



1. This paper briefly answers the three questions of the inquiry before expanding on them.

2. What are the fundamental outcomes we want to see from agricultural, land management and rural development policies?

2.1 The principal aim of policy should be the encouragement of sustainable land stewardship by landowners, farmers, land managers and foresters with a view to maximising sustainable: food production, wood-fuel, woodland craft and other produce, and value-added productivity.

2.2 Policy should lay a path to facilitating all land management practices to harmonise somehow with the criteria for One Planet Development in the Welsh context in order to reduce Wales' ecological footprint and meet the demands of existing Welsh legislation – as explained below.

3. What lessons can we learn from current and previous policies?

3.1 Previous policies have led us down an unsustainable path that new Welsh legislation already aspires to correct.

4. To what extent should Wales develop its own agricultural, land management and rural development policies or should it be part of a broader UK-wide policy and financial framework?

4.1 Wales is already developing its own unique approach of which it should be proud. Relevant are:

- The Well-Being Of Future Generations Act;
- The Nature Recovery Plan for Wales and the Environment (Wales) Act 2016;
- The Welsh Government's Nature Recovery Plan for Wales (December 2015);

- The Sustainable Management of Natural Resources;
- The Biodiversity and Resilient Ecosystems Duty introduced by the Environment (Wales) Act 2016;
- The Natural Resources Policy for Wales – delivered through Area Statements – contributing to delivery of Well-being objectives and plans;
- The Wales Climate Change Strategy (2010 revised 2014) aspiration to create 50,000 hectares of new woodland up to 2040;
- One Planet Development as outlined in Technical Advice Note 6 and Planning Policy Wales.

5. What is One Planet Development?

5.1 Through Technical Advice Note 6 and Planning Policy Wales (PPW) the Welsh Government sets out land use planning policies to support sustainable rural communities. Section 4 of TAN 6 defines One Planet Developments as applying Low Impact Development (LID) principles in the Welsh context and being exemplars of sustainable development. Criteria include:

1. An initial ecological footprint of 2.4 global hectares per person or less and clear potential to move towards 1.88 global hectare;
2. Buildings being zero carbon in construction and use;
3. If located in the open countryside over a reasonable length of time (no more than 5 years), to provide for the minimum needs of the inhabitants in terms of income, food, energy and waste assimilation. (No criteria of this nature have yet been determined for urban or peri-urban one planet developments but something comparable is anticipated at a collective community level);
4. Carbon analysis;
5. Biodiversity and landscape assessment;
6. Community impact assessment;
7. Transport assessment and travel plan.

6. The Well-Being Of Future Generations Act and One Planet Development

6.1 The Act requires Welsh Ministers to:

- promote sustainable development;
- publish national indicators to measure progress towards the achievement of the Well-being goals;
- take account of UN Sustainable Development Goals (SDGs);
- and of the UK's assessment of the risks of the current and predicted impact of climate change;
- to report on progress every year.

Public Services Boards (PSBs) will translate the Act at county level.

6.2 The table on page 6 shows how the Act's goals are satisfied by supporting One Planet Development (OPD), and which goals, indicators and SDGs are supported by which aspects of One Planet Developments (OPDs).

6.3 Ecological footprinting is a quantifiable but complex process which the Act has in common with OPD, and the experience of existing OPDs could assist Ministers and PSBs in this work.

7. Climate Change

7.1 Under the WCFG Act, PSBs and Ministers must refer to the independent reports from the UK Committee on Climate Change in their assessments. Climate change is integral to all the Well-being goals, which recognise that action on climate change is fundamental to the future prosperity and resilience of our communities. The WCFG Act has strengthened action on climate change as follows:

- The Future Trends report will need to take into account climate risk using the Climate Change Risk Assessment;
- Public bodies will need to take into account the Future Trends Report and the CCRA when developing their plans in achieving the goals;
- Climate change will be a key part of the role of the Future Generations Commissioner for Wales.

