

SIP



SUSTAINABLE INTENSIFICATION
RESEARCH PLATFORM



SCIENCE, POLICY AND PRACTICE NOTE 7 Dynamic Landscape Typology Tool for Sustainable Intensification





The Issue

Sustainable intensification is defined as changes in agricultural land management that maintain or increase agricultural production whilst enhancing or maintaining a wide range of ecosystem services that improve our quality of life, including the conservation of natural and historic landscapes, supplying of clean drinking water, health through recreation, and opportunities for rural employment.

Sustainable intensification means adopting new farm management practices that improve the efficiency of farming, mainly by careful management of inputs such as chemicals and fertilisers, but also benefiting the environment. Technical approaches such as the adoption of precision farming and conservation tillage offer reductions in fertiliser and fuel use whilst reducing soil erosion and pollutant runoff, whilst agro-ecological approaches such as enhancement of natural biocontrol and mixed swards of grasses, legumes and herbs offer reductions in chemical use and increase climate resilience.

Achieving management change will require targeted investment of time and resources, especially support of farmer-to-farmer knowledge exchange and technical networks, in the areas most in need and likely to benefit. The very wide range of needs means that no single assessment of priorities will meet the expectations of all interest groups, and there is a need to share the available evidence in a way that allows exploration of different views to develop a consensus on next steps. In particular, there is a need to understand the significance of local issues in the context of regional disparities.

Our objective in this work was to therefore develop a dynamic national 'Landscape Typology' for use by key organisations such as Defra and Natural England to better understand regional differences by interactive computer mapping of the needs and opportunities, and providing a free tool for identifying areas of similar status that could become the basis of advisory zones, and for exploring the consequences of prioritising different needs.

“Whatever you do must be sustainable to ensure production from your land in future years; environmental sustainability protects future productivity. There is a need for better directives from science and policy.”

Farmer – Conwy Valley, Wales

Outcomes		
Economic	Environmental	Social
Production	Biodiversity	Direct Employment
Loss	Air Quality	Indirect Employment
Waste	Water Quality	Recreation
Efficiency	Water Quantity	Public Health
Profitability	Greenhouse Gases	Ethical Standards
Costs	Carbon Sequestration	Landscape Character
Quality	Flooding	Cultural Value
Other	Pollination	Other
	Soil Quality	
	Other	

Economic, environmental and social outcomes affected by Sustainable Intensification practices.

SIP's Response

Web Mapping Tool

We developed a mapping tool, freely accessible via the web, which allows users to visualise the distribution of more than 100 'outcome' indicators of the status of rural England and Wales. The indicators measure the relative need for improvement or protection of rural areas and their inhabitants, and were developed by integration of a wide range of publicly funded surveys. The indicators are organised by theme:

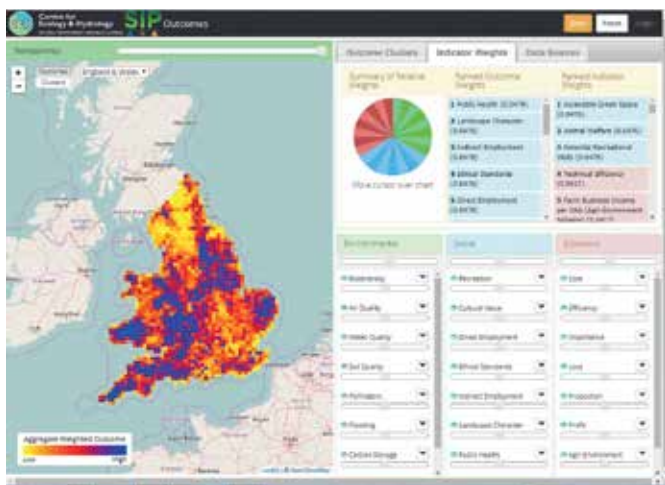
- Economic indicators map the productivity and efficiency of farming, including sales per farm worker or area of agricultural land, expenditure on crop protection chemicals and veterinary medicines, and payments received under agri-environment schemes.
- Environmental indicators map biodiversity hotspots for a wide range of plants and animals, and risks relating to atmospheric and river pollution, soil erosion and flooding. Selected ecosystem services to agriculture are also mapped, such as the abundance of insect pollinators.
- Social indicators map the cultural and recreational value of the countryside, such as the presence of historic farm buildings and publicly accessible greenspace, but also the sustainability of rural incomes and employment opportunities.

