

Researchfish Award Download for

ES/S002243/1

**JPI Urban Europe SUGI - Waste Food-Energy-Water Urban Living
Labs - Mapping and Reducing Waste in the Food-Energy-Water
Nexus (WASTE FEW ULL)**

Professor Susanne Charlesworth

Award Title	JPI Urban Europe SUGI - Waste Food-Energy-Water Urban Living Labs - Mapping and Reducing Waste in the Food-Energy-Water Nexus (WASTE FEW ULL)
Award Reference	ES/S002243/1
Research Organisation	Coventry University
Funding Start Date	2018-06-02
Funding End Date	2021-06-01
Funding Value	204933 GBP
Award Categories	Department, Scheme, Grant Category, Role Name, DEP CDR ID, Call, UKRI Award Type
Award Abstract	<p>The aim of the WASTE FEW ULL project is to develop and test internationally applicable methods of identifying inefficiencies in a city-region's food-energy-water nexus. We will undertake this through an international network of industry/civic society-led Urban Living Labs (ULL) in four urban regions - UK (Bristol), Netherlands (Rotterdam), South Africa (Western Cape) and Brazil (Campinas). Partners in Norway and the USA will provide economic valuations of potential impact, and impact-led public education, outreach and dissemination. Waste occurs across food, energy and water systems; at the interface of these systems, waste increases significantly the over-consumption of our limited resources (FAO, 2017): food (e.g. energy lost in food storage), energy (e.g. used to clean water) and water (e.g. nutrients lost in sewage). Resource scarcity is not only a matter of efficiency, but of access, distribution and equality (Exner et al, 2013). Each urban context has different pressures and opportunities (Ravetz, 2000). The focus of the WASTE FEW ULL project is therefore not so much on the specific downstream challenges, but on upstream processes by which cities can identify, test and scale viable and feasible solutions that reduce the most pressing inefficiencies in each context.</p>

Lay Summary

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Influence on Policy, Practice, Patients and the Public

Influence Name	Future engagement with policymakers
Influence Type	Influenced training of practitioners or researchers
Healthcare Area	
Title	
Issuing Organisation	
Cited Publication	
Year First Realised	2018
Geographic Influence	Local/Municipal/Regional
Country	United Kingdom
Area of policy influence.	Agriculture, Food and Drink, Chemicals, Energy, Environment, Manufacturing, including Industrial Biotechnology
Describe Other	
Specific Impacts	Not known
Impact Description	
URL	
Digital ID	
Source	Manual
Publication ID	60360d56830570.54430479

Influence Name	Influence on policy and policymakers, Sao Paulo, Brazil ULL
Influence Type	Influenced training of practitioners or researchers
Healthcare Area	
Title	
Issuing Organisation	
Cited Publication	

Year First Realised	2019
Geographic Influence	Local/Municipal/Regional
Country	Brazil
Area of policy influence.	Agriculture, Food and Drink, Environment, Government, Democracy Justice
Describe Other	
Specific Impacts	Improvements in public well-being: quality of life or morbidity or survival, changes in efficiency and effectiveness of public service delivery, improved regulatory environment, economic impacts, changed public attitudes, Improved environmental sustainability
Impact Description	Quality of sustainability of food production value chain P.S. as an example, SP ULL has developed a decision tool that fosters innovation adoption and diffusion for sustainability practices in agriculture, as agroecological practices and food production integration, as aquaponics. The government of the State of São Paulo Secretary of Agriculture (our partners) has a Community Supported Agriculture Platform, in which prices and environmental footprints can be managed, reducing food losses and waste. The ULL decision tool is part of this platform, supporting community of producers, supply chain actors and food buyers to choose the most "sustainable" way of food production and trade. But this is supposed to be an evolutionary process, in which a higher level of "sustainable production and commercialization will rise, once this initiative has only begun in 2019. We see this new community joint decision making process as a "situation arena", in which a learning process to choose more sustainable forms of agricultural practices and commercialization can evolve for a so called "transition for sustainable food systems".
URL	http://agrosp.sp.gov.br/
Digital ID	
Source	Manual
Publication ID	6034c17bbb2472.95600536

Influence Name	Training of practitioners and community stakeholders, the Water Hub, South Africa ULL
Influence Type	Influenced training of practitioners or researchers
Healthcare Area	
Title	
Issuing Organisation	
Cited Publication	
Year First Realised	2020
Geographic Influence	Africa
Country	
Area of policy influence.	Environment
Describe Other	
Specific Impacts	Effective solutions to societal problems, improved environmental sustainability
Impact Description	Training on the concepts of the nexus, waste reduction using the circular economy and the role of the Water Hub to improve sustainability of food production systems. introduction of the ability to improve water quality using bioremediation, irrigate food crops, and generate energy from the developed systems.
URL	http://www.futurewater.uct.ac.za
Digital ID	
Source	Manual
Publication ID	6034c8c25b79a2.39580740

Publications

Adina Paytan. (2022). The Waste FEW ULL project - searching for inefficiencies in the Food-Energy-Water nexus. *Research Features*, 139, pp. 30-37.

Ester Dal-Poz, Carolina da Silveira Bueno, Marcos Rehder Batista, Camila Neubart Favero, Erika Cristina Francisco, Alessandro Piolli. (2019). The institutions for institutional transitions. World Interdisciplinary Network for Institutional Research Conference, September 19-22th 2019, Lund, Sweden.

Greer R, von Wirth T, Loorbach D. (2020). The diffusion of circular services: Transforming the Dutch catering sector. *Journal of Cleaner Production*, doi: [10.1016/j.jclepro.2020.121906](https://doi.org/10.1016/j.jclepro.2020.121906)

Greer R, von Wirth T, Loorbach D. (2021). The Waste-Resource Paradox: Practical dilemmas and societal implications in the transition to a circular economy. *Journal of Cleaner Production*, doi: [10.1016/j.jclepro.2021.126831](https://doi.org/10.1016/j.jclepro.2021.126831)

Greer, R, Wirth, T., Loorbach, D. (2019). Drivers and barriers for institutionalizing emergent cross-sectoral symbioses at the food-energy-water nexus. 10TH International Conference on Industrial Ecology, July 7th-11th 2019, Tsinghua University, Beijing, China..

Parsa A, Van De Wiel M, Schmutz U. (2021). Intersection, interrelation or interdependence? The relationship between circular economy and nexus approach. *Journal of Cleaner Production*, doi: [10.1016/j.jclepro.2021.127794](https://doi.org/10.1016/j.jclepro.2021.127794)

Rachel Greer, Timo von Wirth, Derk Loorbach. (2020). Transitioning from a linear to circular economy: widening perspectives on the Waste-Resource Paradox. Network of Early career researchers in Sustainability Transitions (NEST).

