Defra Waste & Resources Evidence Programme

WR0211 Unlocking the potential of community composting

Annex 4

Scenarios to assess and explore the potential of the community composting sector

October 2008

Scenarios to explore the potential of the community composting sector

One of the key research areas throughout the research project has been to develop an understanding of how community composters are responding to the different challenges they face. A number of common themes relating to new avenues of work emerged during the stakeholder workshops that were then explored in a series of telephone interviews with key experts. In response to the different challenges faced by the sector as discussed above, individual groups are starting to pursue a diverse range of alternative income generating activities. As a result, there are a number of trends starting to emerge within the sector, some of which are distinct from how the sector has evolved to-date, which suggests that should these trends continue to develop the sector may look considerably different in the future. This report summarises the forces working for and against the expansion of the community composting sector as perceived by practitioners working in the sector and explored throughout this project, and explores a series of scenarios for possible future trajectories of the sector based on the research findings, interviews with key experts within the sector and a simple spreadsheet model (illustrated at the end if this paper).

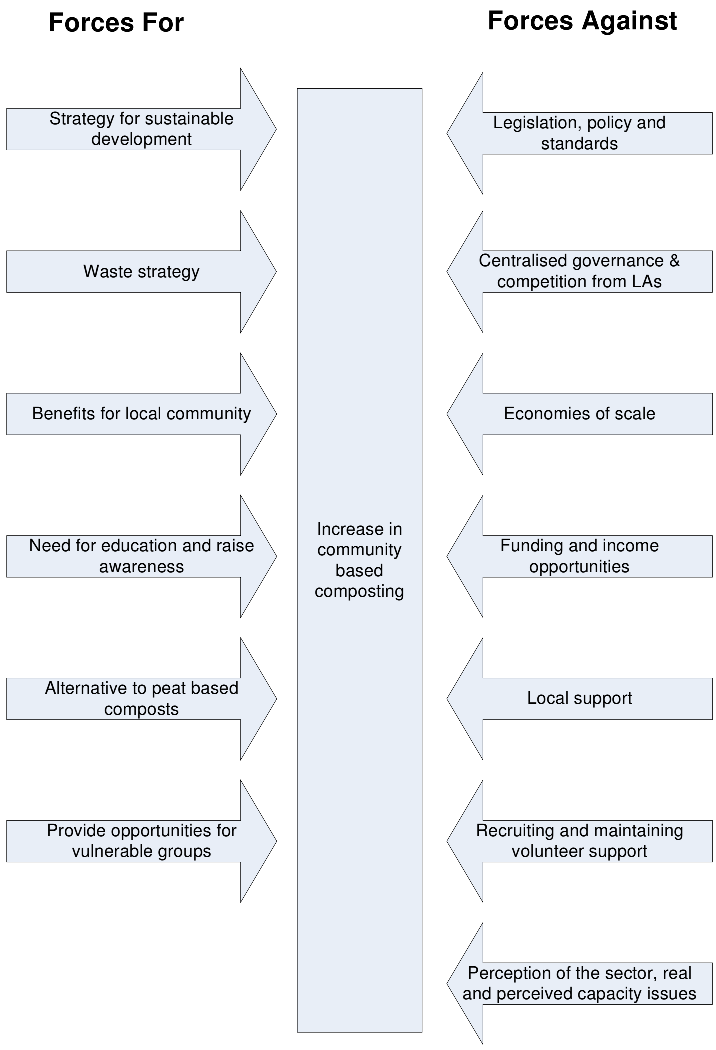

Figure 1 – Force field diagram summarising community composting practitioners' perceptions of the 'forces for' and 'forces against' community based composting

Emerging trends in community composting activity

The drivers (forces for) and challenges (forces against) drawn from the research are summarised in the force-field diagram (Figure 1). Expansion of the sector along the trajectory of that observed to-date is likely to be constrained by the 'forces against' unless there are 'top-down' policies and initiatives to counter this. The 'bottom-up' response from some groups to the drivers and challenges is giving rise to the following emerging trends:

1. Local sustainability and low carbon initiatives
2. Working with businesses to set up on-site food waste composting
3. Commercial food waste collections in urban areas
4. Community groups as sub-contractors to private waste companies
5. A mix of 1-4 above

A brief outline of these trends and the associated pros and cons of each is given below.