Guidance on the source and interpretation of each indicator is provided, along with a clustering or zonation tool that identifies similar areas in response to users changing the importance of the themes by moving sliders. The created maps can be shared

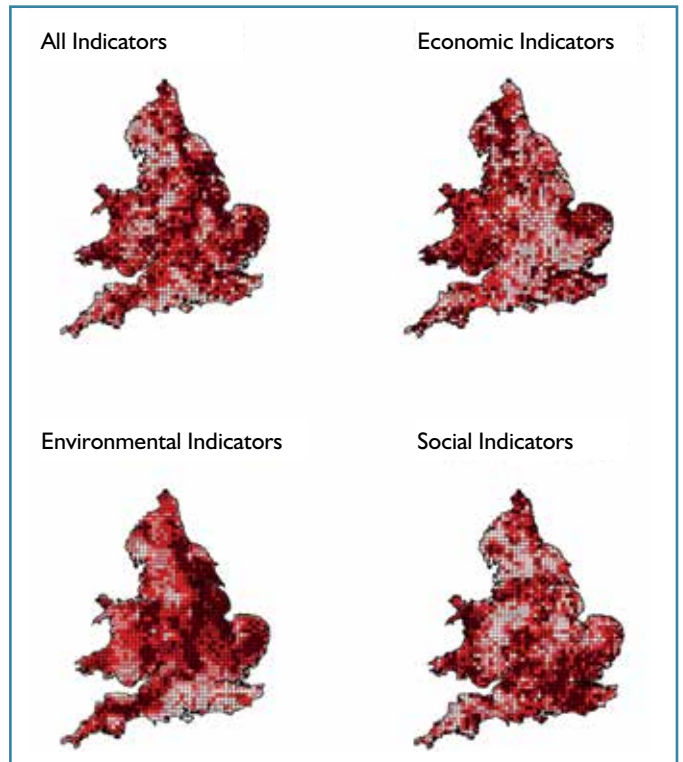


with colleagues and are intended to help understand where the needs for Sustainable Intensification practices are most similar.

The web mapping tool is designed as an open system, so that new spatial datasets can be easily uploaded and integrated with the existing indicators.



Identification of similar areas using the web mapping tool to weight the importance of outcomes.



Map of indicator 'hot spots' for improvement or protection of economic, social and environment outcomes.

“High importance is placed on jobs provided by farming, these keep people in their communities, support local economy and villages. Well-kept farmland and initiatives also support tourism, bringing further benefits to the local economy.”

Farmer – Conwy Valley, Wales





Targeting Tool

To further aid the targeting of resources, we developed a separate tool that maps the potential farm interest in 20 Sustainable Intensification practices, alongside a broad assessment of our confidence in them having detectable positive or negative impacts on the 'outcome' indicators. The latter was substantially based on earlier government funded work by the University of Hertfordshire.

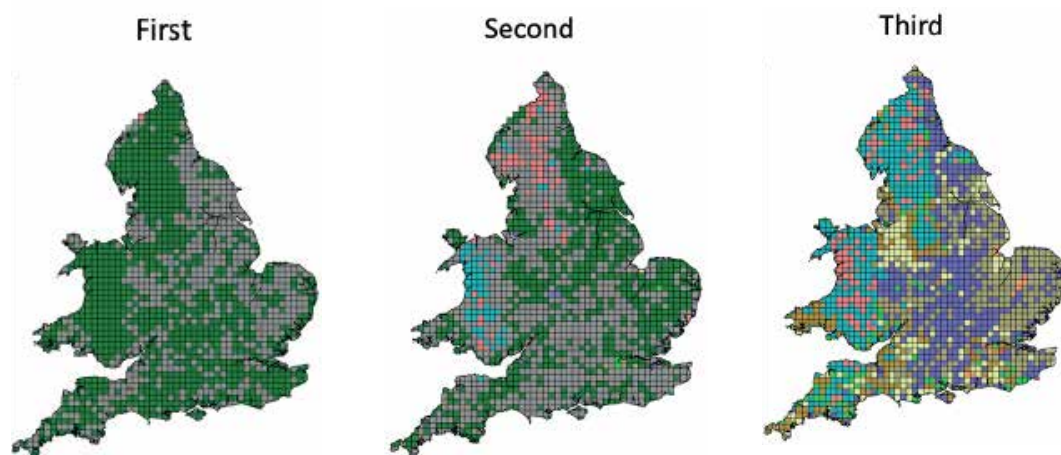
The practices assessed are diverse, and include precision farming, business diversification, animal health and welfare improvement, and habitat creation. With the support of a small number of farm advisors, the individual practices have been scored for the potential benefits and demands they place on farm managers in terms of skill, labour and costs, and in terms of their compatibility with existing enterprises.

Simple rules are used to compare the demands with national agricultural survey data on 'structural' indicators known from the literature to affect the capacity for management change and rate

of adoption of new practices, such as farm size and tenure status, and farmer age and education. To reflect variability in individual preferences for economic, conservation or lifestyle changes we have also incorporated aspects of the existing Defra segmentation models of farmer attitudes and behaviours to adjust the rules. The approach is generic and can be easily applied to new practices.

The output is an additional set of 'relevance' indicators that map potential level of interest and timescale of uptake, and are being incorporated into the Web Mapping Tool to show where there are greater opportunities to engage with farmers to encourage adoption of practices that address the regional needs mapped by the 'outcome' indicators.