Rocha LA, Dal Poz, M. E. S., Lima, P. V., Khan, ... N. G. (2019). Corruption, bureaucracy and other institutional failures: the “cancer” of innovation and development. *Economics Bulletin*, 39(3), pp. 1740-1754.

Taoyuan Wei. (2020). Estimating income effects of food waste reduction at the food-energy-water nexus: conference cancelled due to Corona virus. 2020 International Conference on Resource Sustainability (icRS 2020).

Further Funding

Funding Scheme	Coventry University Internal award: PhD studentship
Organisation Name	Coventry University
Type	Studentship
Funding Currency	GBP British Pound Sterling
Funding Amount	56916
Consortium Funding Amount	0
Reference Number	
Start Month	May
Start Year	2019
End Month	May
End Year	2022
Digital ID	
Source	RF
Source ID	
Original Source ID	
Publication ID	5c66f134e33063.40952974

Funding Scheme	Future Earth
Organisation Name	Coventry University
Type	Research grant (including intramural programme)
Funding Currency	GBP British Pound Sterling
Funding Amount	80000
Consortium Funding Amount	
Reference Number	
Start Month	January

Start Year 2021
End Month December
End Year 2021
Project URL
Digital ID
Source RF
Source ID
Original Source ID
Publication ID 6034ca616deb89.14661907

Funding Scheme PhD studentship
Organisation Name Coventry University
Type Studentship
Funding Currency GBP British Pound Sterling
Funding Amount 11383
Consortium Funding Amount 0
Reference Number
Start Month May
Start Year 2019
End Month May
End Year 2022
Digital ID
Source RF
Source ID
Original Source ID
Publication ID 5c69758a52e5a0.50821525

Other Outputs/Outcomes

Output Name	Conference presentation by Rotterdam ULL PhD student
Details and Impacts	Presentation accepted for NEST (Network of Early Career Researchers in Sustainability Transitions) conference April 4-5 in Lisbon, Portugal. Our particular case in Rotterdam will examine Blue City as an urban living lab (ULL) and therefore vehicle to connect the niche with regime actors, according to transition theory. Within the participatory research, the resource flows of specific services, e.g. catering, will be analyzed to identify critical dysfunctional linear pathways and agree the response most appropriate to the local context (policy intervention, technology diffusion, etc.). The ULL will serve as a testing space for material and energy symbioses within an ecosystem of circular entrepreneurs that could then be diffused through replication or upscaling on a city or regional level
Progressed Further	N/A
Discovery Details	
Patient Benefit	Our results will have both implications for science (in developing a methodological framework for understanding diffusion within and between networks) and practice (to develop support for navigation through such diffusion processes, and the potential design of political processes for the future). We will present the methodological design and first results from our case study towards such a diffusion framework. This will provide insights into transition dynamics towards further institutionalization of niches.
Existing output type	

Output Name	Modelling of modes of food production, Sao Paulo Brazil ULL
Details and Impacts	The SP ULL initiative is a "Janus Bifront" project. It looks back, modelling and comparing food production modes (using system dynamics tools and agent base ones); this procedure permits to understand, in a qualified way, in which terms some modes of production are more or less sustainable. The results for this first technical procedure are integrated with a second

approach, based on agent expectations about sustainability transition. It is a foresight approach, in which a Delphi instrument guides in which terms communities of producers, policy makers, NOGs agents, sellers, buyers, consumers, etc. are involved in a more sustainable way of life. The foresight methods used are Multi-criteria Decision Making Analysis, that permits to understand a broad set of criteria (as the relations between carbon footprints of agroecological production and family incomes, for instance, or between Community Supported Agriculture indexes and land use, or between land use and rural productivity, or land use and impact at the forest , once the geographical area we have been dealing with is at the border of the Atlantic Rainforest).

Progressed Further

N/A

Discovery Details**Patient Benefit**

I see this work as an effort in which many initiatives like this can overlap the current conditions, replacing "less sustainable conditions of food production" for a more sustainable one. It takes time. That is why to create a network of shareholders is very important for this project.

Existing output type

Further Funding

Output Name

PhD student started in January 2020

Details and Impacts

One of 2 studentships half funded by this project, half funded by Coventry University's Doctoral College. Will focus on system dynamics modelling

Progressed Further

N/A

Discovery Details**Patient Benefit**

Outcomes of the research will strengthen WASTE FEW ULL, by having full time, dedicated researcher concentrating on a specific topics. The thesis will enable more publications, conference presentations and engagement with stakeholders, practitioners and the community.

Existing output type

Output Name	PhD student started in September 2019
Details and Impacts	One of 2 studentships half funded by this project, half by Coventry University's Doctoral College. This project will focus on agent-based modelling
Progressed Further	N/A
Discovery Details	
Patient Benefit	The Waste FEW ULL project will benefit from a full time researcher concentrating on the subject area specified above. The studentship will produce a thesis, peer reviewed journal articles, conference presentations and will enable closer communication with stakeholders, practitioners and the community.
Existing output type	

Output Name	Planning and Environment Research Group (PERG) RGS-IBG Annual International Conference sponsored session 31st August - 3rd September 2021
Details and Impacts	This special session has been accepted by PERG, and will be sponsored by them and is part of our "Future Steps". This is what we proposed: Conference topic: "borders, borderlands and bordering". Title: The food-energy-water nexus: boundaries, processes, and the circular economy Waste generated in the "nexus" between managing water and the production of food and energy is unsustainable. By identifying these dysfunctional linear streams, where the waste generated adds to landfill, climate change and environmental degradation, there is potential to use it, turn it into a marketable product, or harvest it and contribute to the Circular Economy. We are particularly interested in case studies, nationally and internationally, the extent to which the circular economy has been achieved, assessment of problems encountered and strategies to engage with stakeholders and communities. What processes can identify and delineate boundaries around the plurality of food, energy and water systems in each context (actors, issues, geographies, power relations), and how they shift over time? As the use of the Living Lab concept in studies becomes ever more common, we would be interested in how

successful this has been in studies of the nexus – is it possible to compare across Living Labs with their different politics, policies, inequalities and geographies? We solicit papers, posters, videos and case studies from academia, stakeholders and practitioners illustrating the many ways in which these wastes are identified, how they are converted into something useful for society, a scalable commercial product for example, and how wasteful consumption has been reduced. We invite comments on the sustainability of such approaches: are they technologically and/or politically feasible and economically sound? What new processes have been developed enabling study of the nexus, and conversion of the wastes, how successful are they? Finally, we will organise a Quick Fire panel of three 5-minute opinion pieces followed by 15 minutes discussion on: Does nexus have a future, or is it just part of throwaway fashion? We also propose a Special Issue on the subject in Urban Planning, and will invite presenters to submit their papers for publication. We will acknowledge our funder at the session, and several of the partners have already offered presentations.

