

# **Urban Food Justice**

a social platform on urban agriculture in the Leeds City Region



## **Workshop 3**

**Urban metabolism, soil quality and  
soil rehabilitation**





# Urban Food Justice – Workshop 3

Workshop 1 – Feed Leeds and Urban food Justice launch

Workshop 2 – Land access

*Workshop 3 – Urban metabolism and soil rehabilitation*

Workshop 4 – Edible landscapes

Workshop 5 – Social cohesion

Workshop 6 – Economic sustainability

Workshop 7 – Sustainable food planning

Workshop 8 – Leeds city region growing fair and concluding event



A photograph of a garden bed. In the foreground, there are large green leaves, possibly from a squash plant. Behind them, a bed of pink and red flowers, likely cosmos, is growing. The ground is covered with brown mulch or straw. The background shows more greenery and a hint of a building.

# Summary of workshops 1 and 2

- Presentation on international cases by Andre Viljoen (University of Brighton)
- Discussed “Envisioning Urban agriculture in Leeds”
- Tour of community gardens (including a rooftop garden) in Chapeltown
- Planted a public orchard (for the start up of Feed Leeds)
- Presented various legal options for accessing the land in Leeds
- Started a resource bank for urban agriculture (land bank)
- Presented three projects seeking for land in Leeds
- Discussed “Identify key people for development of urban agriculture and ways to involve them”