7.2 The last CCRA report (UK Climate Change Risk Assessment 2017 Evidence Report – Summary for Wales by the Adaptation Sub-Committee of the Committee

on Climate Change) concluded that among the potentially most significant risks for Wales from climate change are:

- Changes in soil conditions, biodiversity and landscape due to warmer, drier summers;
- Reductions in river flows and water availability during the summer, affecting water supplies and the natural environment;
- Increases in flooding on the coast and inland;
- Changes in species including a decline in native species, changes in migration patterns and increases in alien and invasive species; and
- Increases in the risk of pests and diseases affecting agriculture and forestry. Risk to livestock is a particular concern.

7.3 It says: *"There is a need for a realistic assessment of the suitability of current agricultural and forestry systems in Wales in the future given the projected changes in droughtiness and aridity."* And: *"There is (presently) minimal strategic planning or consideration of future land-use and the implications of changing suitability of land for agricultural production."*

7.4 According to the Welsh Government's response to the CCRA, the potentially most significant opportunities for Wales appear to be:

- Increases in grass yields, allowing a potential increase in livestock production;
- Increases in tourist numbers and a longer tourist season; and
- Reductions in cold-weather related illness and death.

7.5 Yet there are clearly more opportunities than these. They lie in the consequential co-benefits of switching to land management practices that address climate change risks and adaptation, by encouraging diversity of production, regenerative agriculture and mitigation.

7.6 But there is ignorance of how OPD achieves this. The CCRA comments that capacity building is needed "to equip decision makers and practitioners to make timely, well-evidenced and well-resourced decisions".

8. Contributions of One Planet Development to sustainable land management

8.1 14 risks and opportunities are listed in the CCRA report. Of these, adaptation measures include:

1. Measures to reduce emissions from ecosys-

tems;

2. Restoration of degraded ecosystems;
3. Delivering coherent ecological networks; resilient trees, crop varieties and species and cropping regimes;
4. Action to reduce pressures on soil and increase uptake of soil conservation measures and carbon sequestration;
5. Action to reduce risks from both drought and flooding and prevent flooding by planting more trees upstream and increasing the ability of the soil to retain moisture.

8.2 These are all facets of OPD since it incorporates agroecology and agroforestry.

8.3 In addition, risks to biosecurity are countered by a holistic approach to pest management. This is achieved by organic agriculture and a reduced use of nitrogen-based fertilisers, pesticides and herbicides, with increased use of natural soil enrichment.

8.4 The production of artificial fertilisers is itself a major source of carbon emissions which would be reduced by this transformation of agriculture.

8.5 Amongst other co-benefits are an increase in jobs, and in training in the skills required.

9. Food security

9.1 The CCRA report projects a food yield decline in many regions of the world as a result of changing weather patterns.

9.2 To compensate Wales will need to grow more of its own food. But there are environmental and social risks arising from any intensification of Welsh agriculture. It is necessary to avoid negative consequences for longer-term soil productivity, landscape and biodiversity.

9.3 This could be achieved with the help of OPD land management practices. Welsh agriculture could return to a pattern more consistent with that before World War II when there was more mixed farming and vegetable production. Farms were smaller, there were more jobs and Wales was more self-sufficient. Even as recently as 1973 there were thousands of dairy farms in West Wales. But now, even sheep farms are in trouble.

9.4 Wales might in this way enhance overall productivity and crop variety and gain a comparative advantage in specific products, as well as improve the demographic and economic sustainability of rural communities, reduce food miles, and improve resilience to climate change.

10. Soil quality

10.1 Years of application of nitrogen fertilisers – encouraged by European legislation but also by the demands of the market – has reduced soil quality to where typically organic matter forms just 1% of soil [source: Patrick Holden of the Sustainable Food Trust].

10.2 Therefore soil needs to be repaired with the addition of more organic matter and atmospheric nitrogen. This is helped by a crop rotation process, organic practices and agroecology.

10.3 This implies less housing of grain-fed animals within sheds and more outside grazing on grass and clover fields as part of the rotation system.

10.4 Labour-intensive low-input mixed farming using these well-researched organic methods sequesters more carbon in the soil and encourages biodiversity.

10.5 This type of farming practised by OPD, is an example of sustainable land stewardship and promotes resilience, climate change adaptation and mitigation.

11. Biodiversity

11.1 The Welsh Government's Nature Recovery Plan for Wales (December 2015) identifies the issues to be addressed to reverse the loss of biodiversity. It includes objectives to tackle pressures, particularly by increasing the resilience of the natural environment, to improve the ability of species and habitats to adapt.

