

## Theme 4: Partnerships: Governance of transitions

### session 1-8

4s1

## Influential visualizations for a circular biobased economy

Tamara Metze, tamara.metze-burghouts@wur.nl

Alessandro Canossa (acan@kadc.dk), Luis Laris Pardo (lupa@kadc.dk) and Alexis Emmanuel Lozano Angulo (aang@kadc.dk) (Royal Danish Academy) and Filip de Bois PBL, tbc) • Further to be developed with strategic communication (Marleen Buizer) and KIT (Phil MacNagthen and Cees Leeuwis), and FNP (Esther Turnhout).

Digital visualizations for a transition to a circular biobased economy can be further developed in order to better integrate academic knowledge, the concerns, interests, and experiential knowledge of stakeholders and citizens (Holmgren et al., 2020, Devadason, 2011, Jasanoff et al., 2013). There is a trend to be discerned – to include stakeholders, citizens, and decision makers in the creation of new models, and visualizations (Metze, 2020). Their inclusion is aimed for in order to make the visualization tools more accurate, adaptive, or inclusive. Still, these studies are mostly working within a linear knowledge model ((Turnhout, et al, 2013). In a linear knowledge model, visualizations provide a form and style of science communication and are communication tools to address a 'knowledge gaps' from the public: make them more aware, better inform them. Although better informing is one role visualizations may play, many other studies demonstrate that a knowledge deficit is usually not the issue. The public that is concerned and involved in environmental policy and planning issues does gather knowledge, gets access to information. However, very often they will argue based on counter-facts, make use of uncertainties, ambiguity, and controversies within the academic world (Metze, 2017, Oreskes, N., & Conway, 2010, Sarewitz, 2004). The challenge for visualizations studies is to move beyond the idea that more and better information through visualizations will improve environmental policies and planning. Scholars in data-visualization should make even more use of the participatory concepts and methods developed in the second largest strand of literature on visualizations in knowledge-cocreation and participatory planning (see below). In this cocreation literature, the linear model is replaced with a dialogue mode, and the role of scientists is not only to produce and communicate about their knowledge; but to also listen to society and engage in conversations in order to better integration of different. In this panel we invite papers that further explore the role of all sorts of visualizations -data visualizations, found images, photographs, but also visualizations in serious games. We aim to bring together researchers that explore, conceptualize and study empirically the role these visuals about transitions – and specifically a transition to a circular economy, play in cocreation processes, policy and political decision making, public opinion formation, public understanding of science, but also for policy learning, and responsible research and innovation.

**NOTE: this session is only open to poster submissions (orals will be all invited).**

## **Seaweed : From revolution to mainstream. Subtitle: Closing the gap : seaweed as the missing link between land and sea in a circular agriculture system**

Fanny Castel, [fanny.castel@wur.nl](mailto:fanny.castel@wur.nl), Sander van den Burg, [sander.vandenburg@wur.nl](mailto:sander.vandenburg@wur.nl), Reinier Nauta, [reinier.nauta@wur.nl](mailto:reinier.nauta@wur.nl)

Seaweed gets more and more interest as an emerging new green resource. There is broad potential in application, from food and feed to pharmaceutical application, and the cultivation of seaweeds has potential positive effects on ecosystem quality. Recent work has shown that seaweed can aid in closing the gap of a circular agriculture system by absorbing the nutrients from terrestrial effluents and bringing them back from sea to land.

Helping seaweed achieve its full potential not only requires that various actors inside and outside the value chain work together but asks for new institutional arrangements that can be realized through partnerships between public authorities, the private and the non-profit sectors and research organizations. The Safe Seaweed Coalition, introduced in this session, is exemplary of new partnerships established to support the development of this promising resource and drive transition.

This session will point out critical issues, including but not limited to safety, for seaweed to be part of a circular bioeconomy and discuss how partnerships can help address these issues. The proposed session aims at bringing together internal and external knowledge on seaweed, with perspectives from academia, NGO, philanthropy and industry. The discussions will contribute to the development of the sector, accelerated by a call for international collaboration and knowledge sharing.