Trend 1 - Local sustainability and low-carbon initiatives

Networks involved in providing information and advice about community composting are seeing a greater proportion of enquiries from groups interested in the wider issues of local sustainability, where community composting is an important but constituent part, compared to groups with a single focus on community composting. The networks see this as a reflection of the growing interest in the Transitions Towns initiative aimed at engaging people and communities to take local action and build resilience in their communities to mitigate the effects of peak oil (the end of cheap and plentiful oil) and climate change (Hopkins, 2008). An example of some of the drivers and areas of activity are illustrated below:

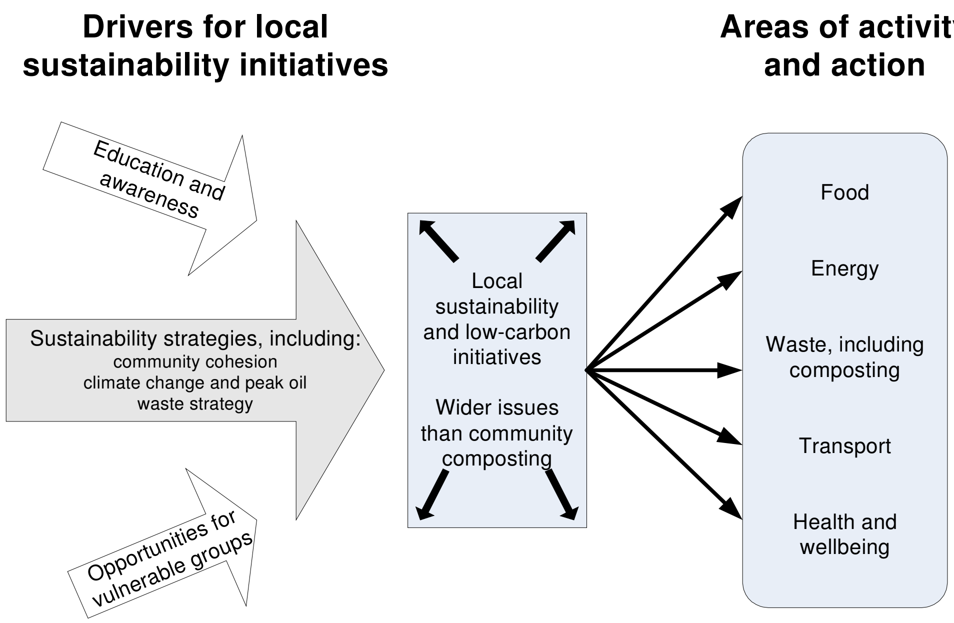

Figure 2 - Drivers for local sustainability initiatives and areas of action

Pros

- More holistic approach to local sustainability.
- Opportunities for synergies between initiatives.

- Raises awareness of the 'bigger picture' and a variety of interrelated actions.
- Scope for inclusive approach for local communities and businesses.
- Develop activities and actions appropriate to local needs and situation.

Cons

- Gaining local authority support for holistic approach may be problematic. Where support is currently available it tends to from specific departments for particular initiatives e.g. waste. Similar 'silo' issues apply at a regional and national level.
- May need to be volunteer led until funding available / secured.
- Building momentum and support takes time.
- Need to develop knowledge or access expertise across a range of issues.

Potential

Research is required to estimate the potential of this trend since no data is available.

Trend 2 - working with businesses to set up on-site food waste composting

In response to the forces working against more conventional forms of community composting some key players in the sector are seeking to develop complementary areas of activity. Legislation and policy, highlighted in Figure 1, are key factors constraining food waste composting for community groups. Although a sizeable proportion of community composters would like to develop their activities to include food waste composting, the introduction of the Animal By-Products Regulations has curtailed this and a number of schemes previously composting kitchen waste have subsequently ceased. As a result, some key players are seeking ways of developing food waste composting that is not subject to or is exempt from ABPR. One such way is facilitating SME's with catering facilities to develop on-site composting. Findings from this research show that community composting groups rarely engage with local businesses and this may be a possible area for future development. There is a general need to promote more pro-environmental business behaviour amongst SMEs and to address commercial waste generally, priorities highlighted in the National Waste Strategy (2007). Following a successful pilot project led by the community composting sector called Compost Doctors (funded by Defra's BREW Programme) which trialled a number of on-site in-vessel systems with businesses, Compost Doctors are continuing a consultancy service to facilitate on-site composting and develop appropriate systems (CRN, 2008, http://www.crn.org.uk/compostdoctors/index.htm).