Progressed Further	N/A
Discovery Details	
Patient Benefit	N/A
Existing output type	Publications

Output Name	Survey of key performance indicators
Details and Impacts	This is the survey of key performance indicators
Progressed Further	N/A
Discovery Details	
Patient Benefit	This is the survey of key performance indicators
Existing output type	

Output Name	The Relationship between Circular Economy and Nexus Approach
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Details and Impacts	Future steps: This paper presents a literature review of circular economy and nexus thinking, focusing on the intersection between both these paradigms. A new framework, integrating both paradigms is developed. The paper is provisionally accepted in Journal of Cleaner Production, pending minor revisions.
Progressed Further	N/A
Discovery Details	
Patient Benefit	The paper provides recommendations on how the paradigms of "circular economy" and "nexus" thinking can be usefully integrated in future projects or studies.
Existing output type	Publications
<hr/>	
Output Name	Water Hub ULL South Africa, engagement with the local informal settlement
Details and Impacts	Development of a local circular economy that diverts waste from landfills and waterways, and will enable the urban poor to participate in a social enterprise
Progressed Further	Yes
Discovery Details	Development of a local circular economy that diverts waste from landfills and waterways, and will enable the urban poor to participate in a social enterprise
Patient Benefit	Small local enterprises based on the sustainable production of food at the small scale, wither for home consumption or for sale at local markets.
Existing output type	Spin Outs

Narrative Impact

Impacts?

Yes

Findings

The following example impacts from the Bristol ULL, categorised based on Reed (2016), Struyer et al (2000) and UKRI (2020). We have reduced to 350 words and provide full details of impact in separate report. Instrumental Impacts: (e.g. changes in policy or practice) WASTE FEW ULL contributed “most definitely” (BFN) to Bristol winning Going for Gold and becoming second UK city to be awarded ‘Gold Sustainable Food City’:
<https://www.goingforgoldbristol.co.uk/bristol-name-d-gold-sustainable-food-city/> The micro-valuation work was “very helpful” and “gave confidence” (in supporting so clearly the waste hierarchy) Bristol Waste will be using it in its campaign this year (2022). Can “help evidence need for waste hierarchy when talking to local authorities” (RF) “The Schumacher Institute’s new ‘Hexalemma’ framework – developing in WASTE FEW ULL - now being used to look at energy transition involving major UK Distribution Systems Operator (DSO).” (TSI) Conceptual (E.g. Broad new understanding / awareness-raising) The newly integrated conceptual macro-economic/scenario model “helps shape directions of solutions...walk you through that complexity” (RF). It is “fascinating...makes you think about things differently...needs a bigger conversation” (Bristol Waste); “very helpful for us taking a look at the One City Plan goals” (BFN). “fascinating – right to try to pick out who would be winners and losers at a global level...the numbers are big/striking on their own.” (WW) Attitudinal or cultural* (research) (E.g. willingness in general to engage in new collaborations) “The project added to the capacity, credibility and profile of The Schumacher Institute... demonstrated the value of systems approaches to complex interactions of infrastructure and people.” (TSI) “Very useful in bringing key actors together, wouldn’t have happened otherwise...empowering with key people on the Food Waste Action Group” (BFN) “The project forged close ties among the ULL participants...plans and initiatives involving the FEW nexus will be smoother and more likely to succeed.” (TSI) Enduring connectivity (E.g. follow-on interactions) Presentation scheduled with the Food Waste Action Group, with potential for

follow on meetings with Bristol CC at Cabinet level and the One City Team. Schumacher Institute (TSI), Resource Futures (RF), Bristol Food Network (BFN), Wessex Water (WW), Bristol Waste (BW).

Date Materialised

2021

Type of Impact

Cultural, Societal, Economic, Policy & public services

Sectors used

Agriculture, Food and Drink, Creative Economy

Collaborations and Partnerships

Collaboration Title	Connection with WASTE FEW ULL consortium in Sao Paulo
Partner	
Organisation Name	UNICAMP
Department	Economics
Contributed Financially	No
In-kind contribution	No
Contributions Made	We were invited to give a research seminar at FCA- Unicamp, Sao Paulo State by professor Ester dal Poz. Here we also met with those working in the poorer areas of Brazil, and also with indigenous Guarani people, to observe their methods of managing water.
Partner Contributions	We were able to explain the connection with the WASTE FEW ULL project, by giving details of the use of sustainable drainage to manage excess surface and greywater, particularly focused on informal settlements. We met with Professor Manuel Cesario, Professor of Healthy Cities: UniFACEF – Franca, SP, Brazil, discussed our research areas, and agreed a way to collaborate in the future, based on the outcomes of our research projects. At UNICAMP, we met with Kelly Cristina Tonello, Associate Professor, Forest Hydrology/ Watershed Management/ Recovery Degraded Areas from the Federal University of São Carlos - UFSCar, Environmental Department Science, Sorocaba - São Paulo - Brasil to discuss the Brazil (Zika) project, and also her PhD student Carina Pensa, also based at UFSCar Sorocaba. Our meetings generated many ideas for future collaboration with the groups that we engaged with.
Year Commenced	2019
Year Ended	Still Active
URL	
Resultant Outcomes	None as yet.

Categorisation of impact	No impact yet
Formally Governed	No

Research Datasets, Databases and Models

Material Type	Computer model/algorithm
Material Name	Two new modelling PhD studentships
Description	<p>One PhD student will use agent-based modelling of linked circular economies, by analysing the potential for waste reduction in urban food-energy-water nexus by explicitly linking the circular economies. It will focus on Agent-Based Modelling (ABM) of food, energy and water fluxes in urban or urbanising environments. Innovatively, these fluxes will be modelled as emergent properties arising from agents' (i.e. stakeholders') decision making, explicitly recognizing that they depend on power relations between the various stakeholders and on non-linearly propagating effects. The second will use system dynamics modelling of linked circular economies by analysing the potential for waste reduction in urban food-energy-water nexus by explicitly linking the circular economies. The PhD focuses on System Dynamics Modelling (SDM) methodology of food, energy and water cycles in urban or urbanising environments. Innovatively, these cycles will be modelled as an integrated system, explicitly recognizing that they do not operate in isolation and that feedbacks can cause non-linearly propagating effects.</p>
Provided to Others	No
Year First Provided	
Year First Provided	2019
Impact Description	None yet
URL	
Digital ID	
Source	Manual
Publication ID	5c682552b86f99.19598548
<hr/>	
Material Type	Dataset/Database/Collection of data

Material Name	Rotterdam ULL database; Western Cape water quality database
Description	Setting up a Waste Tracking database at Blue City (Rotterdam) including data on their water, energy, material consumption and outputs. To be used in the mapping exercise. Monitoring water quality and vegetation analysis in the Water Hub, the Western Cape, SA.
Provided to Others	No
Year First Provided	
Year First Provided	2019
Impact Description	None as yet
URL	
Digital ID	
Source	Manual
Publication ID	5c681aee0400d3.66157351

Key Findings

Key Findings?