11.2 This is underpinned by the Sustainable Management of Natural Resources and the new Biodiversity and Resilient Ecosystems Duty introduced by the Environment (Wales) Act 2016.

11.3 These require taking into account the resilience of ecosystems, particularly their diversity, condition, connectivity, extent and adaptability, to strengthen their ability to continue to deliver the range of serv-

ices required by society now and in the future.

11.4 This approach underpins the development of the National Natural Resources Policy for Wales and delivery through Area Statements. These will contribute to or inform delivery of the Well-being objectives and plans to enable management of natural resources to feed into the preparation of local development plans.

11.5 NRW has been trialling this approach with the purpose being to: "deliver area based planning locally and showcase how by working with others we can deliver multiple benefits for the environment, people and the economy".

11.6 OPDs are mandated by the planning conditions to support and monitor biodiversity. An extension of this approach should be made to all farms and smallholdings and we suggest this could be integrated with NRW's trial results.

12. Woodland

12.1 The Wales Climate Change Strategy (2010 revised 2014) contains an aspiration to create 50,000 hectares of new woodland up to 2040.

12.2 OPD land management practice is often woodland-based and involves planting trees for conservation and productivity. Non-woodland based OPD often requires coppice for woodfuel which is an opportunity for habitat creation.

13. Flooding and drought

13.1 There is currently no process in place that requires land managers to assess the extent to which their practices may be exacerbating flood risk.

13.2 The CCRA notes that a policy is required to incentivise management practices that increase the natural capacity of soils and vegetation to store water or retard runoff rates.

13.3 OPD land management practice explicitly considers the impacts of their development on others, including flood risk where appropriate. Land management practices are mandated to maximise rainwater capture and use on site.

13.4 This mandatory approach could be integrated with the voluntary agri-environment schemes now funded under Pillar II of the CAP and the Glastir Advanced scheme, which trials incentives to land management interventions that reduce run-off, aiming to roll them out across Wales.

13.5 Regarding risks noted in the CCRA to business operations from water scarcity or power cuts due to extreme weather events, the requirement for OPDs to be self-sufficient in locally-sourced water and energy supply, and to process their own waste, increases their resilience.

14. Evidence

14.1 The intensive monitoring regime required by the OPD policy has contributed to a growing evidence base around the benefits of ecologically sustainable farming methods. For example, the recent conversion of a Pembrokeshire sheep farm to mixed One Planet smallholdings over five years.

14.2 Lammas in Pembrokeshire was converted under the county's Policy 52. Nine families each farm around six acres of what was one single sheep farm, comprising mostly upland pasture with some pine plantation. It's marginal land some said unable to support anything but sheep.

14.3 The variety of produce from this land, once the soil has been enriched, is astonishing for such a location.

14.4 Productivity data is made available annually as a condition of planning permission. 2015 figures:

Value of needs met directly from site (fuel, energy, food, water etc.): £59,109.

Income from land-based produce: £26,873.

From educational activities: £21,283.

Total from land-based activity: £107,265.

(Not included: income from feed-in tariffs.) Value placed on total household needs: £116,474.

14.5 So in their 6th year Lammas met 92% of household needs from the land. Prior to conversion the single farmer's annual income was £2500 to £3500 from raising sheep (not including agri-subsidy). This is a phenomenal 30-fold increase in land-based productivity.

14.6 NO subsidies are given or required for this type of farming, but it IS very hard work. The planning conditions are onerous, requiring people to both build a house and achieve this level of productivity in five years. But it shows what can be done. Productivity will now only increase as soil fertility increases and the landworkers are able to spend more time on the land.

14.7 For those farms already with homes on them, conversion to this type of practice, a combination of agro-forestry, conservation, smallholdings, market gardening and livestock, would be easier.

14.8 The land would be more productive; with greater employment per acre, without subsidies being required. It does require shifts in policy, in the market, and people willing and appropriately trained.

14.9 There are presently 22 OPDs in Wales. Many more are in the pipeline. They will provide a wealth of further evidence in the next few years' monitoring reports.

15. Overcoming barriers

15.1 The obstacles to present and future well-being and resilience are systemic throughout the food chain and need addressing throughout the food chain.