Wageningen University & Research has developed a broad and thorough knowledge base on this topic as well as a large network globally. The One-WUR vision is a key driver throughout the workshop where inhouse expertise and networks will be shared with the participants of the symposium. This will be done by presenting the potential of seaweed for a circular economy as well as questioning the routes necessary to unlock this potential and become impactful.

4s3

## Food system transitions in deltas under pressure

Catharien Terwisscha van Scheltinga (catharien.terwisscha@wur.nl), Stijn Reinhard, Jan Verhagen,

Catharien Terwisscha van Scheltinga, Senior Researcher Wageningen Environmental Research, WUR, catharien.terwisscha@wur.nl Stijn Reinhard, Senior Researcher Wageningen Economic Research, WUR stijn.reinhard@wur.nl Jan Verhagen, Senior Researcher Wageningen Plant Research, WUR, jan.verhagen@wur.nl Dang Kieu Nhan, Director, Mekong Delta Development Research Institute, Can Tho University, Viet Nam, dknhan@ctu.edu.vn

Deltas world-wide are increasingly under pressure. They form a dynamic link between land and water, fresh and saline environments, connecting the natural environment with production systems organized by human intervention. Deltas are among the most productive agriculture and aquaculture areas, while at the same time they face challenges of urbanization, flooding, drought, cyclones, sea level rise, salinity intrusion and subsidence. It is evident that changes in deltas are occurring in an ever more rapid pace: climate change as well as development-driven changes entail that the food system must change towards higher sustainability and resilience while simultaneously meeting increasing demands for food production. Not only the number of people in deltas are increasing, but also their diets are changing (more protein, opportunities for livestock and aquaculture) as are the risks (e.g. emerging diseases, supply chain risks) for and constraints (reduced environmental impact) on production. This session focuses on scientific insights aiming at better understanding the driving forces and interventions needed to bring about the transition to a more sustainable and resilient food system in deltas.

**NOTE: this session is only open to poster submissions (orals will be all invited).**

4s4

## Novel protein sources

Theun Veldkamp, [teun.veldkamp@wur.nl](mailto:teun.veldkamp@wur.nl), Elise Hoek, [elise.hoek@wur.nl](mailto:elise.hoek@wur.nl)

Alternative and novel protein sources are urgently needed to meet the increasing demand for plant-based and animal protein for the world's growing population. Traditional meat production requires a lot of space and natural resources. Alternative, sustainable protein sources, such as insects, macro- and micro-algae, fungi, alternative grains and legumes can contribute to a solution to tackle this problem and to make the food chain more circular. Wageningen University & Research is investigating the potential of alternative protein sources for human food and animal feed. In the transition to a circular food system many governance challenges may arise related to the novel protein sources. Questions that are needed to be answered are for example; how can novel

protein sources contribute to a circular food system? What kind of transitions are needed for this? Transitions are not only regulatory changes but also for example transitions by social and appreciating initiatives. Different aspects which are important in the different stages of the production or supply chains of novel proteins will be addressed in this session. Aspects like, food or feed safety, consumer acceptance, use of residual streams, optimal production, and processing of novel proteins will be discussed. Researchers on novel protein sources in relation to a circular food system are invited to submit their abstracts to this session. Novel protein sources could be insects, algae, fungi, alternative grains, legumes etc., linking to circularity. Governance challenges related to food or feed safety, consumer acceptance, use of residual streams, optimal production, processing of novel proteins need to be addressed in the presentations.

4s5

## **Local and circular valorization of urban biowaste – challenges and benefits for more resilient cities**

Anne Trémier, [anne.tremier@inrae.fr](mailto:anne.tremier@inrae.fr), Sophie Thoyer, [sophie.thoyer@inrae.fr](mailto:sophie.thoyer@inrae.fr)

