

Summary report: sustainable clothing roadmap stakeholder meeting and next steps

5 September 2007

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Executive summary

- i. On 5 September 2007 Chatham House hosted and facilitated a stakeholder meeting to launch DEFRA Sustainable Clothing Roadmap. Clothing is one of 10 products for which Roadmaps are being developed as part of DEFRA's strategic priority of Sustainable Consumption and Production (SCP). The roadmaps aim to provide a process for stakeholders to agree and implement actions for improving the sustainability performance of the selected products.
- ii. The event was designed to engage clothing and fashion industry stakeholders and identify opportunities for improving the sustainability performance of clothing. These would be taken forward in more focused stakeholder groups and events.
- iii. Joan Ruddock, Minister for Climate Change, Biodiversity & Waste, opened the meeting. She emphasised DEFRA and her own commitment to the roadmap process. She noted the tensions between, on the one hand, the benefits in terms of personal enjoyment of fashion as well as the jobs and economic development produced by the clothing industry, against, on the other, the environmental and social downsides including resource depletion, GHG emissions, waste and poor working conditions. The roadmap process needed to build on the many worthwhile initiatives to help maintain the benefits while reducing and minimising the downsides.
- iv. Presentations and discussions considered the wide-ranging sustainability impacts of clothing and perspectives from a range of stakeholders on the priority areas for improving sustainability and the strengths, weaknesses and adequacy of existing initiatives. Impacts depended on the type of fibre, and product, how and where they were produced, used and disposed of. There was for example a lot of emphasis and support for organic cotton but also some caution about its implications for water and land use.
- v. A key trend was "fast fashion" which was popular and growing rapidly. But while its low cost and continuing change was popular with consumers this came at a cost. It was producing increasing amounts of waste with most going to landfill and relatively little use of the embedded resources involved in its production. It was also highly competitive and too often associated with low wages, poor working conditions and/or only transient benefits in producing countries.
- vi. For a large proportion of clothing the biggest environmental impacts were associated with the use phase, in particular cleaning and drying. Technology had improved efficiencies in water and energy use in that phase but had not kept up with increases in the amount of clothes we have and rate at which we clean them.

- vii. There was a range of views about the priority areas for improvement and many proposals for possible interventions and initiatives. While there were many good existing initiatives, some were still in niches and needed to be scaled up to penetrate the mainstream. Suggested priority areas to concentrate on in determining more specific actions included greater transparency/accountability along the supply chain, labour standards, public procurement, low impact fibre/fabrics, improved end of life management by remanufacture and recycling (including markets for recyclates), and better metrics on impacts.
- viii. On the next steps, Defra is to consult stakeholders on the proposed areas of improvement in more focused groups and events with a view to agreeing actions for stakeholders to take.

1. Introduction

1.1 This event was designed to bring together clothing and fashion industry stakeholders with a view to moving forward as part of a multi-stakeholder roadmap process agreeing and implementing actions for improving the sustainability performance of clothing. It provided a forum to discuss the following

- the business case for sustainable clothing;
- the sustainability impacts of clothing – gaining a shared understanding of what the current evidence shows and where the gaps are;
- opportunities for improving the sustainability performance of clothing.

1.2 The meeting was facilitated and hosted by Chatham House. In order to provide an environment where an open, discussion could begin as the start of a process that could support progress in improving the sustainability of clothing it was held under the Chatham House Rule¹

1.3 Attendees [see list at Annex 1] included stakeholders from the clothing and fashion supply chain (including raw material suppliers, manufacturers, designers, retailers, end of life management and technology), government, agencies, practitioners, academia and NGOs.

1.4 The overall aim for the day was to help:

- Identify some promising areas to be explored further in separate and more focused stakeholder groups and events; and
- Encourage stakeholder commitment to contribute to the development of proposals for targeted interventions.

¹ "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed".

2. Background

2.1 The UK government is taking action to identify, understand and address the sustainability impacts arising from products, services, and materials consumed and used in the UK. Defra, alongside BERR, is at the forefront of this work, which falls within its strategic priority of Sustainable Consumption and Production (SCP), and is taking it forward through several work strands. One of these is an initial trial of 10 product roadmaps from four high impact product areas. Clothing is one of these.