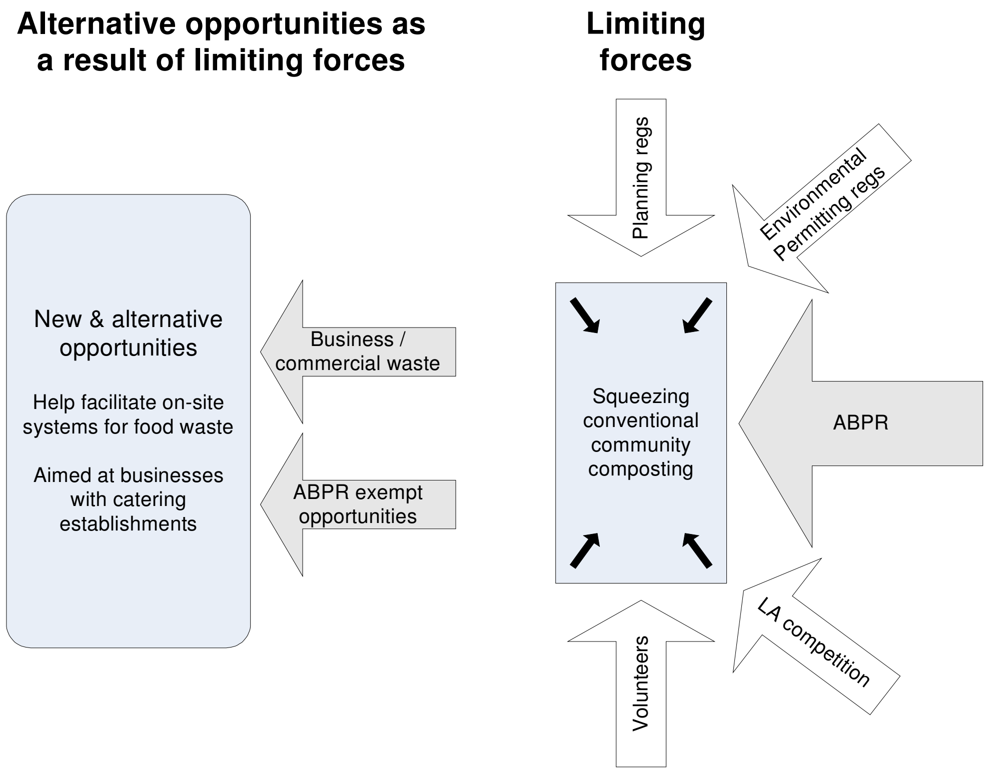

Figure 3 - Forces limiting conventional community composting and prompting key players to develop on-site composting opportunities with businesses

Pros

- Large market and considerable consultancy opportunities for community groups.
- Following the pilot Compost Doctors - have high level of expertise for on-site food waste composting.
- In the medium to long-term could lead to reduced costs for the commercial establishment - although current charges by private contractors are per lift/volume rather than weight - see ‘cons’ below.
- ‘Greening of Business’. Experience from Compost Doctors (CRN, 2008) shows that organisations taking part increased their environmental awareness and increased participation in other recycling activities (similar results from our workshops reported by householders/volunteers involved in community composting). Contributes to eco-standards and green credentials.
- Scope for working in partnership with business support agencies to offer specialised advice.
- Proximity principal.

Cons

- Under current regulations businesses not allowed to keep livestock on site even if they are based a considerable distance from the composting system - this means many businesses where on-site composting feasible and attractive are excluded, e.g. visitor attractions, larger hotels and estates, national trust (CRN, 2008).
- Very limited opportunities for volunteers (compared to alternative community composting systems).
- Charges for residual waste collection are per lift/volume rather than weight - if food waste diverted from residual waste is not of significant volume to reduce bin lifts then there are no cost savings for the business, whilst lighter residual waste delivers savings in lift/transport/disposal costs for the waste company (CRN, 2008).

- Needs initial cost outlay for the composting systems and ongoing commitment and management from the businesses involved, which may wane over time, especially if early 'returns / benefits' and not seen.

