

“Water, energy and food for resilient livelihoods in Plymouth, Dartmoor and the Tamar Valley”



Moving towards a sustainable economy delivering resilient livelihoods in the Plymouth, Dartmoor and the Tamar valley region poses a challenge to local, national and international resource management. In this context it is important to understand the current and future balancing of the water, energy and food (WEF) nexus. The WEFWEBS project brings together researchers from a wide range of disciplines with the aim of mapping the WEF nexus across spatial and temporal levels and over multiple dimensions. In pursuance of this objective, a workshop was held in Plymouth on the 20th-21st of February 2017 bringing together stakeholders representing the NGO, civil society, local government, research and private sectors to explore resilient livelihoods in the Plymouth, Dartmoor and the Tamar Valley and their relationship with the WEF nexus.

A short pre-survey conducted prior to the workshop identified key concerns of participants concerning livelihoods in the region. Among the factors participants considered to be most significant and uncertain climate change featured prominently alongside Brexit. Other issues highlighted included patterns of development in the area and how new housing demand and construction impacts on different parts of Plymouth, Dartmoor and the Tamar Valley.

The workshop involved a series of participative activities. These included a visioning during which participants developed a future vision for the area; and a normative backcasting during which participants developed plans to achieve their desired vision. Following from this, participants were asked to develop future scenarios against which the robustness of their backcasted plans could be tested. Finally a series of mapping and regulatory exercises were undertaken to develop further insights into local regulation and the WEF Nexus.

The visioning exercise enabled participants to visualise what resilient livelihoods in Plymouth, Dartmoor and the Tamar Valley would look like. Three elements of this vision were identified by participants as having the highest priority. These were (i) integrated catchment management, (ii) interdisciplinary governance, and (iii) whole food system. These three vision elements formed the basis of a backcasting exercise: working backwards from a desirable future participants identified the steps required that connect the desired future to the present. Participants were divided into three groups each of which took responsibility for developing a backcast plan for one of the three vision elements. As a first step in the process the three groups elaborated a vision.

The interdisciplinary governance vision was: *“The Plymouth, Dartmoor, and Tamar Valley region successfully establish themselves as an example of innovation and resilience concerning water, energy, food, health, the environment, well-being, and livelihoods (including housing and transport), championed by interdisciplinary apolitical governance and wide spread community engagement with a “can do” spirit.”*

For the catchment management group; *“An effective multi-level governance exists, which makes it possible to conserve the ecosystem values from the region while representing civil society and meeting local societal needs. The Tamar catchment presents a more sustainable use and management of the terrestrial and marine water environment, having achieved clean water and high level of biodiversity. The catchment is managed following an integrated land and water management, particularly for flooding management. Blue and green corridors are created and maintained.”*

The whole food system group: *“Tamar and Plymouth successfully implement a whole food system approach, which is more diverse, local, organic and sustainable, with better landscape management.”*

It was notable that all the plans coalesced around questions of governance scale and integration. Further, all three groups identified organisational innovations at local level as critical elements of their plans via an area based integrated approach linking concerns across the WEF nexus.

Following the completion of these backcasts, groups developed future scenarios setting out how they felt conditions might change in the area over a 25 year timeframe. The three scenarios developed were: De Skilled Development (DD), New Regionalism (NR) and Plain Sailing (PS). Through this exercise evidence emerged of local perceptions of specific WEF relationships and interdependencies. Notable in this context is the relationship between food security and the management of water and energy resources. The scenario with the worst food security status (DD) is consistent with severe climatic impacts and reduced scope for addressing flooding and drought conditions. By contrast in a context where food security is achieved participants felt that there was more scope for measures to address environmental challenges. The scenarios also reflect a complex view of the relationship between the state and civil society. In the second Scenario (NR), power is devolved to local government and civil society organisations are well placed to influence decision making, this contrast with the other two scenarios, which envisioned strong centralised power making. Looking across the three scenarios it appears to be the case that the level and nature of local organisation is linked with two things (i) the extent of the challenges posed to the areas inhabitants by environmental and economic conditions, and (ii) the quality of governance.

Once completed the scenario narratives were used to test the robustness of the groups’ backcasted plans. All three groups produced broadly similar conclusions, i.e. measures to address environmental challenges are more likely to be successful in a situation in which people are more food secure and where there is support for their actions. While all three groups’ plans suggested decentralised forms of governance as part of their plans, they all identified the least obstacles to the achievement of their visions under scenario 3 (PS) in which strong centralised government is envisaged. This may suggest that the form governance takes is not as significant as the outcomes it achieves.

Following scenario testing members of the groups explored how stakeholders see issues in the WEF nexus. Among the important interdependencies identified are those linking food energy and water via agricultural production systems. Overall land management also features strongly in relation to interdependencies between water quality and food security. Another trade-off identified is that between solar power, energy and food security. While solar power generation increases energy security it is linked to reductions in food security.

Key Messages

- Achieving resilient livelihoods will require solutions which embody a systems approach that addresses multiple linked issues transcending traditional sectoral and administrative boundaries.
- The participants’ expressed concerns with the accountability of existing governance and the limited level of local participation in regulation.
- There is a perception that measures to protect the environment are likely to be easier to achieve in situations of lower inequality and assured food security.