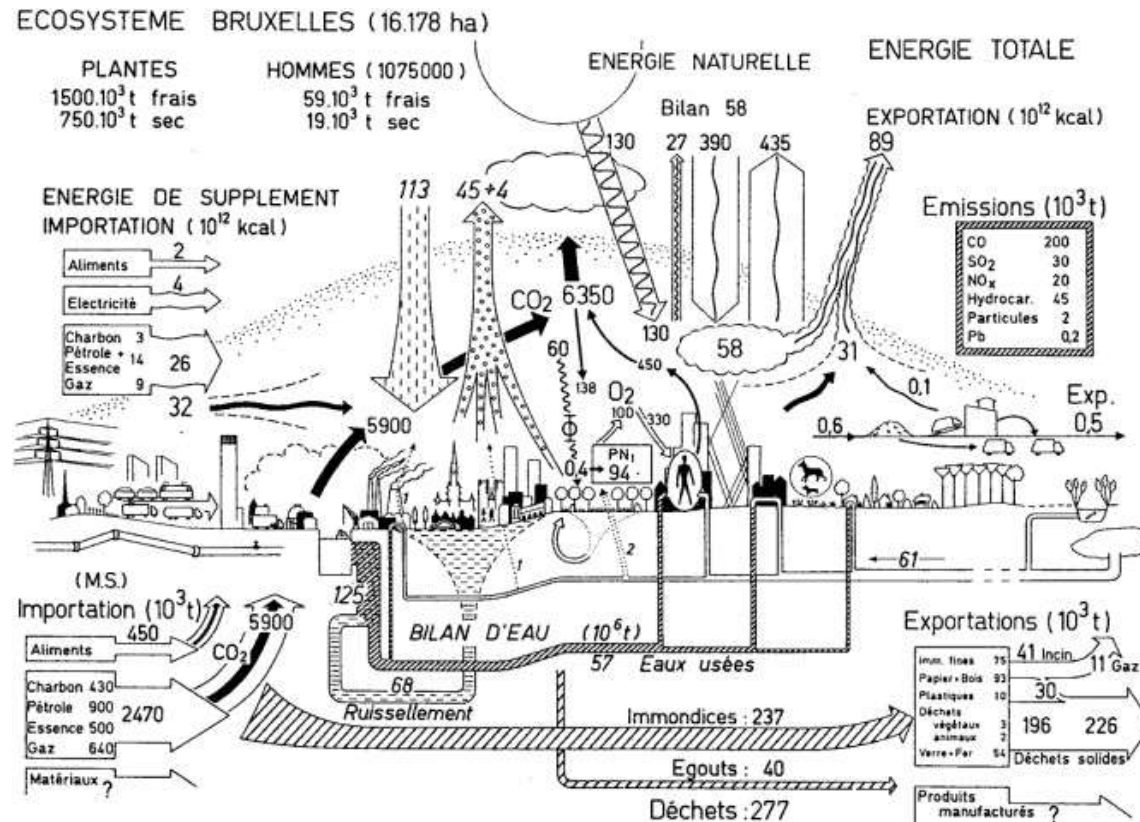
# Today's programme

- 1.30-1.45 **Chiara Tornaghi** (University of Leeds)  
Welcome and Introduction: **Urban metabolism and urban agriculture**
- 1.45-2.15 **Stella Keenan** (Leeds City Council)  
**Soil contamination.** The role and policy of Leeds City Council
- 2.15-2.45 **Niels Corfield** and **Pete Tatham** (Edible Cities and Leeds Permaculture network)  
**Bioremediation, mycoremediation** and soil structure . How plants and mushrooms can help improve the soil.
- 3.00-3.45 **Sara-Jane Mason** (Royal Horticultural Society)  
An overview of **composting techniques** and a practical workshop: let's **build a wormery to take home**
- 3.45-4.00 **Andy Ross** (University of Leeds): Biochar for fertility and greenhouse gasses reduction
- 4.00-4.30 **David Hutchinson** (Yorkshire Charcoal): low scale biochar production: a demonstration

On the table: Flipchart on soil networking



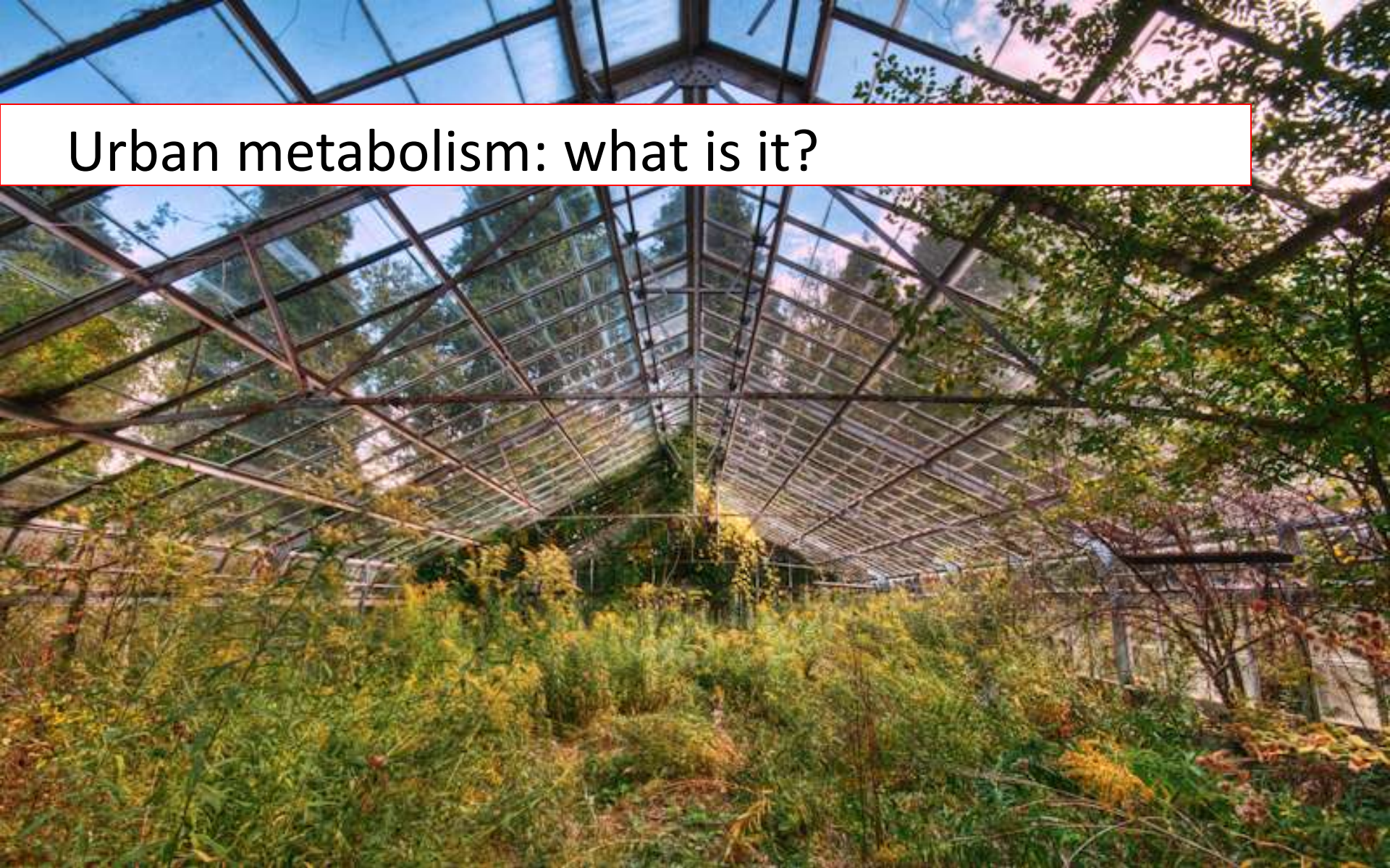
# Urban metabolism: what is it?



