A farm with annual rainfall of 1.2m/yr on a roof of 20m x 30m:

Cost: Guttering > **£20**

Saving:

- A) 20m x 30m = 600m<sup>2</sup> produces 720m<sup>3</sup> water in slurry pit (pumping £0.50/m<sup>3</sup>) = **£360/yr**
- B) 720m<sup>3</sup> water (mains £1.57/m<sup>3</sup>) = **£1130/yr**

Further savings are realised if you consider, reduced soil compaction & pollution risk reduction



# Farm advisory outputs to date with the Westcountry Rivers Trust

- 1800+ farmers & landowners given advice
- 1380+ Integrated Land & River Management Plans
- Over 95,000 ha of land targeted with management advice
- 250 km+ riverbank restored
- 16 wetlands restored/improved
- 85+ km ditches prioritised for re-vegetation
- 350+ sites of accelerated erosion controlled
- 35 demonstration sites developed and operational
- 270+ sites of habitat improvement
- 50+ buffer zones created



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- **Regulatory Protection** -you commandeer land or the right to do certain things on land, for one purpose (SSSI, NVZ, WPZ, CROW Act) - *Cost prohibitive on a catchment scale, unfair if not universally applied. Failing to deliver for biodiversity (Lawton, 2010).*
- **Community Conservation** - you find win-wins for land owners that save them money and improve the environment, and foster land management change- *Delivers economic benefits but land protection is a by product and voluntary. Society needs to guarantee changes and regulation is not currently doing that.*
- **Paid Ecosystem Services (PES)** - beneficiaries pay for providers for ecosystem services – *Needs clear economic case for investment*



# What do we get from our catchments: Ecosystem Services?

## Provisioning services

- food
- energy (hydropower, biomass fuels)

## Regulating services

- carbon sequestration and climate regulation
- flood and drought attenuation
- nutrient dispersal and cycling
- purification of water and air
- pest control and biodiversity

## Cultural services

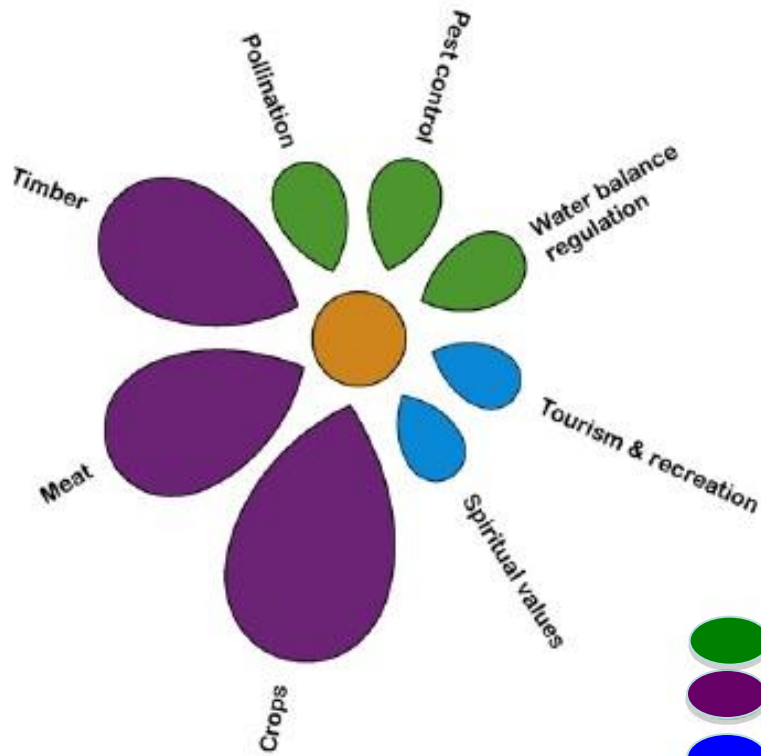
- cultural, intellectual and spiritual inspiration
- recreational experiences (including ecotourism)