By combining the 'outcome' and 'relevance' indicators the Targeting Tool is further able to rank areas according to the estimated response to individual or multiple practices, and measure the benefits of targeting support. The approach to ranking is similar to that used in optimising habitat reserves.



Top three sustainable intensification strategies. Prioritised for delivering local improvements in outcome indicators.



Opportunities for Policy and Practice

- The typology can be used to identify concentrations of farms with the characteristics associated with uptake of specific practices. This is relevant where policy objectives are seeking to encourage the adoption of particular farm practices.
- The capability of the typology to provide increased access to information on farming systems and structural characteristics of farms in areas may generally result in the better design of interventions, and insights into the technical or land use changes that could best address policy objectives.
- More significantly, the typology is capable of identifying relatively coherent areas with particular characteristics in common. These need not be areas previously identified as needing to achieve particular policy targets, but simply areas where socially desirable practices have the potential to be relatively widely adopted either individually or in sets of practices.
- An ecosystem approach implies that greater attention should be directed to the interactions amongst different ecosystem services. The typology makes explicit the possible co-benefits associated with the adoption of particular practices, and the changes in the efficiency of a spatial targeting approach as the number of benefits included in the analysis is changed.
- The typology indicates opportunities and potentials at a relatively broad scale. It does not indicate the situation on individual farms, although the best available survey statistics are used to provide relevant indicators for small areas. It therefore represents a first stage in a process towards the promotion of Sustainable Intensification practices leaving the initiative to be taken by government, groups of farmers or their representatives, or by commercial organisations.
- The typology provides a means of identifying similar regions within which traditional agricultural extension activities might be organised. Advice might be oriented towards practices that offer 'win-win' opportunities, which can improve farm profitability but also generate environmental or social benefits. This might include farm demonstration projects, open days and discussion groups. In the longer term, this might promote the development of more locally specific diversified farming systems, perhaps incorporating particular livestock breeds or plant varieties.



“The Conwy Valley is too big to be a single collaboration – Smaller collaborations, with less diversity in terms of farming approach, work better.”

Farmer – Conwy Valley, Wales



Authors

Steven Anthony (ADAS), Peter Henrys (CEH), Amy Thomas (CEH) and Jack Cosby (CEH).

Based on findings from the SIP Landscape Typology prioritisation of sustainable practices workshops in the Conwy, Upper Welland and Taw catchments.

Further Resources

The Dynamic Landscape Typology Tool can be accessed via the SIP website www.siplatform.org.uk/decision-support-tools

The below reports can be accessed via the Defra website. Please visit <http://bit.ly/2tYtWnx>

Anthony, S., Boatman, N., Cosby, J., Crowe, A., Emmett, B., Henrys, P., Hodge, I., Lee, D., Midmer, A. and Thomas, A. (2016). *Landscape Typology – A Framework for Prioritisation of Sustainable Intensification Strategies*. Report for Defra project LM0302 Sustainable Intensification Research Platform Project 2: Opportunities and Risks for Farming and the Environment at Landscape Scales

Henrys, P., Anthony, S., Boatman, N., Brown, M., Cooper, J., Cosby, J., Crowe, A., Emmett, B., Johnson, C., Lee, D., Midmer, A., Thomas, A. and Watkins, J. (2016). *Dynamic Typology Tool – Initial Development and Future Roadmap*. Report for Defra project LM0302 Sustainable Intensification Research Platform Project 2: Opportunities and Risks for Farming and the Environment at Landscape Scales

Lee, D., Midmer, A., Henrys, P. and Hodge, I. (2016). *Report on Stakeholder Workshops to Introduce a Landscape Typology Modelling Framework*. Report for Defra project LM0302 Sustainable Intensification Research Platform Project 2: Opportunities and Risks for Farming and the Environment at Landscape Scales

Cosby, J., Anthony, S., Emmett, B., Henrys, P., Lee, D., Midmer, A. and Thomas, A. (2017). *Identifying land-use opportunities, risks and conflicts to develop Sustainable Intensification targeting approaches*. Report for Defra project LM0302 Sustainable Intensification Research Platform Project 2: Opportunities and Risks for Farming and the Environment at Landscape Scales

Acknowledgements

Images used with kind permission of ADAS.

The Sustainable Intensification Research Platform (SIP) is a multi-partner research programme comprising academia, farmers, industry experts, environmental organisations, and policymakers.

Funded by Defra and the Welsh Government, the platform explores the opportunities and risks of Sustainable Intensification (SI) from a range of perspectives and landscape scales across England and Wales.

The Platform, run from 2014-17, has investigated ways to increase farm productivity, reduce environmental impacts, and increase the benefits that agricultural land provides to society.



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Yn seiliedig ar allbwn gweithdai blaenorfaethu mesurau
cynladwydd yn nhalgylch Conwy, Welland Uchaf, a'r Taw.

