

“Water, energy and food for a resilient Oxford”



The WEFWEBS project brings together researchers from a wide range of disciplines and backgrounds with the aim of mapping the nexus of UK Water, Energy and Food (WEF) systems. Four stakeholder workshops were planned as part of this work. This report summarises the process and findings of the first which was held in Oxford, bringing together stakeholders from NGOs, Civil Society, local government, research and Private Bodies. The workshop consisted of a series of participative exercises.

The first of these involved the development of a vision. Participants were invited to explore desirable futures for a water, energy and food resilient Oxford and prioritise three vision elements. These were; Land and Ecosystem Services, The Circular Economy and Energy, and Self-Sufficiency. These three areas became the subject of a backcasting exercise.

Back-casting is a process for working backwards from a desirable future to identify the required steps to connect that future to the present. Participants divided into three groups each of which took responsibility for developing backcasted plans to achieve one of the vision elements identified above. Groups first expanded these vision elements into detailed visions. These were:

Land for ecosystems services group: “The landscape serves the diverse needs of Oxfordshire society. The community wants, and is able, to engage with landscape and nature. Knowledge of how to make the landscape more sustainable is translated into action. Ecosystem services are acknowledged and valued. Oxford is a living laboratory – an exemplar of excellence – in which evidence on system feedbacks is continuously collected and used to inform decisions.”

Circular economy group: “Oxfordshire successfully implements and follows a circular economy. Circular economy is envisioned as healthy life, with accessible and sustainable jobs with an eventual zero waste production. People live according to their needs and citizens are active and aware of and participate in a connected circular economy.”

Energy efficiency and self-sufficiency group: “Oxford is a carbon neutral and energy efficient city, making use of clean, renewable and where possible locally produced energy to meet its energy requirements.”

Embarking from these collective visions of a desirable future, each group worked backwards to the present producing a detailed plan. In so doing all the groups identified weaknesses in current capacity and elaborated “soft” measures to encourage behaviour change as necessary precursors to more practical action. All three of the groups also envisaged the need for institutional changes. The energy group for example emphasised the role of existing and need for new regulations in achieving its vision. Other issues which arose during the backcasting exercise included the role assigned to the private sector and the role of responsible consumption.

Scenarios were then developed to provide a mechanism through which participants could test the resilience of their back-casted plan under a range of future conditions. Participants worked with the research team to develop three scenarios. These were:

Scenario 1 Hell: This scenario led to increased poverty, hunger and a decline in public services. All three groups pointed to increased economic inequality giving rise to geographical division with deeper divisions between rich and poor areas.

Scenario 2 Heaven: This scenario saw an improvement in general levels of wellbeing with increased wealth contributing to better diet and more outdoor activities. The population is better educated and has access to high quality employment. The built environment is conducive to living in the city.

Scenario 3 Mixed: Features of this scenario were an increased number of people living outside of Oxford city with urban sprawl outside of the city leading to a rise in commuting via private car and consequently traffic congestion leading to declining air quality, health and wellbeing.

The groups considered how each scenario would impact on their plans resulting in the identification of factors which support and impede nexus management summarised in the table below.

Factors Supporting Good Nexus Management	Factors Which detract From good Nexus Management
Affluence	Poverty
Local Commitment	Local Apathy
Low Inequality	High Inequality
Good Public Transport	Poor Public Transport
Appreciation of Natural Capital is Valued	Natural Capital is Underappreciated
Natural Capital is maintained	Natural Capital is degraded
Active "Outdoor" lifestyle	Sedentary Lifestyle
Voluntary Compliance	Coercive Regulation
High Density Urban Housing	Low Density Suburbs "Sprawl"
Short distance to work	Long commutes to work

On the basis of the analysis undertaken during the workshop, areas identified for future action included:

- a) Measures to strengthen the capacity of community based organisations to actively participate in addressing nexus challenges. This would be consistent with the issues identified in the scenario testing which each in their own way highlight the importance of strong civil society to actively address the different changes depicted in all three scenarios.
- b) Measures to reduce severe levels of inequality as a pre-condition for effective nexus management.
- c) Measures to formalise and streamline relationships between local authorities and civil society organisations.
- d) Measures to integrate existing organisational effort relating to the WEF nexus.
- e) Measures to promote Oxford's natural capital.
- f) Measures to ensure greater co-ordination of policy which relates to areas of interdependence