Yes

Discoveries

In the Waste FEW ULL project, funding for which finished in September 2021, 4 Urban Living Labs (ULLs) were set up to exchange knowledge around similarities and differences in the Food-Energy-Water nexus. These were in South Africa, The Netherlands, Brazil and the UK. Through Waste FEW ULL, we found that each ULL had its' own way of investigating the Nexus and very often this was not comparable. This was obviously due to site-specific factors such as geographical location, socio-political context, local factors (site/ business focus, site management, ability to engage with stakeholders/ management (this was negatively affected by Covid), governance structures etc) as well as the individual ULLs ways of working (approaches used, numbers of personnel, size of site, specific models used to simulate the nexus etc). Each ULL therefore operated within the project as a separate entity to a certain extent. Also of interest was the emphasis placed on food, energy or water, whereby each ULL concentrated on 2 mainly, for example food and water, with the third not considered as much. This made modelling difficult, although an ongoing PhD study is making great strides in this respect using system dynamics to investigate the nexus across the ULLs (see: Parsa, A., Van De Wiel, M. J., & Schmutz, U. (2021). Intersection, interrelation or interdependence? The relationship between circular economy and nexus approach. *Journal of Cleaner Production*, 127794). A second PhD contextualises our project in a South African perspective around the legacy of Apartheid and social inequality. A third PhD developed the Waste-Resource Paradox model whereby the circular economy results in waste becoming a resource, valorising it and thus its production becomes financially beneficial (see: Greer, R., von Wirth, T., & Loorbach, D. (2021). The Waste-Resource Paradox: Practical dilemmas and societal implications in the transition to a circular economy. *Journal of Cleaner Production*, 303, 126831 and Greer, R., von Wirth, T., & Loorbach, D. (2020). The diffusion of circular services: Transforming the Dutch catering sector. *Journal of Cleaner Production*, 121906). The Brazilian ULL, based in the metropolitan Sao Paulo area was the largest and utilised agent

based modelling and the Delphi approach in their investigation of agroecology (or community supported agriculture: CSA), water quality and the protection of the Atlantic Rainforest finding that even short distances between eg Ibiuna and Paraheilo revealed different profiles for the CSA sub-indicator and also that the distinct hydrographic basins and water/climate conditions affected water quality differently for the 2 areas, with impacts across the food producing sector. In the UK, economic studies of the Bristol ULL found that it is more efficient to reduce food waste at source, but with 30% of wasted food inedible, it requires disposal in the most efficient way: in comparison to incineration or landfill, anaerobic digestion has the most positive outcomes, although some methods can increase particulate pollution. It is best to move unavoidable food waste from residual (black bins) to recycling, with many significant environmental benefits for Bristol. At the Water Hub in South Africa, one of the smallest ULLs, the community has been trained to maintain and operate medium scale bioremediation which cleans polluted river water flowing through an informal settlement and is used to irrigate small urban gardens producing vegetables for sale, or for the community to use. This technique avoids the use of chemicals, and also energy as it uses vegetation to remove nutrients and other pollutants. The vegetables were analysed and conformed to South African guidelines as being safe to eat.

Objectives

Partially

Reasons

Access to archives, data or participants, Changing landscape of research programme

Expand

Covid made holding stakeholder engagement workshops face to face impossible, online was less than adequate. Political conditions in Brazil made collaboration difficult, the Rotterdam ULL found access to participants difficult as entrepreneurs tended to move on.

Further Details

Taken Forward

As the models and concepts become public, these could be used by others to justify our findings and also apply to other ULLs investigating the FEW nexus.

Interest to sectors

Agriculture, Food and Drink, Environment, Government,
Democracy and Justice

Covid Impact

Covid negative affect on outputs	Yes
Covid affect on outputs to date	Quantity of outputs/outcomes is lower than originally expected, delivery of outputs/outcomes is delayed
Covid positive affect on outputs	No
Statement describing impact of covid	Some negative impact

Secondments, placements and internships to or from other organisations

Secondments No

Engagement Activities

Activity Title	Associated with RGS conference Special Session is a Special Issue in the journal Sustainability: The food-energy-water nexus: boundaries, processes, and the circular economy and can be found under "Sustainable Water Management" in the journal. Deadline for manuscript submissions: 31 March 2022.
Activity Type	A magazine or newsletter (print or online)
How many people?	51 - 100
Geographical Reach	International
Primary Audience	Other audiences
Other Audience	Policymakers/politicians, Professional Practitioners, Industry/Business, Postgraduate students, Study participants or study members, Third sector organisations
Activity Years	2022
Result Description	This activity has sparked interesting and positive debate amongst the consortium about the proposed publications.
Most important impact?	Own/colleagues reported change in views or opinions.
URL	
Digital ID	
Source	Manual
Publication ID	620e3cd17db250.02627729

Activity Title	Blogs
Activity Type	Engagement focused website, blog or social media channel
How many people?	1 - 10
Geographical Reach	International
Primary Audience	Media (as a channel to wider audiences)

Other Audience	Media (as a channel to the public), Policymakers/politicians, Public/other audiences, Postgraduate students, Other audiences, Study participants or study members
Activity Years	2020
Result Description	This was a blog to update progress for the South Africa ULL, at the Water Hub, Franschhoek. Called: "Nature-based Urban Living Lab as a catalyst for the circular economy in South Africa", it details the lessons learnt, how the polluted water has been treated, and recirculated into the small urban gardens. It states that: "The nexus has potential to be one of the most powerful organising frameworks for re-adjusting and disrupting linear economies by introducing policies and strategies that are deliberately directed at achieving sustainable environments and human well-being".
Most important impact?	Not aware of any impact.
URL	https://wastefewull.weebly.com/wastefewullweeblycom
Digital ID	
Source	Manual
Publication ID	5e4c01409a9e85.85332647

Activity Title	Bristol ULL stakeholder workshops
Activity Type	A formal working group, expert panel or dialogue
How many people?	1 - 10
Geographical Reach	Local
Primary Audience	Industry/Business
Other Audience	Professional Practitioners, Study participants or study members
Activity Years	2020
Result Description	Stakeholders attended several meetings and workshops that has lead to the organising of larger online workshops being scheduled for February, March and May 2021 to reach a wider audience to explore each of three areas (food waste, the phosphorous issue, and plastics/contamination) and looking at the bigger picture of the economics of change, in particular the

upstream v downstream focus. However, we have been restricted in the amount of face-to-face workshops we have been able to hold due to Covid 19. The research group held meetings over the period to which our core stakeholders, from Wessex Water, Bristol Waste Company, Centre for Sustainable Energy, Resource Futures and Bristol Food Network attended eight meetings and workshops.