The purpose of this session is to explore how local and circular valorization of urban biowaste can improve cities' resilience by closing the loop with food production, energy consumption and urban environment (soils, urban vegetation, etc.). Organizational, economic and social models as well as technical solutions for sustainable establishment of such local and circular concept will be explored. The annual average growth rate of world population is about 1% whereas it reaches 1.9% in urban areas. The urban population is expected to reach 6.7 billion in 2050 representing 68% of the total world population. This growing urbanization results in an increasing energy and food demand and produces high amounts of municipal solid waste. This puts environmental, economic and social pressure on urban centres. Organic waste represents a large part of the urban municipal waste mass: 14 to 47% depending on the European countries; more than 60% in developing countries. This organic waste can generate odour, GHG emissions, leachate and sanitary problems. However, it also represents a great resource for renewable energy production and also for providing agronomic added-value products (amendments, organic fertilizers, biopesticides, etc.) needed for agricultural production. Thus an optimized and effective scheme of management for urban organic waste is essential to bring urban development to fully sustainable dynamics in terms of material, organic products, organic waste and energy flows within the urban area as well as between urban and rural areas. Social, economic and environmental contexts call for the development of systems based on circular economy, including management of biowaste (local biorefineries and compost producers). These systems do not necessarily need to be based on centralised, industrial size, production tools. The experiments reported by Zero Waste Europe demonstrate that new strategies of organic waste management with a better involvement of citizens and a better communication among stakeholders can contribute to improve recycling rates, with a boost of local employment. As a consequence local and decentralized models for urban biowaste management and

valorization are gaining interest. Presentations in this session may present researches on new local and circular concepts for urban biowaste valorization. They may deal with the environmental, economic and social assessment of such concepts but also with the organizational and technical solutions (collection, transformation processes, value and use of the biobased products) associated with these concepts. Tools to establish and plan new urban biowaste management schemes may be exposed. Finally, regulatory, sanitary and other bottlenecks and lock-ins may be addressed.

4s6

## **Food Connects: Food systems as drivers of circular cities**

Chair: Dr. Marian Stuiver [marian.stuiver@wur.nl](mailto:marian.stuiver@wur.nl);

Co-chairs: Bertram de Rooij MSc [bertram.derooij@wur.nl](mailto:bertram.derooij@wur.nl); Dr. Siemen van Berkum [siemen.vanberkum@wur.nl](mailto:siemen.vanberkum@wur.nl),

The urgency: Circular urban food systems

The world is rapidly urbanizing. By 2050 it is estimated that two thirds of the world's population will be urban and almost 80% of food will be consumed in the cities. The unsustainability of these urban food systems, such as consumption, production and resource use practices are already evident today. Urban areas at present show fragile rural-urban food systems, which are challenged by changing demography due to migration and rural-urban linkages.

Cities create enormous amounts of waste, deplete non-renewable resources, degrade soils, pollute water and air, and reduce biodiversity at alarming rates. Cities need circular food systems that are founded on regenerative principles with minimal losses of resources to water, air and soil erosion, and maximum reuse and recycling, while creating healthy crops and animal welfare. These food systems should secure enough healthy food for everyone. Inclusion of all people in the development of these urban food systems is crucial to its success. We are convinced a food system approach, based on systems thinking can be the driver towards circular cities. With a food system approach, different dimensions are better understood, making it possible to work towards systemic changes and target interventions at different scales and across sectors. The food systems approach connects different aspects like diets, culture, economy, equity and sustainability. Food connects!

Aims of the scientific session: In this scientific session we discuss the latest insights from ongoing research and projects which places the food system as a driver for circular cities. We kindly invite the scientific and professional community to join and submit abstracts for papers to be presented during the session. We suggest the following subtopics: systems thinking, design approach, food systems, urban-rural interactions, equity, inclusiveness, transition pathways and leadership. We propose the following subjects: (i) Circular urban food systems for food and nutrition security: how to reduce natural resource use while avoiding trade-offs in pursuing different objectives of food system

transformation. (ii) Governance in rural-urban food system settings: challenges and possible governance arrangements for healthy, inclusive and sustainable food systems. (iii) Improving access to nutritious food in urban contexts: ensuring social embedding of technical solutions (e.g. food fortification and reducing food waste).

4s7

## **Circular textiles**

Michiel Scheffer, [michiel.scheffer@wur.nl](mailto:michiel.scheffer@wur.nl)

The academic session would be to promote exchange of research and debate on ways to better assess and monitor the footprint of textile production. If we want as a world to be completely fossil free by 2050, we need to have good instruments to assess our current footprint, and even more instruments to monitor the footprint of consumption of clothing, production of textiles and extraction of raw materials, including the use of energy, water and chemicals. Recent studies for the Dutch government have demonstrated the lack of longitudinal data. The textile strategy of the EU has also highlighted the importance of better statistics. Currently research and policy is very much based on anecdotal data, simulations and approximations. Examples are the 8000 liter water needed to make 1 kilo of cotton, the environmental impact of leather production, the impact of fast fashion on textile consumption, the impact of re-use, resell and refurbish of clothing on overall textile consumption. While this type of information may fuel a call for action, it is to limited to choose strategies for change and to monitor the effect of those strategies.