} Paid for by  
the markets

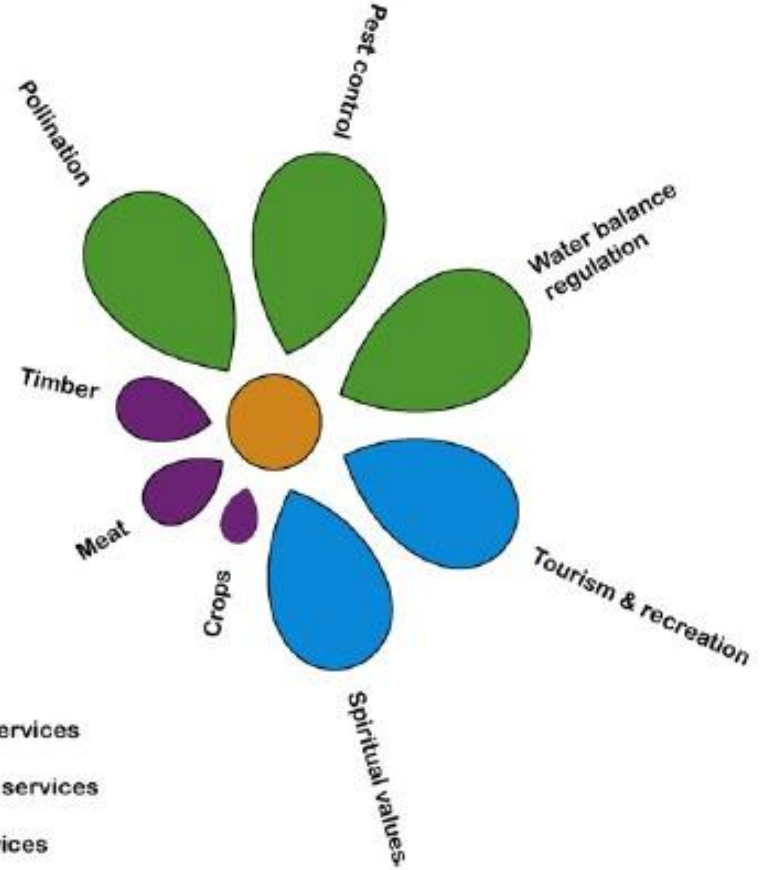
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farmer






## AGRICULTURAL ECOSYSTEM



## 'NATURAL' ECOSYSTEM



-  Regulating ecosystem services
-  Provisioning ecosystem services
-  Cultural ecosystem services



# Developing new markets in theory...

**New Market**



Willingness to Pay  
Estimate cost/benefit  
Sell to customer

**Ethical Broker**



Agree target areas  
Ensure multiple benefits  
Minimise administration

**Farmer**



Willingness to be Paid  
Offset actual value  
Management/Covenant



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# Developing new markets in practice...

**Martin Ross - SWW**



**Dylan Bright - WRT**



**Mr Jones - Farmer**



- Estimated cost/benefit ratio of up to 65:1
- Sold to OFWAT
- 65p from every bill payer = £9 million

- Ensure works and advice creates multiple ecosystem benefits
- Minimise admin costs
- Monitor concept

- Instigate farm resource management plan
- Pay for remaining non grant aided work
- Change practices



# Willingness to Pay...

- **WATER COMPANIES** – Work with South West Water to document the cost/benefit ratios for working on catchment restoration for OFWAT
- **CARBON OFFSETTING** – Work with DECC to establish additionally of Carbon sequestered through long term habitat abandonment
- **FLOOD DEFENCE** – Work with insurance groups to identify areas where soft engineering may effect the flood hydrograph
- **DREGING COMPANIES** – Work with harbour authorities to establish annual dredging costs
- **WIDER BENEFICIARY GROUPS** - Identifying the wider additional social and ecological benefit of catchment restoration including tourism, fisheries, biodiversity groups.
- **FARMER & LANDOWNER** – Work with landowners to establish the cost benefits of the remaining extensive activities permitted.