Most important impact? Plans made for future related activity

URL <https://wastefewull.weebly.com/>

Digital ID

Source Manual

Publication ID 60360c8f507a54.01468863

Activity Title Bristol ULL workshop films

Activity Type Event, workshop or similar

How many people? 11 - 50

Geographical Reach Regional

Primary Audience Professional Practitioners

Other Audience Policymakers/politicians, Industry/Business, Postgraduate students, Study participants or study members

Activity Years 2019,2020

Result Description We now have edited films of the workshops held in Bristol (there are not publicly available, but will be used in our analysis). The films from the 3 workshops are structured as follows: Introductions (both to WasteFEWULL and the workshop exercises) Card writing: participants were asked to individually write onto cards the areas/topics where their specific sector was interconnected with one or both of the other two sectors (identifying nexus areas/connections). We asked them to make a distinction based on the connections being existing (coloured cards) or potential future ones (white cards) Sorting/ clustering: Then, as a group, the collected cards were moved into clusters, and titles were identified for each of these clusters. This still exists in the form of photographs, the original

cards and typed up on Lucidchart. Group work/ 3-fields: Then we asked the participants (usually with one of our team joining) to break into groups (we had 2 or 3 on the three different days) and work on one particular cluster (nexus connection) at a time. Again, we have photos of these results, the originals (at Ryton) and the typed-up versions on LucidChart.

Most important impact?

Not aware of any impact.

URL**Digital ID****Source**

Manual

Publication ID

6035094ed527d3.51947476

Activity Title

Bristol ULL workshop to test the Decision Tree model

Activity Type

A formal working group, expert panel or dialogue

How many people?

11 - 50

Geographical Reach

Regional

Primary Audience

Professional Practitioners

Other Audience

Policymakers/politicians, Industry/Business, Postgraduate students

Activity Years

2021

Result Description

Held on 25 February, this workshop was run by PhD candidate Rachel Greer (Rotterdam ULL) to test the Decision Tree she's developed as part of her PhD study. This was held virtually in Bristol, the results of which are yet to be analysed. Title: Heuristics and Decision Making in the Circular Economy Details: Transitioning towards a more sustainable future requires overcoming our current linear approach to resources use. However, transitioning to a Circular Economy (CE) is not unproblematic and comes with its own challenges. In this workshop, we will present a Circular Decision Tree developed at DRIFT, a leading Dutch research institute in the field of sustainable transitions. We invite you to reflect with us on the uncertainties, paradoxes and dilemmas of decision making in CE transition, and to learn and discuss about the proposed

heuristic, and to identify its potential practical benefit within your and other fields. This workshop is run under the Sustainable Urbanisation Global Initiative (SUGI) funded project called WASTE FEW ULL that is looking at inefficiencies in the Food, Energy, Water (FEW) nexus through an Urban Living Laboratory (ULL) approach. See <https://wastefewull.weebly.com/>. This workshop has already been successfully run in Rotterdam, with participation from Industry, local government, regulators, consultancies, academia and the not-for-profit sector. This Bristol workshop is open to anyone with an interest in sustainable transitions, the Circular Economy, circular innovations and/or the Food–Energy–Water Nexus. Background for the development of the Circular Decision Tree Current societal problem: Funding and support for sustainable innovation is commonly indiscriminate/unsystematic/ disproportionate to the potential contribution of the innovation towards the transition to a circular economy. “Circular innovations” can be transformative, non-transformative, or counter-transformative to this transition. Often business models or innovations that close loops may actually be an optimization of a linear economy, leading to lock-in of the current regime. Thus, there is a need for a paradigm shift and change towards a different type of decision-making logic. There is a fundamental problem observable in our daily decision-making: often, we are making decisions based on linear decision-making mechanisms. This contributes to strengthened inertia supporting the linear economy, which leads to greater resistance to change – hence, counter-transformative. The current way of decision-making can be counter-productive to reducing waste inefficiencies because of its support for incremental innovation. This need for a new type of decision-making logic led to the development of the framework for the decision-making tree we pose as one potential solution. Knowledge gap: Case studies of small, incubated pilots of such a decision-support tool (DST) for intentional waste reduction are sparse at best (CLEWS in Qatar, ICLEI for FEW), and none targeting circularity on a practical level could be found. A few loosely related tools have been developed by and for academics, but none currently exist to assist practitioners in navigating their decisions – thus, there is an enormous gap between knowledge in scientific literature/environmental impact databases and the accessibility

and implementation of this knowledge in practice. Goal: This tree aims to answer the question: How can policymakers, investors, societal activists, businesses and entrepreneurs contribute towards circular innovations to support the transition towards a circular economy?

Most important impact? Not aware of any impact.

URL

Digital ID

Source Manual

Publication ID 60350aaa2bc660.74752005

Activity Title Conference presentation/ poster: Estimating income effect of food waste reduction at the food-energy-water nexus

Activity Type A talk or presentation or debate

How many people? 11 - 50

Geographical Reach International

Primary Audience Policymakers/politicians

Other Audience Professional Practitioners, Industry/Business, Postgraduate students, Study participants or study members

Activity Years 2020

Result Description This is a working paper presented in a Poster session in the 2020 Dresden Nexus Conference (DNC). The key message from the paper is that while food waste reduction is good for environment and resource savings, it likely accompanies with reduced food production activities, inducing income losses, at least in short-term for some economic agents who earn income from food production. This implies that any policy aiming to promote food waste reduction has to consider how to compensate these agents so that the barrier is largely removed for the policy to achieve its goal of food waste reduction. This may raise the attention of policy makers to take care of the economic losses of certain agents and help remove the barrier for food waste reduction.

Most important impact? Plans made for future related activity

URL https://2020.dresden-nexus-conference.org/custom/media/DNC_2020/Posters/10_Wei_T.pdf

Digital ID

Source Manual

Publication ID 6037cd3b25def1.35665778

Activity Title Establishment of a network of staholders and shareholders of sustainable food systems at the border of the Atlantic Rainforest, Sao Paulo, Brazil ULL

Activity Type A formal working group, expert panel or dialogue

How many people? 51 - 100

Geographical Reach National

Primary Audience Policymakers/politicians

Other Audience Professional Practitioners, Industry/Business, Undergraduate students, Postgraduate students, Third sector organisations

Activity Years 2018,2019,2020

Result Description The main goal of Sao Paulo ULL is to establish a network of stakeholders and especially share holders, in order to have an evolution through sustainable food systems. Actors from the government of the State of São Paulo - Brazil, on a local and regional spectrum: Agriculture and Food Supply Secretaries (from two city majors, and the State of São Paulo government, regulatory agencies for environmental impact control. Also producers, food cooperatives, regulatory environmental agencies and NGO partners. It is a socio-technical approach of impact planning and for innovation diffusion as expected impacts of sustainability problems. An “ecosystem services” (Ostrom, E. 1999) assumption, which means SP ULL has to face, promote and foster “situation arenas” of discussions and decision making processes, involving relevant stakeholders, shareholders and policy makers. 2020, in person, till February. We keep on going after this, by ICT platforms. The laboratory has been holding a series of meetings to establish a network of stakeholders in the transition to sustainability. There are four types of stakeholders: a) governments and regulatory bodies, b)

food producers and cooperatives and c) community, such as NGOs and d) private enterprises from the FEW nexus market sectors. The central objective of these meetings, more than 40 in the last year, was to establish institutional partnerships for the development, validation and dissemination of a decision-making tool that allows the transition to sustainability to be promoted. This tool has a double face, concerning transition dynamics: to be an innovation for sustainability catch up and diffusion promoter, and to be an actor's accountability developer.