The session would focus on papers presenting methods and evidence on better understanding aspects of the impact of textile production from agricultural economics to consumer studies, including industrial aspects. The session wants to present both papers focusing on reduction of the footprint of consumption in developed and in developing countries. There is particular interest for studies focusing on cotton, on feedstocks for biobased fibres and on the quantitative impact of re-use and recycling. The session excludes papers based on anecdotal data and on one -off research, but wishes to select papers based on longitudinal data (or in the development of longitudinal data), on consumer panels, on long term value chain data. It may also serve to present results of studies and research on tracing value chains (e.g. through remote sensing, blockchain etc...). Finally research on sustainable labelling or other codes of conducts is welcome, as long as they present and inform about long term change and the possibility to monitor trends in the future.

## **Governing products towards circularity**

Petrus Kautto, Finnish Environment Institute, Petrus.Kautto@syke.fi

Harri Kalimo, The Brussels School of Governance, Vrije Universiteit Brussel,  
Harri.Kalimo@vub.be

As a response to the unsustainable, conventional 'take-make-dispose' economic model, the European Commission and several other actors envision to make Europe a circular economy. The systemic and disruptive changes required for such a transformation will not take place without significant changes in existing regulatory structures. Less clear is, however, what these changes will be in practice.

Whilst there may be limits to setting effective policies to directly constrain the use of virgin raw materials, high hopes have been placed on governing on upstream phases such as product design, durability and service development. Compared to the bulk of existing regulation targeting end-of-life phases such as waste management and recycling, these goals are much closer to the core of production and consumption systems. Consequently, it may also be more problematic for legislators to directly regulate the environmental impacts of production and consumption for economic reasons.

In this scientific session we will discuss recent developments in this policy area: how can product policies enhance environmentally sustainable circularity? What kind of policies are needed to make products more circular? How could and should current instruments such as the Ecodesign Directive or various Extended Producer Responsibility systems be developed? Presentations in this session may analyse individual initiatives, existing instruments or wider regulatory strategies for sustainable governance towards circularity.

## Theme 4: Partnerships: Governance of transitions

### masterclasses 1-2

4m1

#### **Bringing nature and farming in balance together – the case of the Dutch farmer collectives**

Lisa Deijl, ldeijl@boerennatuur.nl

Alex Datema, adatema@boerennatuur.nl, Harm Kossen – collectief Natuurlijk Limburg – kossen@natuurrijklimburg.nl, Aard Mulders – ministry of Agriculture and Nature – a.n.a.m.mulders@minlnv.nl

Roughly 2/3 of the Netherlands' land surface is used by agriculture. Therefore, the Netherlands' biggest challenge to save its native biodiversity is taking place in the agricultural sector, which also happens to be one of the most highly-productive agricultural sectors of the whole world. Can farmers be engaged in conservation work? And if so, how can this be done in the best way? In this masterclass we present the unique Dutch model of governance around agri-environmental measures. Since 2016, the Dutch government allows only groups of farmers called collectives to receive subsidies for farmland habitat conservation. This unique governance structure was set up to coordinate conservation measures at a landscape scale, and to thereby achieve a greater positive impact on biodiversity. In these collectives, the farmers self-organize to create optimum habitats for protected species on their lands. In this masterclass, the chair of the national association of collectives and dairy farmer Alex Datema will explain how this bottom-up system works and why it works to motivate farmers. Harm Kossen, a farmer advisor for the collectives will explain his vision on embedding conservation measures in agricultural production to achieve a more circular agriculture. And Aard Mulders of the Dutch Ministry of Agriculture will elaborate on the role that the Dutch government took on in giving shape to this bottom-up approach. This session serves to inspire thinking about what is needed for innovative governance arrangements such as this one to succeed.