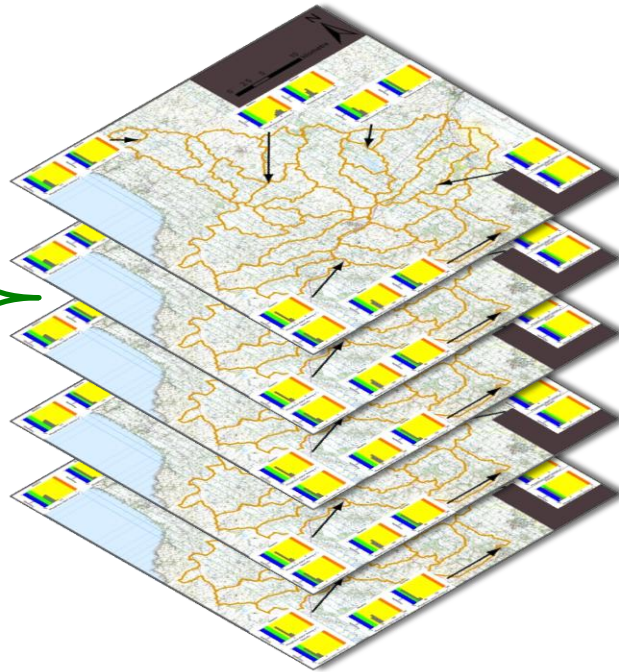


# WATER – Economics

Stake holder co-led service modelling with both the provider and the buyer generates Trust in model



Tourism Groups



Flood risk reduced £/hectare of houses

Fecal Coliforms removal £/blue flag status

Carbon sequestered £/tonne C stored

Sediment removal £/tonne Sediment

Nitrogen & Phosphate removal £/kg N or P

Farmer A



Farmer B



Farmer C



Allows us to apportion benefits objectively



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# Future drivers for catchment management

**Works but needs  
market  
development**



**Not working  
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**Works but  
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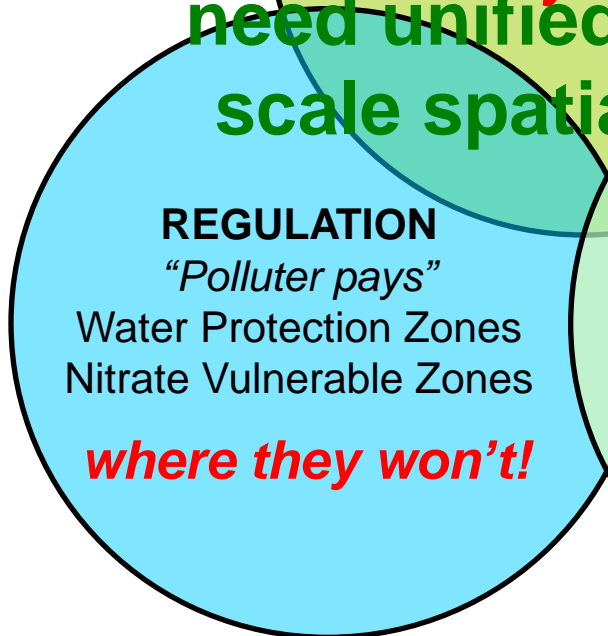
# Future drivers for catchment management

**Works but needs  
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**All delivery mechanisms  
need unified catchment  
scale spatial planning**