Adnoddau pellach

Gellir gweld yr arf Dynamic Landscape Typology trwy wefan
prosiect SIP www.sipplatform.org.uk/decision-support-tools

Gellir darllen yr adroddiadau isod ar wefan Defra.
Ymwelwch â: <http://bit.ly/2cYtWnX>

Anthony, S., Boatman, N., Cosby, J., Crowe, A., Emmett, B.,
Henrys, P., Hodge, I., Lee, D., Midmer, A. and Thomas, A.

(2016). *Landscape Typology – A Framework for Prioritisation of
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Diolchadau

Defnyddiwyd y lluniau gyda chaniatâd caredig ADAS

Rhaglen ymchwil aml-bartner yw'r Platform Ymchwil i Ddwystrau Cynaliadwy
(SIP) sy'n cynnwys academaidd, fffermwy, arbenigwyr y diwydiant, sefydliadau
amgylcheddol, a gwneuthurwyr polisi.
Ariennir y platform gan Defra a Lywodraeth Cymru, ac mae'n archwilio'r
cyfleoedd a'r risgiau sydd ynghlwm wrth Ddwystrau Cynaliadwy o amrywiaeth
o safbwyntiau a g'raddfeydd tirwedd ar draws Cymru a Lloegr.
Mae'r Platform, a oedd yn gweithredu o 2014-17, wedi ymchwilio i ffyrdd o
gynyddu cynhyrchiant fffermydd, lleihau effeithiau amgylcheddol, a chynyddu
maneision tir amgelyddol i'r gymdeithas.



Cyflieoedd ar gyfer Polisi ac Ymarfer

➤ Gellid defnyddio'r deipoleg i nodi crynodiadau o ffermydd sy'n meddu ar y nodweddion sy'n gysylltiedig ag ymgyrdd ag arferion penodol. Mae hyn yn berthnasol pan fydd amcanion polisi yn ceisio anog pobl i fadbwysiadu arferion ffermio penodol.

➤ Mae'n bosibl y bydd gallu'r deipoleg i ddarparu mwy o fynediad i wybodaeth am systemau ffermio a nodweddion strwythurol ffermydd mewn ardaloedd yn arwain at ddylunio ymyriadau yn well, a mewnwleddiad i'r newidiadau technegol neu newidiadau i'r defnydd o dir a allai ymddrin ag amcanion polisi yn y ffordd orau bosibl.

➤ Yn fwy arwyddocaol, mae'r deipoleg y gallu nodi ardaloedd cymharol cydlynol a chanddynt nodweddion penodol yn gyffredin. Nid oes rhaid i'r ardaloedd hyn fod yn rhai a nodwyd yn flaenorol fel rhai sydd angen cyrraedd targedau polisi penodol, ond yn hytrach yn ardaloedd lle y mae'n bosibl i arferion sy'n ddymunol yn gymdeithasol gael eu madbwysiadu'n eang naill ai'n unigol neu mewn setiau o arferion.

➤ Mae dull ecosystem yn awgrymu y dylid rhoi mwy o sylw i ryngweithio ymhlith gwasanaethau ecosystem gwahanol. Mae'r deipoleg yn dangos y cydftuddiannau posibl sy'n gysylltiedig â madbwysiadu arferion penodol, a'r newidiadau o ran effeithlonrwydd dull targedu gofodol wrth i nifer y manteision a gynhwsir yn y dadansoddiad newid.

➤ Mae'r deipoleg yn awgrymu cyflieoedd a phosibiliadau ar raddfa gymharol eang. Nid yw'n dangos y sefylla ar ffermydd unigol, ond defnyddir yr ystadegau gorau posibl o'r arolygon i ddarparu dangosyddion perthnasol ar gyfer ardaloedd bach. Felly mae'n cynrychioli'r cam Cynaliadwy gan adael i'r llywodraeth, grwpiau o ffermyr neu eu cynrychiolwyr, neu sefydliadau masnachol gymryd yr awenau.

➤ Mae'r deipoleg yn darparu ffordd o nodi rhanbarthau tebyg y gellid trefnu gweithgareddau ymestynol amaethyddol traddodiadol ynddynt. Gellid llwio cynor tuag at arferion sy'n cynnig cyflieoedd lle mae pawb yn elwa, sy'n gallu gwella profddioled ffermydd ond hefyd yn cynhyrchu manteision amgylcheddol neu gymdeithasol. Gallai hyn

gymwys prosiectau arddangos mewn ffermydd, diwrnodau agored a grwpiau trafod. Yn y tymor hwy, gallai hyn hyrwyddo'r gwaith o ddatblygu systemau ffermio wedi'u hamrwio sy'n fwy penodol yn lleol, efallai gan ymgorffori bridiau da byw penodol neu bllanhigion amrywiol.