4m2

## **Meet Becky – food waste free consumers using positive social norms**

Sanne Stroosnijder, [sanne.stroosnijder@wur.nl](mailto:sanne.stroosnijder@wur.nl) – WFBR, Erica van Herpen, [erica.vanherpen@wur.nl](mailto:erica.vanherpen@wur.nl) - WU-MCB, Marjolijn Schrijnen, [schrijnen@voedingscentrum.nl](mailto:schrijnen@voedingscentrum.nl) - Netherlands Nutrition Centre

The transition towards a circular bio-based and climate smart society requires major changes in consumer behavior. Although many consumers consider sustainability and circularity important, and there are various initiatives to encourage consumers in this regard, we still know little about what works and what does not work for consumers and which behavioral interventions currently have the most impact. In this masterclass we zoom in on the prevention of food waste on household level, an important and impactful aspect in the broader transition to a more circular food system. In this masterclass we zoom in on the prevention of food waste on household level, a vital step in the transition to a more circular food system. Experts from Netherlands Nutrition Centre and WUR will share their 10+ year experience and lessons learned on how to use the positive social norm, as one of the core drivers for food saving behaviour in households. We will touch upon both the science as well as the practical experience behind: '- addressing household management practices, such as planning, storing, and preparation issues, '- increasing awareness, improving food-related skills and providing opportunities (nudges) '- applying household intervention campaigns and toolboxes, including mascotte Becky. Netherlands Nutrition Centre and WUR are longstanding partners in the Dutch food waste reduction strategy. Both are implementing partners in the Foundation Samen Tegen Voedselverspilling (Food Waste Free United), which has the objective to make the Netherlands one of the first countries to cut food waste in half, thereby realizing Sustainable Development Goal 12.3.

## Theme 4: Partnerships: Governance of transitions

### Workshops 1-5

4w1

#### **Gamification of the circular biobased economy: knowledge integration and diffusion**

Tamara Metze, [tamara.metze-burghouts@wur.nl](mailto:tamara.metze-burghouts@wur.nl)

Hilke Bos-Brouwers, [hilke.bos-brouwers@wur.nl](mailto:hilke.bos-brouwers@wur.nl), Simon Oosting, [simon.oosting@wur.nl](mailto:simon.oosting@wur.nl),  
Bjorn Berendsen, [bjorn.berendsen@wur.nl](mailto:bjorn.berendsen@wur.nl).

Alessandro Canossa, [acan@kadm.dk](mailto:acan@kadm.dk), Luis Laris Pardo, [lupa@kadm.dk](mailto:lupa@kadm.dk), Alexis Emmanuel  
Lozano Angulo, [aang@kadm.dk](mailto:aang@kadm.dk), Royal Danish Academy, Filip de Bois PBL (tbc)

Over the last 20 years the digital game as a medium in entertainment, popular culture, but also as an academic field of study has increasingly received attention. Digital games in the commercial entertainment industry are very successful as we can tell from record-breaking sales and many online multiplayer environments. This is going hand in hand with an increase of research into their effects and relevance – as well as into applications of serious gaming in for the development of alternative scenario's, in order to improve public understanding of complicated technological issues, but also for more adaptive governance and decision making. In this workshop we aim to experiment with a game designed by the Royal Danish Academy about sustainable food production (see below for an impression of parameters and the game which is now about sustainable food production). In preparation of the workshop we will adapt the parameters for the game with knowledge from Wageningen researchers about circular agriculture from several different disciplinary perspectives. This will be done in collaboration with the flagships and the wildcards). In addition we will collaborate with stakeholders from society (for example the 34 initiatives from flagship3) to test and improve the game. Hence, the circular food game will be prototyped and is a boundary object that enables (1) integration of knowledge in an interdisciplinary setting; (2) and a way of engaging with society and develop the game and knowledge in a form of cocreation (3) it may serve as a way for knowledge valorization. At the conference Circularity@Wur we will organize a workshop to test and further improve the game as a way for knowledge diffusion, and make it available to a broader public. In parallel with this workshop, we will organize a panel session with academics about serious gaming, gamification and influential visualizations in a transition to a circular biobased economy.