15.2 So at the same time, at the retail end, there needs to be encouragement for supermarkets and shops to take more local farm produce of all types.

15.3 This is a larger scale implication of OPD. Such projects form an active network of local producers, sharing local processing facilities and providing peer support and networking opportunities.

15.4 In the future we see an expanding role for this network, to include all environmentally sustainable farm production and not just those which have OPD planning permission under TAN6.

16. Subsidies

16.1 Following Brexit there is an opportunity to change the pattern of subsidy and put in place policies and support to move agriculture in this direction.

16.2 Any support and subsidies offered that replace

the CAP should encourage sustainable stewardship of the land, integrated with the farming process, and not reduced to the margins – as in hedgerows – as it is at present.

16.3 Modern stewardship schemes are mistaken in separating stewardship from farming itself. Incorporating stewardship into all farming practice is a particular positive feature of OPD.

17. Training

17.1 Current training for farmworkers does not make them sufficiently aware of the benefits of ecologically sustainable farming practices.

17.2 An important role of OPD projects is to provide training and demonstration opportunities where such practices can be witnessed. These should be promoted. More are required.

17.3 An evolution in the content of education and training is necessary, to introduce the above skills and knowledge to the next generation.

Goal in the WBFG Act	Description of the goal	How One Planet Developments can help	Supported Indicators & SDGs
A prosperous Wales	An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.	One Planet Developments help to create jobs due to the intensive nature of growing, with more jobs provided per hectare, and more productivity, than on a conventional farm. The requirement for land-based activities means that as the number of such developments increases, the more self-sufficient in food and other agro-forestry products Wales will become.	20,21
A resilient Wales	A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).	The requirement for biodiversity and landscape assessments helps to protect and restore habitats. One Planet Developments must use traditional management practices and increase the number of pollinators, natural predators to pests and diseases, and birds; they must form wildlife corridors and conserve and enhance the flora and fauna identified in the Local Biodiversity Action Plan. They should reintroduce lost features such as traditional orchards, woodland, hedgerows, stone walls and wetlands; and create ponds, use traditional woodland and shelterbelts; and enhance carbon storage. They should create new natural habitats through good land use and integration into the built environment, and use water efficiently. Trees are often planted and soil enriched with organic material to reduce runoff and flooding and to increase soil fertility and carbon content. The requirement to be self-sufficient in water and sewage treatment reduces nitrate pollution and retains nutrients. The requirement to deal sustainably with waste results in almost zero waste and closed loop resource reuse.	13, 15, 32, 41, 42, 43, 44 SDG12, SDG15
A healthier Wales	A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.	Working on the land and eating fresh local, organic produce helps promote good health and well-being, not just for the practitioners but those in their community who are customers.	5, 29 SDG11
A more equal Wales	A society that enables people to fulfil their potential no matter what their background or circumstances (including their socio economic background and circumstances).	Anyone may, in theory, live and work on a One Planet Development. Training courses are being provided to train people in the necessary skills. Models are available which, like Steiner communities, can provide gainful occupation and care for those of limited abilities. So far, One Planet Developments have managed to provide very affordable housing.	SDG11, SDG12
A Wales of cohesive communities	Attractive, viable, safe and well-connected communities.	One Planet Developments are required to integrate with their local community and conduct a community impact assessment. They must record the quantity and value of local food, goods and services sold or exchanged for local consumption and take steps to redress any negative impacts.	26, 27
A Wales of vibrant culture & thriving Welsh language	A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.	One Planet Developments are required to survey and curate any known sites of cultural importance within their curtilage and help to strengthen local landscapes. Buildings should blend in visually and respect local architecture. Current projects include several Welsh-speaking households and almost all the non-speakers are learners, although this is not explicitly required by policy.	40
A globally responsible Wales	A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.	The requirement to reduce one's ecological footprint to 1.88 global hectares per person is in line with a global equitable spread per head of population of the planet's resources. The requirements 1) to reduce the need to travel and encourage low and zero carbon modes of transport, 2) for 100% renewable energy, and 3) for zero carbon buildings, all help to tackle climate change.	12, 14, 33, 41, 42, 46 SDG7, SDG11, SDG13