“Mae Dyffryn Conwy yn rhy fawr i fod yn un gydweithrediaeth nhermau'r dulliau ffermio yn gweithio'n well.”
— Mae trefnadau cydweithredol llai, gyda llai o amrywiaeth yn Ffermyr – Dyffryn Conwy, Cymru





Offeryn Targeddu

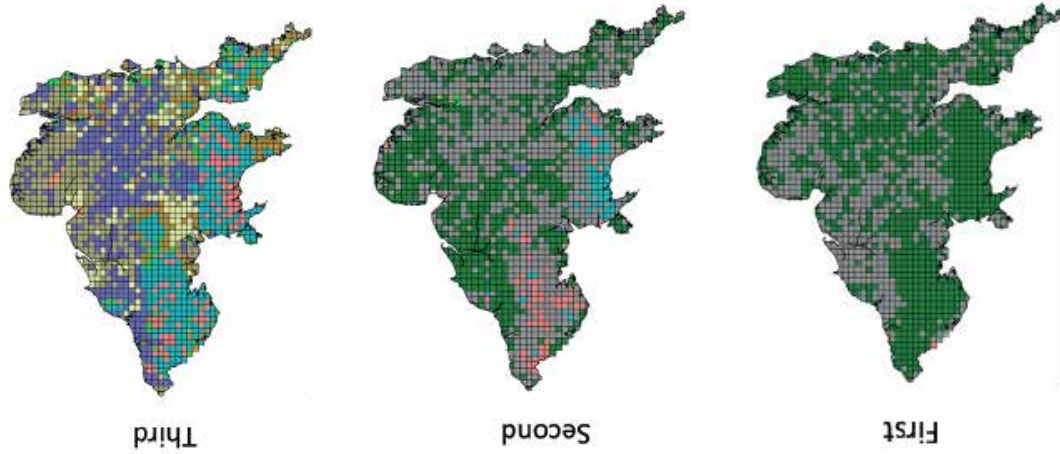
Er mwyn cefnogi'r gwaith o dargedu adnoddau ymhellach, rydym wedi datblygu offeryn ar wahân sy'n mapio diddordeb posibl i fferydd mewn 20 o arferion Dwysau Cynaliadwy, ochr yn ochr ag asesiad eang o'n hyder y byddant yn meddu ar effeithiau cadarnhaol neu negyddol ar y dangosyddion 'canlyniad'. Roedd yr olaf o'r rhain yn seiliedig ar waith cynharach gan Brifysgol Swydd

Hertford a ariannwyd gan lywodraeth.

Mae'r arferion a aseswyd yn amrywio, ac yn cynnwys ffermio manwl, amrywio busnes, gwella technyd a lles anfifiliaid, a chreu cynefinoedd. Gyda chymorth nifer fach o gynghorwyr ffermio, mae'r arferion unigol wedi derbyn sgôr am y manteision a'r gofynion posibl a osodwyd ar reolwyr ffermydd yn nhermau i sgiliau, llafur a chostau, ac yn nhermau i ba radau yr oeddent yn cyd-fynd â mentrau a oedd eisoes yn bodoli.

Defnyddir rheolau syml i gymharu'r gofynion â data'r arolwg amaethyddol cenedlaethol ar ddangosyddion 'strwythurol' y gwyddom o'r llenyddiaeth eu bod yn effeithio ar y capasiti i reoli newid a'r gyfradd ar gyfer mabwysiadu arferion newydd, fel maint