4w2

## **From linear to circular: Designing rules for new partnerships in the bio-based and food sectors**

Jan Starke, [jan.starke@wur.nl](mailto:jan.starke@wur.nl), Mariana Cerca, [mariana.cerca@wur.nl](mailto:mariana.cerca@wur.nl), Olga Schagen, [olga.schagen@wur.nl](mailto:olga.schagen@wur.nl)

Realizing circularity in our bio-based and food systems will require changes in all layers of our supply and consumption chain, including the different stakeholders along this chain. As envisioned by SDG 17, effective multi-stakeholder partnerships should be encouraged. The transition towards a circular bio-based society will demand innovative governance arrangements influencing multiple stakeholders to realize transformative changes. When replacing linear with circular systems, stakeholders need to find new ways of cooperation. This includes changing traditional supply chain roles towards more circular arrangements, where the supplier could also obtain the role of the consumer. Moreover, radical circular initiatives clash with the current ways of thinking, organizing and doing. In a successful transition, such initiatives become part of a new circular system and thus need to fulfil new roles without losing their radical core values. The various types of resulting conflicts require tailored governance and innovative rule systems to realize a circular, bio-based economy. Hence, the workshop aims to understand how such new, innovative governance structures in a circular system could look like. And more concretely, what should be the 'output' of these arrangements, for example: allocations of resource value, supply flows, new contract forms, new ways of settling conflicts, or organizing through cooperatives. The workshop will start with participant introductions and an icebreaker activity, followed by an introductory presentation of the workshop aims, objectives and some examples of new partnerships. Groups will further discuss the design of circular governance structures. Finally, by bringing scholars and practitioners from the bio-based and food sectors thinking together, the workshop will promote networking opportunities and mutual learning experiences, as well as inspiring concrete examples on how new circular governance structures can work in the transition towards a circular bio-based society.

4w3

## **Closing cycles together. Approaches and methods to find circular solutions at the local level**

Carmen Aalbers, [carmen.aalbers@wur.nl](mailto:carmen.aalbers@wur.nl), Wim de Haas, [wim.dehaas@wur.nl](mailto:wim.dehaas@wur.nl)

We want to organize an interactive workshop on these questions, for researchers and practitioners. In this workshop we will have some short presentations and we will discuss conditions, approaches and the removal of barriers.

Abstract follows

4w4

## **Pathways to resilient food economies of cities around the world**

Chair: Bertram de Rooij MSc; Co-chairs: Dr. Marian Stuiver [marian.stuiver@wur.nl](mailto:marian.stuiver@wur.nl),

Contributions organized by:

Dr. Katrine Soma (case Nyera-Kibera, Nairobi, Kenya), Lotte Roosendaal MSc (case Dhaka, Bangladesh), Katherine Pittore MSc (case Kampala, Uganda), Dr. Sabine O'Hara (case Washington), Dr. Hilke Bos Brouwers (case Amsterdam)

The urgency: Resilient food economies worldwide

Our cities need robust and sustainable food systems which can secure enough healthy food for everyone. To develop and sustain healthy and resilient urban food systems, improved understanding is needed; not only about the value chains, but also about the interaction with the environmental and socio-economic dimensions. Circular, bio-based and climate smart solutions to urgent challenges will depend on local co-creation strategies and appropriate governing locally, to move forward in transition towards a highly resilient society.

Our cities need robust and sustainable food systems which can secure enough healthy food for everyone. To develop and sustain healthy and resilient urban food systems, improved understanding is needed; not only about the value chains, but also about the interaction with the environmental and socio-economic dimensions. Circular, bio-based and climate smart solutions to urgent challenges will depend on local co-creation strategies and appropriate governing locally, to move forward in transition towards a highly resilient society.

We are convinced a food system approach, based on systems thinking can be the driver towards circular food economies in cities. A food system approach that considers the different dimensions and the complex context specific interaction, appealing shared narratives and a strong governance and participatory approach, is the basis for pathways

towards systemic changes and targeted interventions at different scales and across sectors. Pathways to a food secure, sustainable and -last but not least- circular food future.