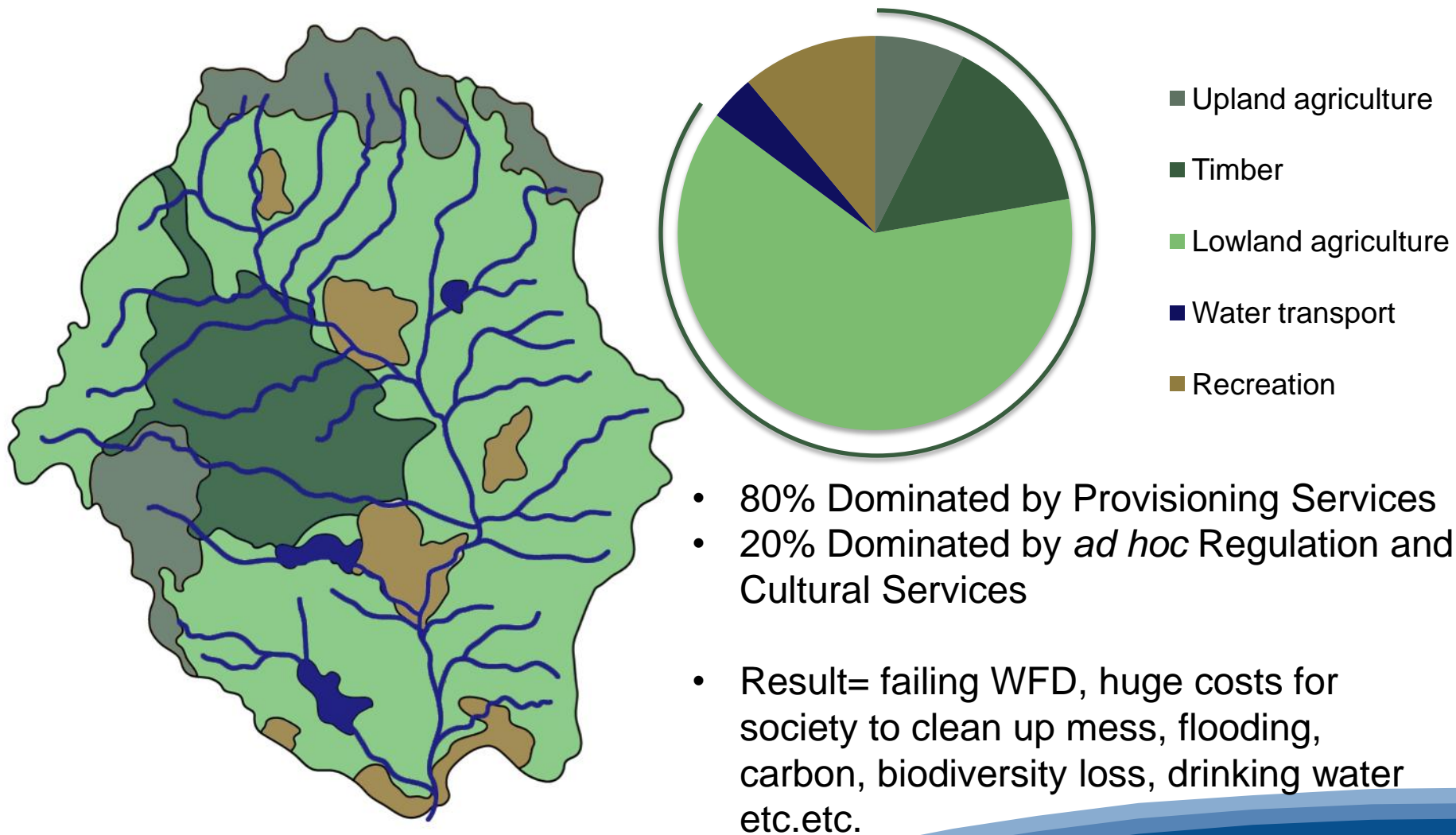
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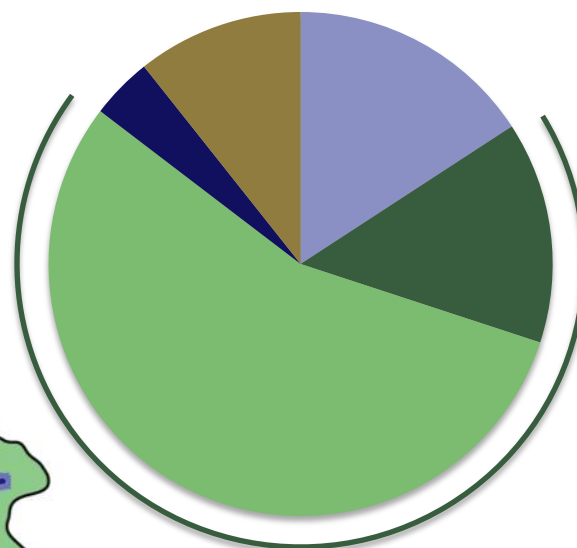