Most important impact?	Decision made or influenced
URL	https://wastefewull.weebly.com/satildeo-paulo-ull.html
Digital ID	
Source	Manual
Publication ID	6034c02d360fd7.54145930

Activity Title	Final meeting of the Sao Paulo ULL
Activity Type	A formal working group, expert panel or dialogue
How many people?	11 - 50
Geographical Reach	Regional
Primary Audience	Policymakers/politicians
Other Audience	Policymakers/politicians, Professional Practitioners, Industry/Business, Supporters, Study participants or study members
Activity Years	2022
Result Description	January, 20th 2022 the SP ULL presentation meeting, with Fapesp representative (Dr Jean Ometto, the agency's Climate Change Programme coordinator), and 30 stakeholders participants (from the following institutions): - São Paulo Infra-structure and Environment Secretary, - 2 NGOs - State of Sao Paulo Food and Nutrition Security Commission and "Brazil Organics" Association, - São Paulo State Environmental Regulatory Agency (CETESB) - Sao Paulo State Forests Foundation -Conexão Mata Atlântica (Atlantic Rainforest Enterprise) - Ligue os Pontos (Link the Dots, a joint

organization - Sao Paulo City Agriculture Secretary for agroecological transition (you have visited them, at Parelheiros region) and a operational NGO (that makes the transition happen, with producers capacitation and rural support, based on agroeconomics research) - Academic people(from University of Sao Paulo, from Unicamp and from Sao Paulo State Federal University) - Two Food production cooperatives (CAISP, from Ibiuna area, and Cooperapas, from Parelheiros area) - Consumer Supported Agriculture agents (a restaurant association for food verticalized chain) -Sabesp - the State of Sao Paulo Water and Sewage Co. (they are our partners till the West FEW project submission) - Representatives of 2 other Belmont Forum projects, in the State of Sao Paulo (Getulio Vargas Foundation , about municipal waste management, and the Sao Paulo University project, about agroecological policy initiatives (governamental and public-private joint projects). - Embrapa partners (Brazilian Agriculture and Livestock Research Enterprise: The Embrapa Environment Unit and the Embrapa Informatics and Satellite Unit)

Most important impact? Plans made for future related activity

URL

Digital ID

Source Manual

Publication ID 62165024292d41.22404981

Activity Title follow up process for policy diffusion

Activity Type A formal working group, expert panel or dialogue

How many people? 1 - 10

Geographical Reach Regional

Primary Audience Policymakers/politicians

Other Audience Study participants or study members

Activity Years 2022

Result Description Meetings arranged with: - The Conexão Mata Atlântica (Atlantic Rainforest NGO): the executors of the biggest

rainforest recuperation (funded by the World Bank and by the Interamerican Bank of Development) and the São Paulo State Forest Foundation (governmental, and the research branch of this partnership). - Brazilian Organic Food Association (they have a huge demand on policy design and scientific evidence of agroecological and organics production for new cycles of policy and funding) for future activities

Most important impact? Not aware of any impact.

URL

Digital ID

Source Manual

Publication ID 621650ea8ceaa0.53459409

Activity Title International meetings, stakeholder workshops, ULL and WP lead meetings

Activity Type Event, workshop or similar

How many people? 1 - 10

Geographical Reach Local

Primary Audience Professional Practitioners

Other Audience Industry/Business, Third sector organisations

Activity Years 2018

Result Description On August 7 2018 we held a full project meeting at which we were hosted by GENeco, Bristol Sewage Treatment Works, Wessex Water, and following the meeting were given a tour of the sewage treatment works to contextualise one of our foci in the project which is the recovery of dissolved phosphorus from the plant's effluent which currently flows into the estuary. The Bristol Food Network also attended enabling a discussion of small urban gardening projects which could benefit from the recovered phosphorus. The Centre for Sustainable Energy completed the FEW triangle with a discussion around the use of waste to generate energy. Other activities of the whole consortium include: • International Kick-off in London (June) • Kick off in Bristol (GENeco) (August) • 2-day

International Meeting (UoBath) site visits (October) •
Economics Meeting (Jan 2019) • Bristol ULL Meetings:
Workshop planning (November) -; Wessex Water
(November); Bristol Food Network (Jan); Schumacher Inst (Dec
Jan); Stakeholder analysis prep (Dec-Jan)

Most important impact? Requests for further information

URL <https://wastefewull.weebly.com/>

Digital ID

Source Manual

Publication ID 5c67e7806b2de0.16331484

Activity Title Post graduate and post doctoral research assistant webinar on project progress

Activity Type A formal working group, expert panel or dialogue

How many people? 11 - 50

Geographical Reach International

Primary Audience Study participants or study members

Other Audience Policymakers/politicians, Postgraduate students

Activity Years 2021

Result Description 8 presentations given by PhD students and Post Docs on project progress

Most important impact? Not aware of any impact.

URL

Digital ID

Source Manual

Publication ID 62163db8af5f26.49246172

Activity Title Presentation and workshop at the Water Hub ULL, South Africa

Activity Type Event, workshop or similar

How many people?	11 - 50
Geographical Reach	Local
Primary Audience	Policymakers/politicians
Other Audience	Professional Practitioners, Public/other audiences, Industry/Business
Activity Years	2019
Result Description	A presentation and workshop attended by 30 people to introduce the work of the Water Hub ULL and motivation to invite small businesses and startups to engage with the Living Lab for developing their business with support of university researchers, Green Cape and the Dutch Consulate in Cape Town
Most important impact?	Plans made for future related activity
URL	http://cocreatesa.nl/2020-waterhub/
Digital ID	
Source	Manual
Publication ID	6034c7946965b8.43168350

Activity Title	Researcher and practitioner interactive workshops (x2), Rotterdam, The Netherlands, ULL
Activity Type	Event, workshop or similar
How many people?	11 - 50
Geographical Reach	International
Primary Audience	Professional Practitioners
Other Audience	Policymakers/politicians, Public/other audiences, Industry/Business, Postgraduate students, Other audiences
Activity Years	2020,2021
Result Description	Two workshops with practitioners and researchers, reflecting on 1) societal challenges and tradeoffs surrounding waste inefficiencies and 2) the usability and internal logics of a decision-making heuristic created during the project aiming to reduce the uncertainties and dilemmas faced. Twenty stakeholders - principally from policy, research, and

government – participated in the first workshop, in which we unpacked implicit financial risks, hampering factors, trade-offs, and organizational dilemmas that factor into circular decision-making. In the second workshop with similar participants in terms of numbers and fields of expertise, we tested the tool’s internal validity, investigating its usefulness to stakeholders and the soundness of its internal logics. We exemplified the pathways of the CDMT stepwise, illustrated with a case on plastics. After the initial introduction to the tool, participants joined breakout groups to explore and discuss the tool individually and then collectively. In a plenary session following, the results from all breakout groups were conglomerated in an interactive session, collecting feedback from actors for tweaking the tool from the practical perspective of various sectors.