- A concept coming from biological sciences
- A way of looking at the city as a living (eco)system
- Looking at the input and outputs of water, energy and materials, elimination of waste, as well as the influence of socio-economic processes, in determining the shape and the functions of a city



# Urban metabolism: what is it?



**Not only from “green” to “brown” fields...**





Detroit has 47 square miles of vacant land – 30,000 acres (previously developed for residential, retail or production functions)

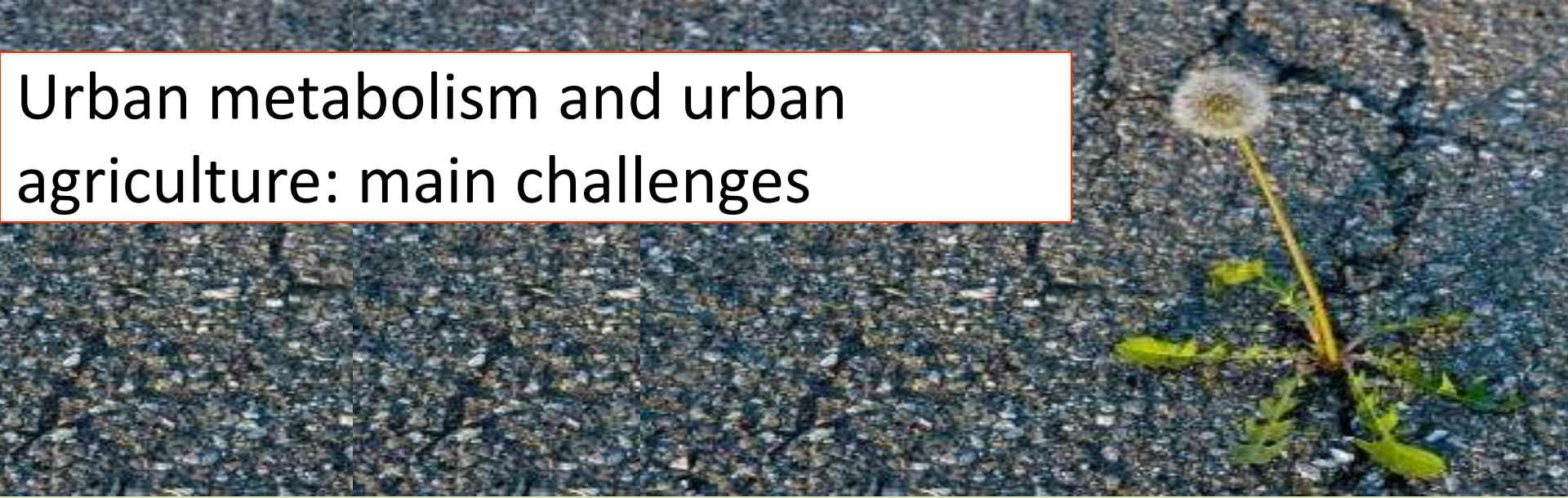
A city fit for growing?

## Urban metabolism: changing functions





# Urban metabolism and urban agriculture: main challenges



- Meet the challenge of sustainable food planning for community resilience
- Identify alternative (new) suitable growing spaces
- De-contaminate the soil
- Improve soil fertility (i.e. in parks, for community gardens, in home gardens...)
- Create opportunities for ecological re-intensification, green corridors, facilitate pollinators (Remove tarmac and concrete where not any more useful, increase green roofs and rooftop gardens)
- *Re-learn how to establish virtuous cycles between food, waste and soil.*



## Container growing can be an option



- Almost everything can grow in containers
- Containers can be suitable alternatives during de-contamination phases or when costs for decontamination or transformation (i.e. Remove tarmac) are too high
- Back to Front handbook
- *SAGE: modular greenhouses out of recycled materials*



## Mobile containers growing - Cultivate London, Brentford Lock







Removable raised beds - Todmorden





Philadelphia – vertical salad garden



# Back to Front Handbook : solutions for small (rented) front gardens

## Detail One - stackable planters

Blocks are made from recycled timber 100x100x100mm in size.