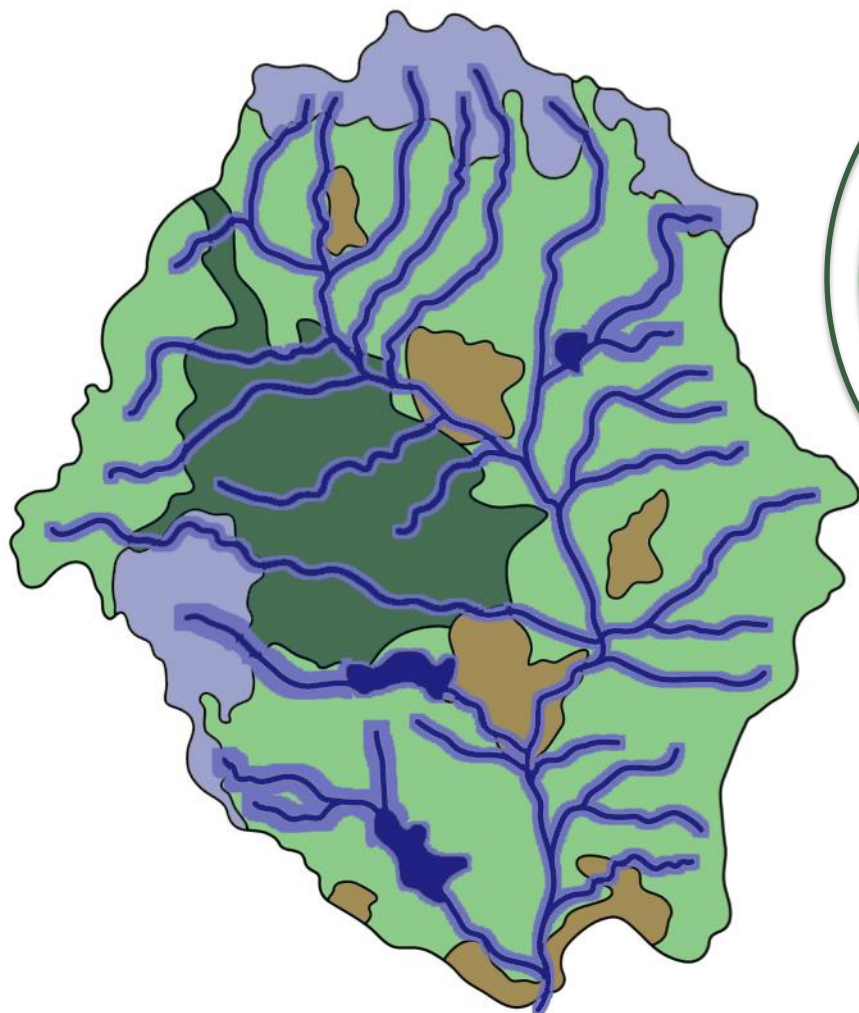
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# A schematic map of current ecosystem service delivery