2.2 The clothing roadmap is focused on garments to include textiles used in the manufacture of clothing, but excluding shoes, accessories and commercial textiles. To date, evidence has been gathered on the sustainability impacts (environmental, social and economic) of clothing across the lifecycle as well as current interventions designed to improve sustainability performance through desk based research and stakeholder meetings. In support of this, Defra commissioned Environmental Resources Management (ERM) to conduct a project mapping the sustainability impacts and interventions for clothing² which is expected to be published by the end of 2007 following peer review. The next step in developing the clothing roadmap was this event, which brought together a diverse range of stakeholders interested in sustainability and clothing.

2.3 The roadmaps will capture evidence on the impacts of each product across its life cycle, develop a vision of the future, and begin to chart short, medium and long-term interventions to help transform each product towards that more sustainable future. The roadmaps will be developed and implemented gradually and collaboratively with a wide range of stakeholders. It provides a platform to facilitate identification of effective actions and agreement on those to be taken forward by suitable stakeholders. If successful this approach will be expanded to include other products and services.

3. Programme [see Annex 2]

3.1 The meeting was divided into three broad sections:

Scene-setting covering

- business case for sustainable clothing;
- the sustainability impacts of clothing;
- current and prospective trends;
- the challenges in improving sustainability performance;

² Defra, 2007, Mapping of Evidence on Sustainable Development Impacts that occur in the Life Cycles of Clothing (draft)

Presentations and discussion of a range of existing sustainable clothing initiatives

Facilitated discussion of

- the strengths and weaknesses of some of the main existing initiatives; and
- the potential for new initiatives or improving/extending/scaling up existing ones.

4. Summary of AM presentations, Q&A and panelists

4.1 Those making presentations and contributing to the panel session were asked to each identify **one area or issue which they consider should be the main priority for action**; and suggest **one intervention or initiative they would like to see pursued** to tackle it. **Michael Massey** chaired the morning session

4.2 **Joan Ruddock**, Minister for Climate Change, Biodiversity & Waste, opened the meeting with two challenging questions: could more be done to improve the sustainability of clothing across the whole life cycle; and could the clothing industry develop a sustainable business model? The clothing and fashion industries were major contributors worldwide of jobs and economic development but also posed significant challenges. There were environmental challenges in the use of energy, water and raw materials as well as in the waste produced. And also social challenges in working conditions in fields and factories, especially in poorer countries. We needed to be realistic about the tensions pulling us all in different directions. As a consumer she appreciated the range and value of clothing available but, as a citizen as well as environment minister did not want that to be at the expense of the environment or the health and welfare of those working in the industries around the world. She looked forward with interest and enthusiasm to the work on the roadmap building on the activities of those in the industry who already saw sustainability as an opportunity not a threat. There was increasing interest and concern among consumers to see improvement and she was optimistic that stakeholders working in partnership could make a real difference.

4.3 **Julie King** outlined the increasing emphasis on sustainability in the fashion sector and emphasised the importance of integrating environmental and social factors in design as well as education and training in the industry. There needed to be as much focus on marketing as on production. There were many encouraging signs of this happening with development of new courses and initiatives looking to reduce wastage in production and encourage fabric recycling. These aims needed to be integrated in industry standards. Throwaway fashion was not sustainable long term. Might its end be in sight?

4.4 **Bob Ryder** set out the wider context of the roadmap process within Defra's SCP priority. Our personal impacts were the key ones to address

with 80% coming from a few key product/service groups: transport, food, homes, and cloths. Consumption of clothing had grown radically. The aim of the roadmap process was to try to develop a better understanding of the factors underlying consumption and the major impacts, and based on that understanding identify priorities and develop specific actions over both the short and longer term to make improvements. It was important to look across the whole life cycle. Traditionally a lot of environmental policy had focused on the production stage, and more recently on end of life. But could more be done the earlier design stages? It was not anticipated that the road map process would come up with rapid or easy answers but offered a platform for sustained efforts in improving awareness and understanding and catalyzing partnerships for change – setting a trajectory for improvement.

4,5 **Katharine Hamnett** in a [video interview](#) explained how in the late 1980s she had been prompted to check, to make sure the company were not doing any harm. That meant looking at the entire supply chain to make sure that every phase was as good as possible. They had to apply very stringent standards from the very beginning. It started with the farmers given the millions involved in cotton agriculture who are exposed to pesticides, on a daily basis. It lead to focus on organic cotton - but regrettably not using silk - and considering all the packaging, dyes and printing inks. She has used certification, traceability and accountability, right the way through the supply chain but found taking complete control of this complex supply chain was the only way to enable this. She believed that the most effective to target were the CEO's, of clothing companies and fashion retailers. Mainstreaming sustainable fashion was happening because large retailers were realising that it was increasingly what consumers wanted: products that don't do damage to the environment, or that use child or sweated labour. Retailers ignored this at their peril. Sustainable clothing had to be sophisticated, glamorous and the bottom line was always economic. Sustainable clothing did not have to be more expensive. It could and should be affordable. She though that the ETI labour code should be compulsory and governments should act to have country of origin labeling for fibres.