Most important impact? Plans made for future related activity

URL

Digital ID

Source Manual

Publication ID 6034b90ec45ac1.80313691

Activity Title Royal Geographical Society (RGS) Annual Conference, Tuesday 31 August to Friday 3 September 2021. Special session sponsored by PERG (Planning and Environment Research Group). The food-energy-water nexus: boundaries, processes, and the circular economy

Activity Type Event, workshop or similar

How many people? 11 - 50

Geographical Reach International

Primary Audience Other audiences

Other Audience Professional Practitioners, Postgraduate students, Study participants or study members

Activity Years 2021

Result Description	There were 5 presentations at the conference in the Special Session: 1. Learning at the institutional liminality of transitions. Urban Living Labs as inter-boundary spaces of the FEW Nexus: Richard Nunes, (University of Reading), Jana Friend (Coventry University), Ester dal Poz (Unicamp, Barzil), Kevin Winter (University of Cape Town, South Africa), Dr Timo von Writh (DRIFT, Norway) 2. Modelling the urban FEW-nexus : approaches, problems and possibilities: Marco Van De Wiel, Ali Parsa, Matt Johnston (Coventry University); Erika Francisco, Ester Dal Poz (University of Campinas, Brazil); Ian Roderick (Schumacher Institute, UK) 3. Residues from biomass thermal treatment and wastewater treatment plants as agricultural fertiliser: Nutrient harvesting from waste: Anna Bogush (Coventry University) 4. Valuation of inefficiencies in the food cycle – crossing the actor boundaries: Ian Roderick (The Schumacher Institute), Daniel Black (Daniel Black Associates db a), Taoyuan Wei (CICERO Center for International Climate Research) 5. São Paulo in Natura Lab - “OUR LAB IS THE NATURE” Ester Dal Poz from University of Campinas (Brazil) Each of the presentations generated lively discussion with the attendees.
Most important impact?	Requests for further information
URL	
Digital ID	
Source	Manual
Publication ID	620e3b14a90038.70166724
<hr/>	
Activity Title	Short film of the developments and progress at the Water Hub (South Africa, Western Cape ULL)
Activity Type	A broadcast e.g. TV/radio/film/podcast (other than news/press)
How many people?	51 - 100
Geographical Reach	International
Primary Audience	Media (as a channel to wider audiences)
Other Audience	Schools, Policymakers/politicians, Professional Practitioners, Public/other audiences, Industry/Business, Undergraduate

students, Postgraduate students, Other audiences, Study participants or study members, Third sector organisations

Activity Years

2021

Result Description

Please see: <https://www.youtube.com/watch?v=ibCnOfMmM08>
 A short documentary on the Water Hub Project, Franschhoek, South Africa. Nature-based solutions are used for cleaning surface water from an informal settlement and reusing treated water for irrigating vegetables and breeding freshwater fish. This is a urban living laboratory. and
<https://www.thewaterhub.org.za/>

Most important impact?

Own/colleagues reported change in views or opinions.

URL**Digital ID****Source**

Manual

Publication ID

620f54df2698d2.49804891

Activity Title

Stakeholder meetings at BlueCityLab, Rotterdam

Activity Type

Event, workshop or similar

How many people?

1 - 10

Geographical Reach

Local

Primary Audience

Industry/Business

Other Audience

General public

Activity Years

2018,2019

Result Description

Engagement with individual small-scale business entrepreneurs to gather information on their FEW nexus activities to map energy and resources flowing within and across boundaries. The mapping and analysis will investigate how to close the loop at the small scale, and whether this can be scaled up using Acceleration Potential Mapping.

Most important impact?

Requests about (further) participation or involvement

URL

Digital ID

Source Manual
Publication ID 5c7a2f8d39e7e3.91176873

Activity Title Stakeholder meetings with individual Urban Living Labs.
Activity Type Participation in an open day or visit at my research institution/facility
How many people? 11 - 50
Geographical Reach International
Primary Audience Policymakers/politicians
Other Audience Professional Practitioners
Activity Years 2018,2019
Result Description Visit of high ranking Tunisian delegation visited the Water Hub, to be shown the demonstration area of biofiltration, small scale gardening and engagement of the community in producing vegetables from the treated effluent. This was an important visit since Tunisia is struggling with its water resources and city of Tunis is heading towards a 'Day Zero' in the same way that the city of Cape Town has been, thus the officials were hoping to learn a few things from the Western Cape ULL and with the potential to influence policy internationally.

Most important impact? Decision made or influenced
URL <https://www.youtube.com/watch?v=GITmjyfY3qs>

Digital ID
Source Manual
Publication ID 5c7a31c8d1ae13.60674258

Activity Title Stakeholder meetings with individual Urban Living Labs.
Activity Type Event, workshop or similar
How many people? 51 - 100

Geographical Reach	International
Primary Audience	Professional Practitioners
Other Audience	Policymakers/politicians, Public/other audiences, Industry/Business, Postgraduate students, Third sector organisations
Activity Years	2018,2019
Result Description	Our project includes 4 Urban Living Labs in South Africa (Western Cape), Brazil (Sao Paulo), the UK (Bristol) and The Netherlands (Rotterdam). Each one of these has engaged with appropriate stakeholders in their countries and cities to promote the project and to exchange relevant knowledge. Some general details on stakeholder engagement is given on the project's website at: https://wastefewull.weebly.com/stakeholder-engagem-ent.html , and specific detail of, for example, work undertaken in the Western Cape ULL is given on: https://wastefewull.weebly.com/capetown-ull.html .
Most important impact?	Requests about (further) participation or involvement
URL	https://wastefewull.weebly.com/capetown-ull.html
Digital ID	
Source	Manual
Publication ID	5c67ea05006a93.10291013