# A schematic map of aspirational ecosystem service delivery ?

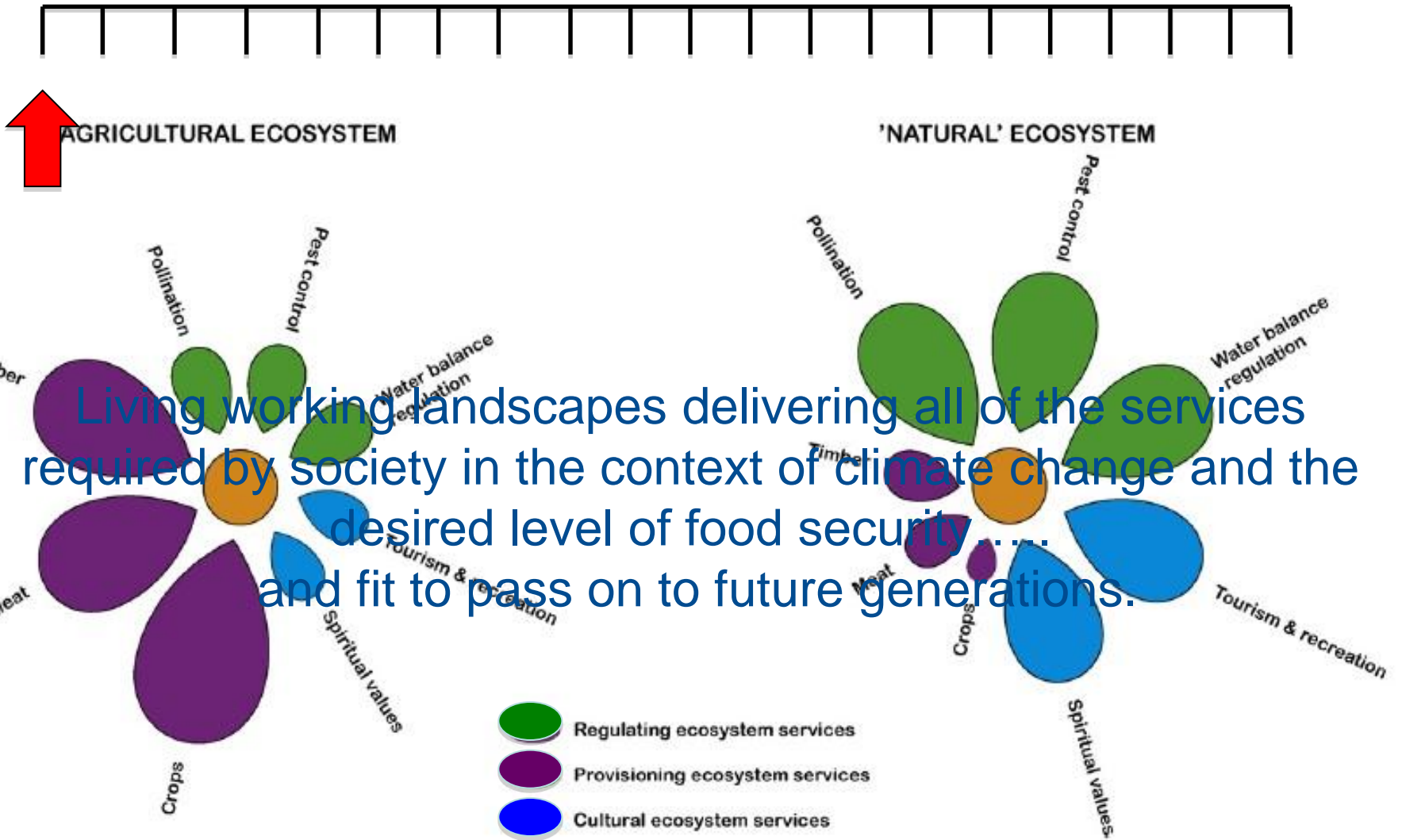


- Multifunctional areas
- Timber
- Lowland agriculture
- Water transport
- Recreation

- 65% Dominant by Provisioning Services
- 35% Dominated by focused Regulation and Cultural Services
- Result=Passing WDF



# Environmental Sustainability Meter



*Thank you for taking the time to view this presentation*



Westcountry Rivers Trust

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