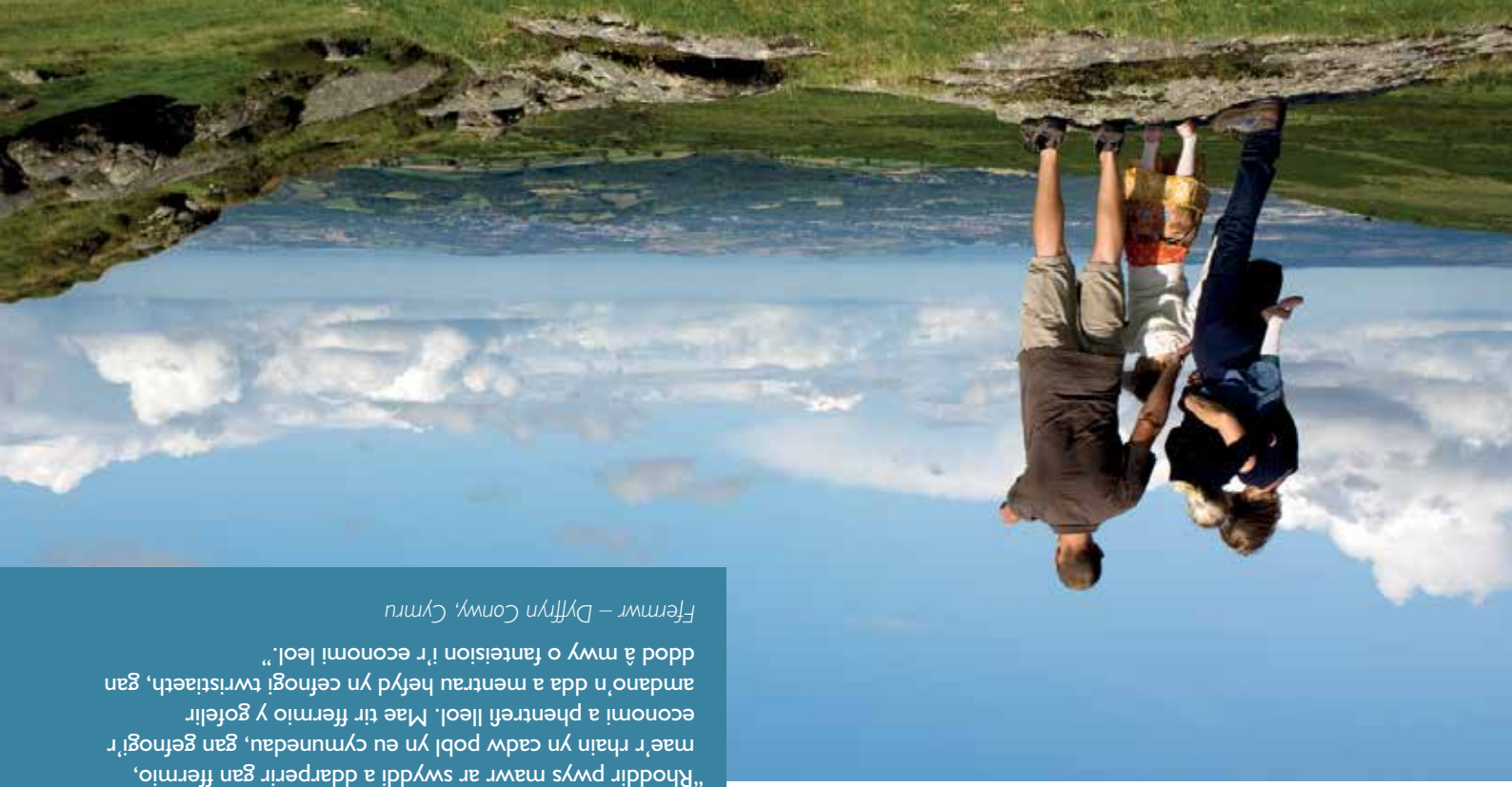
- Animal Improvement and Acquisition
- Animal Nutrition and Growth
- Integrated Crop Protection
- Direct Diversification
- Resource Trading
- Soil Retention
- Grass Improvement
- Habitat Creation
- Soil Structure
- Precision Farming
- Nutrient Efficiency
- Conservation Tillage
- Animal Health and Welfare



Y tair prif strategeth ar gyfer dwysu cynaliadwy. Wedi'u blaenoriaethu ar gyfer darparu gwelliannau lleol i ddangosyddion canlyniadau.

Y fferm a statws y ddeiliadaeth, oedran ac addysg y ffermwr. Er mwyn adlewyrchu pa mor amrywiol y gall dewisiadau unigolion fod mewn perthynas â newidiadau economaidd, newidiadau i gadwraeth neu'r ffordd o fyw, rydym hefyd wedi ymgortori agweddau ar fodolau segmentu cyfredol Defra ar agweddau ac ymddygiad ffermwr er mwyn addasu'r rheolau. Mae'r dull yn cyffredinol a gellid ei gymhwyso'n hawdd i arferion newydd. Arweiniodd hyn at set ychwanegol o ddangosyddion 'perthnasedd', sy'n mapio lefel diddordeb posibl ac amseren ar gyfer cymryd rhan, ac maent yn cael eu hymgortori yn yr Offeryn Mapio ar y We i ddangos lle mae mwy o gyfleoedd i ymgysylltu â ffermyr i'w hannog i fabwysiadu arferion sy'n ymdrin â'r angenion rhanbarthol a gaiff eu mapio gan y dangosyddion 'canlyniad'.

Drwy gyfuno'r dangosyddion 'canlyniad' a 'perthnasedd' gall yr Offeryn Targeddu roi sgôr i ardaloedd ar sail yr ymateb amcangyfrifedig i arferion unigol neu luosog, a mesur buddiannau targedu cymorth. Mae'r dull sgorio yn debyg i'r un a ddefnyddir wrth optimeiddio gwarchod cynefinoedd.