Potential

This emerging trend is based on an extension of the Compost Doctors programme which was trialled from 2006 to 2008. The Compost Doctors programme facilitated the development of on-site composting of food related waste derived from "hospitality" companies such as restaurants and sports clubs. Community composting personnel provided expert consultancy advice and hands-on experience to support the Compost Doctors trial. Waste arising and composting data was collected from July 2006 until March 2008 from eleven companies. The mean tonnage collected and composted from each venue was equivalent to approximately 7 tonnes per year (CRN, 2008).

It is likely that the target market for on-site composting would be hospitality companies in England with appropriate facilities/land and interest in managing their waste more sustainably than at present. In order to estimate the total number of hospitality outlets in England which produce a significant amount of food waste, a report on food waste arisings in Hampshire from SME hospitality outlets was consulted (Thomas et al, 2007). The authors estimated that there were approximately 3,120 hospitality outlets in Hampshire. If Hampshire is assumed to be typical for Councils in England then on the basis of relative populations, it is estimated that the total number of hospitality SMEs in England would be approximately 3,120 x 30 = 93,600. The estimate of the number of hotels and restaurants in the UK given by National Statistics Online (http://www.statistics.gov.uk) was 137,275 for 2004. The estimate of 93,600 hospitality SMEs in England would appear to be an acceptable approximation.

Assuming that a maximum of 5% and a minimum of 1% of these outlets would be capable of supporting an on-site composting programme, then this equates to around 4,680 (5%) and 936 (1%) outlets in England. Assuming that each outlet will produce around 7 tonnes of food related waste per year, then food waste directed to on-site composting from these outlets would be:

<u>1% supporting on-site composting</u>
936 x 7 = 6,552 tonnes per year

<u>5% supporting on-site composting</u>
4,680 x 7 = 32,760 tonnes per year

Trend 3 - Commercial food waste collections in urban areas

Although some established rural schemes rely on little or no external funding as they operate compost clubs and are run by volunteers, some other schemes, especially those operating regular kerbside collections, have relied on external funding. For some groups, as their funding draws to an end and they are not financially self-sufficient they are seeking alternative funding opportunities and/or changing their services to allow them to be more financially viable with limited incomes.

A small number of urban based groups have, or are in the process of, full ABPR approval. Generally speaking, schemes run by these groups were set up with external funding over a fixed term, typically 2-3 years. Mostly, these schemes piloted collecting food waste from high density housing for on-site or near-site composting. These pilots have enabled groups to develop technically viable systems. However, developing financial viability has proved difficult with groups unable to access either additional funding and/or income through local authority contracts. Findings from this research show that building relationships and securing income from local authorities is a lengthy and difficult process. The majority of groups are in some dialogue with their local authority but more formalised working arrangements are less frequent; around 20% of groups have a Service Level Agreement and around 5% have full Service Contracts.

One strategy that is gaining momentum for some groups is commercial food waste collections, where income from commercial collections might be used to subsidise household food waste collections, or groups may cease collecting from households in favour of commercial collections.