Aims of the workshop: In this workshop we would like to explore the way forward in different projects: Washington DC (USA) -a food system vision departing from Urban Food Hubs, Amsterdam (Netherlands) -building an agri-food system based circularity by design and Kampala (Uganda), Dhaka (Bangladesh) and Nairobi (Kenya). The projects will present stories about unravelling and strategizing urban-rural food systems considering rural urban linkages and migration.

The stories will concentrate on different subjects:

1. Rural and regional transformation, by means of urban-rural economies, regional circular systems, regional value chains, etc.
2. Informal settlements and migrant cities and their need for sustainable food systems
3. Governance in rural-urban food system settings, involving the public and private actors, and community networks and other informal players.
4. Availability of nutritious food in urban contexts, based on urban-rural linkages with circularity in food waste, food fortification, and with social embedding of technological solutions.

After the presentations we will work in groups and discuss pathways to a food secure, sustainable and circular food future. We focus on insights and learnings from these projects and implications for designing Future Food System projects. This will increase participants' understanding of what defines the food system approach and why & how it works (or: can work) within different contexts.

4w5

## **Circular fashion**

Michiel Scheffer, [michiel.scheffer@wur.nl](mailto:michiel.scheffer@wur.nl)

In thinking about circular fashion most attention is devoted to the acquisition of clothing, but much less so to the wearing, storage, maintenance and disposal of clothing. The attention towards the acquisition of clothing tends to focus on a single item, without looking at possible coherence in a wardrobe as whole. Publicity, influencers, fashion shows all focus on influencing the buying decision. Even fashion museums focus on single items, quite in contrast to ethnologic musea that try to understand the dress code and the wardrobe. However one wonders whether the utilisation of clothing has an effect on buying decisions. Hence understanding wearing and washing might be of interest to understand how to reduce the environmental impact of the clothing industry. The key might be in creating an affective bond between a person and an item, so as to quote Gandhi "one wears with love something made with love". It is thus important what forges

affective bonds between person and goods: in terms of technologies used and in immaterial values. Also of relevance is whether that bond is created through an investment, or can also be created by other types of transactions, like renting or leasing, swapping or borrowing clothing. The act of maintenance: storing, washing and repairing is possibly also of relevance. The workshop aims to explore with practitioners in textile design, fashion design, retailers, actors in the sharing, swapping and renting of clothing and actors in textile care and services strategies of consumers and strategies to interact and intervene in consumer choices.

4w6

## **TerrAgenda: A manifest for healthy soil in 2030!**

Margot de Cleen, [margot.de.cleen@rws.nl](mailto:margot.de.cleen@rws.nl)

In the Netherlands soil and land are under pressure. Societal challenges and the need for transitions increase this pressure with claims on space and soil ecosystem services, while the landscape and eco- and geosystem services already suffer severe degradation. Soils and land are essential for welfare and wellbeing. Therefore circular use of soils and land are essential.

It's already more than 6 years ago that the Sustainable Development Goals were published. For SDG 15, life on land, only small progression is made. It's time for a change. How to speed up? We still have a lot of questions to answer and solutions to find: 'despite our soil protection policy degradation continues; do we need enforcement or other measures?' 'What do we need to connect farmers, nature conservators and civilians to find solutions to pay for carbon' 'how do we sustainably urbanize and at the same time realize circular land use and no net land take?' 'how can we diminish our footprint?' 'can or does only the land owner decide how land should be managed?'

Dutch stakeholders from public and private sectors, the knowledge community and NGOs, got together and drew up a Manifest accompanied by a 'living action program' with actions and agreements to give a boost to achieving SDG 15.3 and thus to achieving a lot of the societal goals.

Main core of the agenda is: 'embrace the natural system, give soils a voice, appoint an ambassador and connect networks'. This is part of area development in urban and rural regions.

We want to share ideas, practices and knowledge gaps and we want to explore if this approach can be up-scaled to an international level.

The aims of this session are:

- share information on the process towards TerrAgenda
- exchange ideas and good practices on ways to come to land degradation neutrality (LDN)
- Identify knowledge gaps and policy hiccups to achieve LDN
- Identify manners to give soils a voice in decision making and activities
- exchange practices in rural and urbanized areas

Set up

Introduction to the TerrAgenda by Co Molenaar and Margot de Cleen

Pitch by one of the soil ambassadors of the TerrAgenda

Breakout sessions