Activity Title	Urban Transformations website
Activity Type	A magazine or newsletter (print or online)
How many people?	11 - 50
Geographical Reach	National
Primary Audience	Policymakers/politicians
Other Audience	Media (as a channel to the public),Public/other audiences, Industry/Business, Undergraduate students, Other audiences, Third sector organisations
Activity Years	2019

Result Description	Urban Transformations is a network based at the University of Oxford showcasing ESRC research on cities. We have a page on their website on our project: WASTE FEW ULL – MAPPING AND REDUCING WASTE IN THE FOOD-ENERGY-WATER NEXUS. It has a short description of the project, a list of partners and a list of collaborator/ stakeholders.
Most important impact?	Not aware of any impact.
URL	https://www.urbantransformations.ox.ac.uk/project/waste-few-ull-waste-food-energy-water-urban-living-labs-mapping-and-reducing-waste-in-the-food-energ-y-water-nexus/
Digital ID	
Source	Manual
Publication ID	5c6814ef260133.20714218

Activity Title	Visit to Ibiuna, a green belt city in February 2019
Activity Type	Event, workshop or similar
How many people?	1 - 10
Geographical Reach	Local
Primary Audience	Policymakers/politicians
Other Audience	Professional Practitioners, Public/other audiences, Study participants or study members
Activity Years	2019
Result Description	First meeting and visit to Ibiuna, a green belt city in the metropolitan area of Sao Paulo city which has large areas of horticulture with associated demands on water and energy. Members of the team in Sao Paulo will be responsible for investigating: Water and energy footprints; Water policy patterns; Water use best practices and technologies; Stakeholders selection and contacts, communication and education for sustainability; Governance of FEW and ULL.
Most important impact?	Requests about (further) participation or involvement
URL	

Digital ID

Source	Manual
Publication ID	5c7a34078df230.03672316

Activity Title	WASTE FEW ULL website
Activity Type	Engagement focused website, blog or social media channel
How many people?	11 - 50
Geographical Reach	International
Primary Audience	Study participants or study members
Other Audience	General public
Activity Years	2018,2019
Result Description	<p>https://wastefewull.weebly.com/ The website is given above. It hosts blogs, results of meetings, workshops, visits, updates on the activities of the Urban Living Labs, the economics and dissemination/ communication groups. We can refer to it in any external activities, and it is regularly updated to include any resources, such as publications pertinent to our project, but will also host any publications we have generated. It is currently advertising 2 PhD studentships, one of which is funded by SUGI, the other funded by Coventry University and the Centre for Agroecology, Water and Resilience which is researching a topic closely allied to the WASTE FEW ULL project. It also includes minutes of meetings, workshop outputs etc. as well as contacts for the project. Partners and collaborators are encouraged to update this regularly, so it is up-to-date with activities and outputs.</p>
Most important impact?	Requests for further information
URL	https://wastefewull.weebly.com/
Digital ID	
Source	Manual
Publication ID	5c67e28c9ccaf6.69456219

Activity Title	Waste Food-Energy-Water Nexus - a Bristol Urban Living Laboratory
Activity Type	Event, workshop or similar
How many people?	11 - 50
Geographical Reach	Regional
Primary Audience	Professional Practitioners
Other Audience	Policymakers/politicians, Professional Practitioners, Industry/Business, Postgraduate students, Study participants or study members, Third sector organisations
Activity Years	2021
Result Description	The final conference for the WASTE FEW ULL (Bristol) project with presentations given including: <ul style="list-style-type: none"> • An introduction to the research project • Nexus and Circular Economy - what are the differences, benefits and barriers? • Valuing food and plastic waste • Insights from systems dynamics of the FEW nexus in Bristol • Bristol's social networks and the FEW nexus • The Food-Water-Energy nexus: What's in it for Bristol's future? Significant interest was shown in the results of the Bristol ULL, with questions raised and debate during the day, and after the event had officially finished.
Most important impact?	Audience reported change in views, opinions or behaviours
URL	
Digital ID	
Source	Manual
Publication ID	620e3e7c9177f2.62465083

Activity Title	Waste Reduction by Computer Modelling
Activity Type	A talk or presentation or debate
How many people?	11 - 50
Geographical Reach	Local
Primary Audience	Postgraduate students

Other Audience	Undergraduate students, Study participants or study members
Activity Years	2020
Result Description	Poster at Doctoral Capability and Development Conference 2020, outlining how system dynamics modelling can help understand the dynamics of the FEW nexus. Limited direct benefit. This poster provides a very brief a conceptual outline that needs to be converted into practical system dynamics model before any benefits can ensue. However, the event invited debate and discussion, enabling refinement of the approach.
Most important impact?	Plans made for future related activity
URL	
Digital ID	
Source	Manual
Publication ID	6035f3f8979a60.14990990

Activity Title	Webinars given by experts
Activity Type	A formal working group, expert panel or dialogue
How many people?	11 - 50
Geographical Reach	International
Primary Audience	Other audiences
Other Audience	Postgraduate students, Study participants or study members
Activity Years	2020,2021
Result Description	The purpose of the webinar series was to open up debate around the nexus and the circular economy. We hoped to give some context to our project, and to consider wider issues and concepts. Each of the webinars generated lively debate, and this is something we will continue for the rest of the project. Each speaker was an international expert in their field: Friday April 17th 2020. Speaker: Gijs Diercks. Title: The state of transition towards and circular economy Thursday 4th June 2020. Speaker: Kevin Bell. Title: Plastics, disposables, and sustainability in the post-recycling era Thursday November 26th 2020.

Speaker: Iris Zohar. Title: Phosphorus recycling - From waste to resource Thursday January 7th 2021. Speakers: Tamee Albrecht and Arica Crootof. Title: The Water-Energy-Food Nexus: A systematic review of methods for nexus assessment Friday January 29 2021. Speaker: Walter Belik. Title: Challenges for Reducing Food Losses and Waste

Most important impact? Own/colleagues reported change in views or opinions.
URL <https://wastefewull.weebly.com/wastefewullweeblycom>
Digital ID
Source Manual
Publication ID 6034c4f2285c70.69853721

Activity Title Webinars given by experts
Activity Type A talk or presentation or debate
How many people? 11 - 50
Geographical Reach Local
Primary Audience Study participants or study members
Other Audience Undergraduate students, Postgraduate students
Activity Years 2021,2022
Result Description Webinars 9 February 2021: Challenges for reducing food losses and waste: Walter Belik May 20 2021: Reflections on capacity development in complex settings: Jon Padgham and Hassan Virji. June 15: Living Labs for citizen-centred transitions in waste management processes: Fernando Vilarino (ENOLL) 10 February 2022: Reducing food waste: Using non-market and socio-environmental evaluations to quantify potential impacts for Bristol. Eleanor Eaton
Most important impact? Not aware of any impact.
URL
Digital ID
Source Manual

Economic and Social Research Council

ES/S002243/1

10 Mar 2022



Publication ID

62163d44db8183.89233739