**BLOCK 1** - 1 block and corner pieces (not all) form the base of the structure.



**BLOCK 2** - 1 block and corner pieces (not all) form the sides of the structure.



**BLOCK 1**  
+ **BLOCK 2**

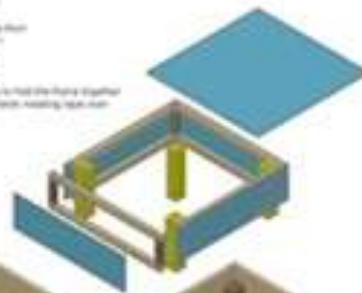


**BLOCK 1**  
+ **BLOCK 2**  
+ **BLOCK 2**

## LID

Plastic sheet 1000mm x 1000mm x 2mm  
or 1000mm x 1000mm x 2mm  
or 1000mm x 1000mm x 2mm  
or 1000mm x 1000mm x 2mm

Use corner blocks and corner pieces to hold the lid together  
using string through corners. Also, use string to hold  
which you want to use.





# Container growing for contaminated land: SAGE in Glasgow

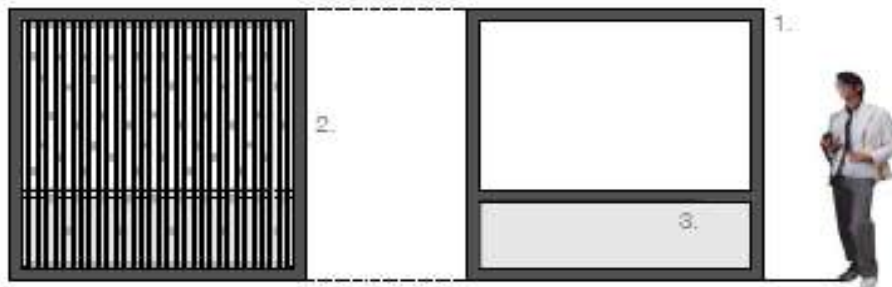




# SAGE – (Sow and grow everywhere)

## executive summary part 3 - the modular system:

perimeter raised planter:

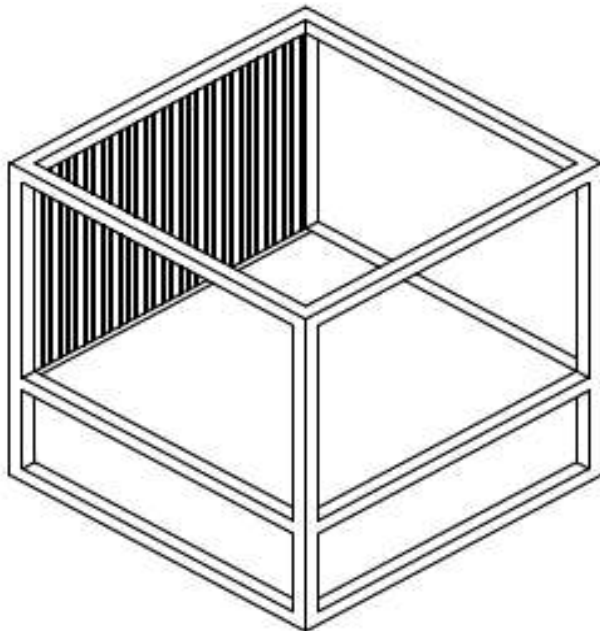


1. pressure treated and painted timber outer frame: preferably reclaimed timber or from local Scottish source. Painted finish (black) water based wood stain (Ecos organic paints - or similar). Joints to be 2 or 3 way notched/lapped timber joints.

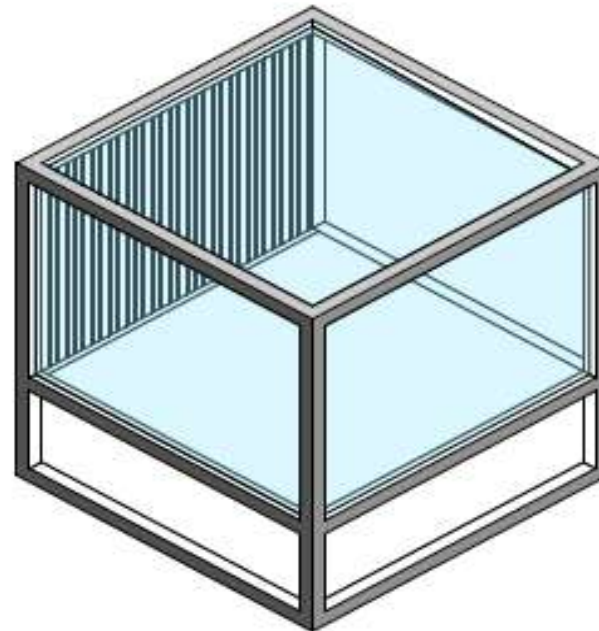
2. reclaimed pallet wood infill to 1 side: reclaimed pallet boards secured at junctions with spacer blocks (also from dis-assembled pallets) - to form vertical screen spacing of boards and positioning of spacer blocks to avoid forming easy hand/foot holds. Screen fixed within outer frame.