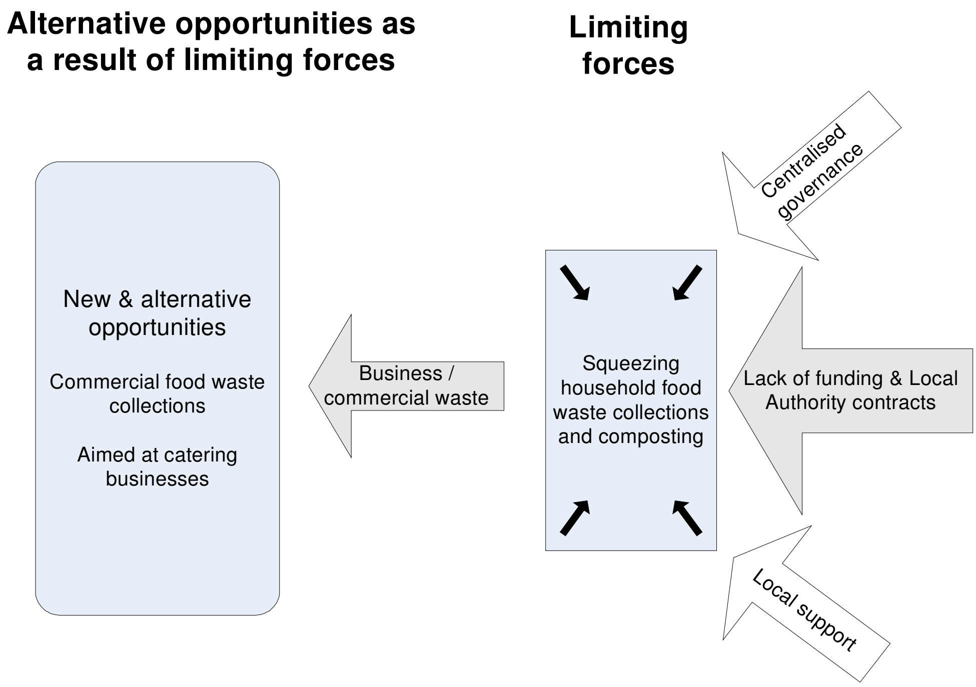

Figure 4 - Forces limiting household food waste collections and composting and prompting ABPR compliant groups to undertake commercial food waste collections

Pros

- Commercial food waste collection is a large and virtually untapped market.
- Possibilities of income from commercial collection subsidising other activities.
- Can be good for business in that it contributes to green credentials and eco-standards criteria.

Cons

- Need regular staff to provide a reliable collection service which limits opportunities for volunteers.
- May prove to be an additional cost for businesses if cost of food waste collections is not offset with reduction in residual waste collection costs. For some commercial premises their food waste is high density but low volume, and residual waste charges are usually by volume rather than weight (see ‘cons’ in section above).
- Some organisations may generate relatively homogenous food waste which may raise issues about obtaining / mixing an effective feedstock.

Potential

This trend is similar to the on-site food waste composting but it may be expected that more SMEs with significant food waste arisings (eg hospitality outlets) would participate since only collection of waste is required, rather than on-site composting. Hence, it is assumed here that a maximum of 20% and a minimum of 10% of these outlets would support separate collection of food waste by a community based organisation. Using SME estimates for England (93,600) and food arising rate (7 tonnes per year) from above, it may be calculated that food arisings from these sources might be:

<u>10% hospitality SMEs participating</u>
9360 x 7 tonnes = 65,520 tonnes per year

<u>20% hospitality SMEs participating</u>
18,720 x 7 tonnes = 131,040 tonnes per year

Trend 4 - Community groups as sub-contractors to private waste companies

Many community composting groups are not in a position to bid for and secure local authority contracts. Reconomy (new partnership organisation comprising the support organisations for the community resource sector) are exploring possible consortiums between different community resource groups to facilitate the size and breadth of expertise and service with a potential view of securing future contracts.

On an individual level, some groups are taking up (or considering) roles as a sub-contractor to larger waste management companies. This could be for household or commercial waste services. A role as a sub-contractor may be particularly relevant where the community group has developed a service or has access to a section of the community that is not offered or easily accessed by the main contractor. Limiting factors such as integrated service contracts and competition from local authorities are encouraging some groups to seek sub-contracting options.