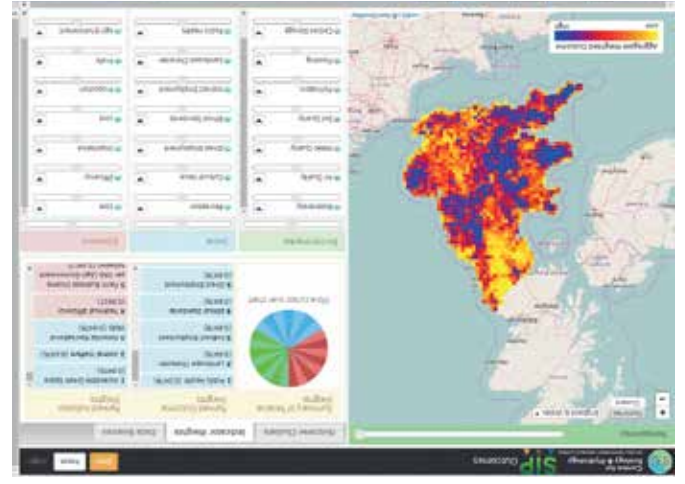


“Rhoddir pwys mawr ar swyddi a ddarperir gan ffermio, mae'r rhain yn cadw pobl yn eu cymunedau, gan gefnogi'r economi a phentrefi lleol. Mae tîr ffermio y gofeli'r amdano'n dda a mentrau hefyd yn gefnogi twristiaeth, gan ddod â mwy o fanteision i'r economi leol.”

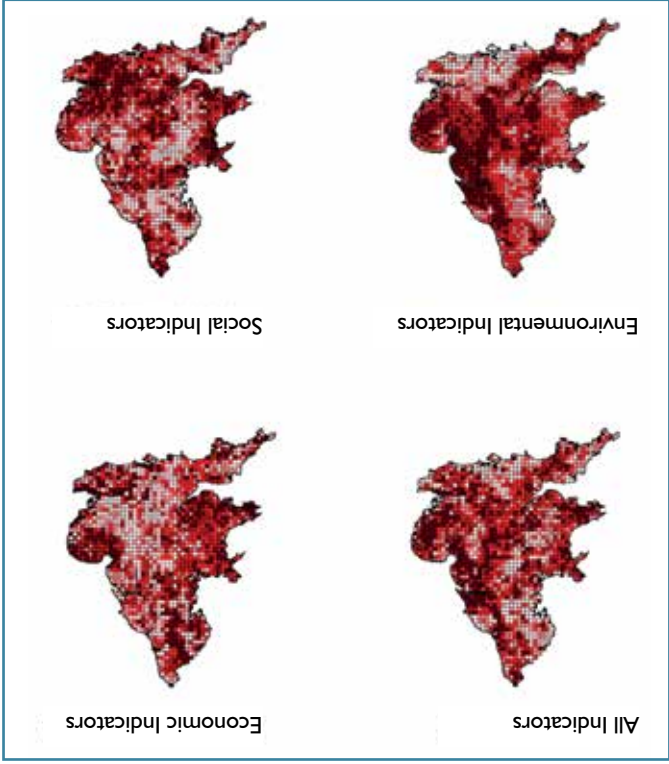
Ffermr – Dyffryn Conwy, Cymru

Map o 'ardaloedd a phroblemau' i'w gwella neu eu hamddiffyn mewn perthynas â chanlyniadau economaidd, cymdeithasol ac amgylcheddol.

Nodi ardaloedd tebyg gan ddefnyddio'r offeryn mapio ar y we i bwysu a mesur pwysigrwydd canlyniadau.



Dyluniwyd yr offeryn mapio ar y we fel system agored, er mwyn i setiau data gofodol newydd gael eu huwchliwyo a'u hintegreiddio'n hawdd â'r dangosyddion cyfredol.





Y Problem

Caiff Dwyasau Cynaliadwy ei ddiffinio fel newidiadau i'r dull o reoli tîr amaethyddol sy'n cynnal neu'n cynyddu faint o gynnyrch amaethyddol a gynhyrchir tra'n gwella neu'n cynnal amrywiaeth eang o wasanaethau ecosystem sy'n gwella ansawdd bywyd, gan gynnwys cadw tîrweiddau naturiol a hanesyddol, cyflenni dwr yfed glân, iechyd drwy weithgareddau hamdden, a chyflieodd ar gyfer cyflogaeth wledig.

Mae dwysau cynaliadwy yn golygu mabwysiadu arferion newydd ar gyfer rheoli ffermydd sy'n gwella effeithlonrwydd ffermio, yn bennaf drwy reoli mewnbwnau fel cemegau a gwrteithiau yn ofalus, ond hefyd drwy fod o fudd i'r amgylchedd. Mae dulliau technegol fel mabwysiadu ffermio manwl a thro'i tîr mewn dull cadwraethol yn arwain at ostyngiad yn y defnydd o wrtaith a thanwydd gan leihau erydiad tîr a dwr ffo sydd wedi'i lygru, tra bod dulliau agro-ecolegol fel cynyddu bio-reolaeth a glaswelltau, codysiau a pherysiau yn arwain at ostyngiad yn y defnydd o gemegau ac yn cynyddu cydnherthedd o ran yr hinsawdd.