3. textile 'bag' hung in frame filled with growing medium: 'growing bags' bespoke local manufacture. Growing medium (for prototypes in advance of longer term supply chain): bulk volume 50% imported topsoil (local & approved source), 50% composted green waste (local & approved source) - plus ameliorants.

4. 'green house' version: twin wall clear plastic sheeting (re-cycled plastic?) secured within outer frame incorporating hinged openings for access/ventilation etc.



4.





**the urban setting and sites:**  
Available sites tend to be limited.

Typically previously developed sites requiring the importation of growing medium.

**the opportunity:**  
Potential for a large number of people to become involved in each scheme.

Highly visible temporary land-use with designed elements being removable if sites are intended for redevelopment in the medium to long-term.























Woodlands Community Garden – Glasgow























## But what about dealing with soil remediation?

- What can community groups and individuals do to assess/test soil quality?
- Is there any affordable lab?
- How to deal with soil contamination?
- How to improve urban soils that have not been used for agricultural purposes for a long time?
- To what extent mushrooms and plants can help to remediate soil quality?
- What can my own compost do, and how can I get my compost working properly?
- Is biochar the new miracle for urban soils and the planet? Does it really work?



# References and resources

## *Guidelines on soil contamination:*

- Federation of city farms and community gardens: “Contaminated land guidelines”, (2007), available for download: <http://www.farmgarden.org.uk/publications/135-contaminated-land-guidelines>
- Leeds City Council, Contaminated land - Inspection strategy for Leeds (2001), <http://www.leeds.gov.uk/council/Pages/Contaminated-land--inspection-strategy.aspx>

## *References on urban metabolism*

- Gandy M. (2004), “Rethinking urban metabolism: water, space and the modern city”, in *City*, 8 (3), pp. 363-379
- Kennedy C., Cuddihy J., Engel-Yan J. (2007), “The Changing metabolism of cities”, in *Journal of industrial ecology*, 11 (2), pp. 43-59
- Vanesa Castán Broto, Adriana Allen and Andreas Eriksson, “Urban Metabolism at UCL – A working paper”, available online at: <http://www.bartlett.ucl.ac.uk/dpu/urban-metabolism/project-outputs> [last accessed: 11 December 2012]

## *References on biochar*

- UK Biochar research Centre, Edinburgh – [http://www.biochar.org.uk/list\\_of\\_publications.php](http://www.biochar.org.uk/list_of_publications.php)
- Sarah Carter and Simon Shackley (2012): Biochar: Biomass energy, agriculture and carbon sequestration, Boiling Poing, Issue 60, pages 42 - 45



# Pictures Credits

Slide 1 – <http://www.gardenswag.com/wp-content/uploads/2011/12/testing-soil-quality-soil-pH-values1.jpg>

Slide 2 – creative commons

Slides 3 and 4 – Author's own pictures

Slide 5 – <http://www.sciencedirect.com/science/article/pii/S0269749110004781>

Slide 6 – <http://miragebym.blogspot.co.uk/2009/11/modern-runis-grossingers-resort-10-11.html>

Slide 7 – <http://urbanism.org> <http://cityfarmer.info> <http://cereplast.com>

Slide 8 – [http://www.123rf.com/photo\\_14860882\\_weed-growing-on-crack-in-old-asphalt-pavement.html](http://www.123rf.com/photo_14860882_weed-growing-on-crack-in-old-asphalt-pavement.html)

Slide 9 – [http://www.dothegreenthing.com/blog/growing\\_happiness\\_from\\_recycled\\_plastic\\_bottles](http://www.dothegreenthing.com/blog/growing_happiness_from_recycled_plastic_bottles)

Slide 10 – <http://www.cultivatelondon.org/#jp-carousel-369>

Slide 11 – kindly donated by Incredible Edible Todmorden (IED)

Slide 12 – <http://www.flickr.com/photos/blaineo/2984552937/>

Slide 13 – <http://www.backtofront.org.uk/>

Slide 14 , 17, 18, 19 and 20 – Author's own pictures

Slide 15 and 16 – <http://sowandgroweverywhere.org/>

Slide 21, 22, 23 and 26 – <http://www.woodlandscommunitygarden.org.uk/>

Slide 24 and 25 – Author's own pictures