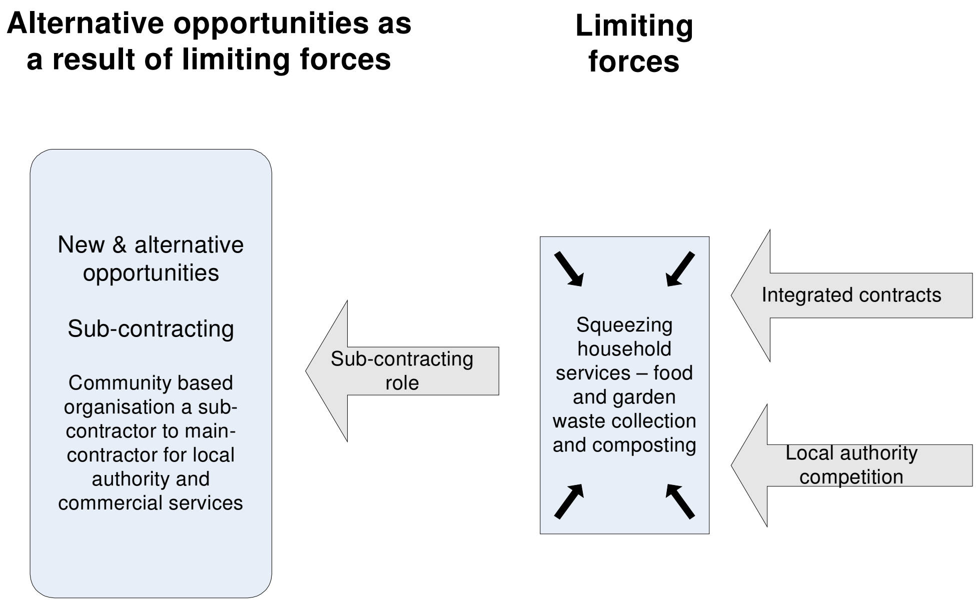

Figure 5 - Forces limiting household collections and composting and prompting groups to seek sub-contracting opportunities with commercial waste companies

Pros

- Potentially a significant opportunity for regular activity and income.
- Greater financial stability should allow scope for developing the capacity and activity of the community organisation.

Cons

- There may be issues raised by divergent values between the main business contractor and the community sector organisation.
- Usually the sub-contractor's lines of communication and responsibility are to the main contractor and not the main contractor's customer. Other research suggests that this can stifle possibilities of service improvement and innovation (Slater et al, 2007).
- 'Niche' services offered by the community sector organisations could be viewed as potential area for development by the main contractor who may move towards providing the service themselves and 'squeezing out' the community organisation. Similar situations have occurred in some areas where councils have introduced garden waste collection scheme in areas serviced by community groups.
- There could be a threat of the community organisation becoming more distant from their original objectives and from the communities they serve.

Potential

Research is required to estimate the potential of this trend since no data is available.

Trend 5 - Mix of trends 1-4

Many of the activities identified in the emerging trends appear to relate to urban-based community composting schemes, although promoting more sustainable waste management practices within a low carbon framework and some on-site composting initiatives can equally apply to rural environments. The sector has a proven track record of supporting SMEs in the development of on-site composting and also arising from the Compost Doctors programme is an extensive network which was developed to facilitate and support the on-site composting trials. This type of work appears to have excellent potential and the skills required to support on-site composting map very closely to the community composting sector. While at present the sector does not work closely with SMEs, the success of the on-site composting support suggests that it would be appropriate to consider expanding into other types waste management activities with SMEs. Hence, undertaking commercial food waste collections in urban areas would appear to be an attractive option with considerable potential and an option which could be combined with supporting on-site composting, in partnership with appropriate SMEs.

In general, the trends "Local sustainability and low-carbon initiatives" and "Community groups as sub-contractors to private waste companies" are currently the least defined and probably most complex and variable of the emerging trends and as such they require significant research to assess their potential.

Simple spreadsheet model supporting the different trends

	2006 Estimated waste composted (tonnes/year)	2010 Estimated waste composted (tonnes/year) Projected growth rates 33%	20%	Emerging Trends Additional growth (tonnes/year)
Current mix of activities (including CRED projects)	21,500	67,200	44,500	
Current mix of activities (excluding CRED projects)	14,300	44,750	29,500	
Trend 1 Local sustainability				research needed to help estimate potential
Trend 2 on-site food waste composting				
(1% hospitality SMEs in England)				6,552
(5% hospitality SMEs in England)				32,760
Trend 3 Commercial food waste collections				
(10% hospitality SMEs in England)				65,520
(20% hospitality SMEs in England)				131,040
Trend 4 sub-contractors to waste companies				research needed to help estimate potential

References

CRN (2008) *Compost Doctors Final Report to BREW*. CRN, Bristol.

Hopkins, R. (2008) *The Transition Handbook: From Oil Dependency to Local Resilience*. Green Books, Devon.

Slater, R., Frederickson, J., Thomas, C., Wield, D. and Potter, S (2007b) A Critical Evaluation of Partnerships in Municipal Waste Management in England. *Resources, Conservation and Recycling*, vol. 51, no 3, pp643-664.

Thomas, C., Dacombe, P., Maycox, A., Banks, C., Khan, T. and Slater, R. (2007) *Identification of Key Resources Streams in Commercial and Industrial Waste from Small Businesses in the Food Sector*. The Open University and Southampton University. Available from: http://technology.open.ac.uk/iws/docs/food%20sector%20C&I%20report%20part%201%20Apr07.pdf