Bydd cyflawni newid yn y dull rheoli yn gofyn am fuddsoddi arian ac adnoddau mewn ffordd sydd wedi'i thargedu, yn enwedig o ran cefnogi'r broses o gyflnewid gwylboddaeth o ffermwyr i ffermwyr a rhydweddeithiau technegol, yn yr ardaloedd sydd angen hyn fywaf ac yn debygol o elwa ar hyn. Mae'r amrywiaeth eang iawn o anghenion yn golygu na fydd un asesiad o flaenoriaethau yn bodloni disgwyliadau pob gwyl sydd â diddordeb, ac mae angen rhannu'r dystiolaeth sydd ar gael mewn ffordd sy'n galluogi i safbwyntiau gwahanol gael eu harchwilio er mwyn datblygu consensws ar y camau nesaf. Yn benodol, mae angen deall arwyddocaâ materion lleol yng nghyrd-destun gwahaniaethau rhanbarthol.

Ein hamcan yn y gwath hwn felly oedd datblygu offeryn 'Teipoleg Tirwedd' cenedlaethol dynamiig i'w ddefnyddio gan sefyliadau allweddol fel Defra a Natural England er mwyn deall gwahaniaethau rhanbarthol yn well drwy fapio anghenion a chyflieodd yn gyfrifiadurol a rhyngweithiol, a darparu offeryn am ddim er mwyn nodi ardaloedd a statws tebyg y gellid eu defnyddio fel parthau cynghori, ac er mwyn archwilio canlyniadau blaenoriaethu anghenion gwahanol.

“Beth bynnag a newech mae'n rhaid iddo fod yn gynaliadwy er mwyn sicrhau bod eich tîr yn gallu cynhyrchu yn y dyfodol; mae cynaliadwyedd amgylcheddol yn amddiffyn cynhyrchiant yn y dyfodol. Mae angen cyfarwyddedau gwell o feysydd gwyloddonaeth a pholisi.”
Ffermwyr – Dyffryn Conwy, Cymru

Outcomes

Outcomes		
Economic	Environmental	Social
Production	Biodiversity	Direct Employment
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Other	Pollination	Other
Other	Soil Quality	Other

Canlyniadau economaidd, amgylcheddol a chymdeithasol y mae arferion Dwyasau Cynaliadwy yn effeithio arnynt.

Ymateb SIP

Offeryn Mapio ar y We

Datblygwyd offeryn mapio, y gellir cael mynediad iddo am ddim ar y we, sy'n caniatáu i ddefnyddwyr allu gweld dosbarthiad mwy na 100 o ddangosyddion 'canlyniad' ar gyfer statws Cymru a Lloegr wledig. Mae'r dangosyddion yn mesur yr angen cymharol i wella neu amddiffyn ardaloedd gwledig a'u trigolion, a chawsant eu datblygu drwy integreiddio amrywiaeth eang o arolygon a arennir yn gyhoeddus. Trefnir y dangosyddion yn ôl thema:

▶ Mae dangosyddion economaidd yn mapio cynhyrchiant ac effeithlonrwydd ffermio, gan gynnwys gwerthiannau fesul gweithwyr fferm neu ardal o dir amaethgyniaethau, gwariant ar gemegau amddiffyn cynydau a meddygyniaethau miffeddlogol, a thaliadau a dderbyniwyd o dan gynlluniau amaeth-amgylchedd.

▶ Mae dangosyddion amgylcheddol yn mapio ardaloedd â phrobleu bioamrywiaeth ar gyfer amrywiaeth eang o blanhigion ac antifellaid, a risgiau sy'n ymwneud â llygredd atmosfferig a llygredd mewn atonydd, erydiad tîr a llyfogydd. Caiff gwasanaethau ecosystem penodol eu mapio hefyd, fel y doreth o bryfed peillio.

▶ Mae dangosyddion cymdeithasol yn mapio gwerth ardaloedd cefn gwlad o safbwynt diwylliant a hamdden, fel presenoldeb adeiladau fferm hanesyddol a mynediad cyhoeddus i fannau gwyrdd, ond hefyd cynaliadwyedd incwm gwledig a chyflieodd cyflogaeth. Darperir canllawiau ar y ffynhonnell a dehongliad o bob dangosydd, ynghyd ag offeryn pennu clystyru neu barthau sy'n nodi ardaloedd tebyg mewn ymateb i ddefnyddwyr yn newid pwysigrwydd y themâu drwy symud llithryddion. Gellir rhannu'r mapiau a grwyro gyda chydweithwyr a'u bwriad yw help i ddeall lle mae'r anghenion ar gyfer arferion Dwyasau Cynaliadwy debycat.



NODYN GWYDDONIAETH, POLISI AC YMARFER 7
Offeryn Teipoleg Tirwedd Dynamig ar
gyfer Dwysau Cynaliadwy