4.6 Points made during the **Questions and Answers** included:

- education and design were key areas on which to focus
- fast fashion was seen as going to charity shops that were happy to have these. Government should act to support reuse and recycling including under WRAP.
- should not forget that the UK is a large wool producer although organic wool was seen as uneconomic.
- it was a major challenge to scale up positive impacts in organic production without compromising them.
- Sustainability in education needed to be mainstreamed in fashion and design rather than with separate sustainability courses.
- finding markets for recycle was central to making processes economically viable.

- organic cotton is strongly focused on for the toxicity benefits it gives over conventional cotton, but the water and landuse impacts are still significant and require clarity.
- the fashion industry is fickle - how could sustainability be kept on the agenda?
- will the roadmap produce practical action?
- Industry is being expected to accept reductions in business. How could we have growth without increased negative impacts.
- We have found ways to decouple production from resource use – energy efficiency and waste processing. Techniques are available in other sectors from which clothing could learn.

4.7 **Dorothy Maxwell** outlined the main sustainability impacts of clothing, the range of existing interventions and possible priorities and promising areas on which to concentrate in moving forward on the roadmap. There is a diverse range of international and UK evidence on the sustainability impacts of clothing including recent studies e.g. *Well Dressed, Fashioning Sustainability, Recycling of Low Grade Clothing Waste* and *EIPRO*. Defra had commissioned ERM to map this evidence with a view to determining the sustainability impacts across the lifecycle and supply chain of clothing. This mapping has been completed and following peer review is expected to be published before the end of 2007. A [Sustainable Clothing Briefing Note](#) which summarises the key results from this study plus analysis of stakeholder views to date was provided to all attendees prior to the meeting.

In terms of its economic impact, clothing is a high value sector globally worth over \$1 trillion, and ranked the second biggest global economic activity for intensity of trade. It contributes to 7% of world exports and employs approx. 26 million supporting a significant number of economies and individual incomes around the world. With only 10% of clothing manufactured in the UK, the UK textile and clothing industry is small in comparison to the global industry accounting for approximately 0.78% of UK GDP, 3.3 % of UK manufacturing (valued at £9.5 billion) and employing approximately 170,000.

The figure at Annex 3 summarises the key environmental and social impacts per lifecycle stage. Based on current evidence, the most significant environmental impacts include:

- Energy use and generation of GHG emissions from washing (water heating) and drying of clothing, in particular cotton which requires longer drying times vs. synthetics e.g. polyester; Interventions e.g. the Wash at 30° C and Energy Label for Washing machines are designed to reduce these impacts
- Energy use, resource depletion and generation of GHG emissions from processing fossil fuels into synthetic fibres;
- Significant water use, toxicity from fertilizer, pesticide and herbicide use, energy use and GHG emissions associated with fertilizer generation and irrigation systems from conventional cotton growing.

Organic and GM cotton reduce the toxicity related impacts; however other GM impacts are currently unclear.

- Water use, toxicity and hazardous waste and effluent associated with production stage pre-treatment chemicals, dyes and finishes.
- Approximately 1.5 - 2 million tonnes per annum of clothing waste is generated in the UK. Of this 63% (1.2 million tonnes) enters the household waste stream going to landfill, 16% (300,000 tonnes) is recovered and 21% unaccounted for in what is assumed the “national wardrobe”. Most of the recovered stream is exported for resale for reuse overseas (Africa being the main market)

Social and Ethical Impacts include:

- Poor working conditions, mainly in developing countries, are the main adverse social impact, including child labour (especially for cotton picking and hand sewing) and sweatshop conditions e.g. low wages, long hours, non respect of workers rights and health & safety risks.
- Limited market access, information and trade terms for farmers and workers. Loss of resources, economic and cultural assets from resettlement to enable access to resources e.g. fossil fuels, timber plantations or crop growth.
- Animal welfare is a key impact for sheep, cows and fur producing animals used in garments.
- In terms of poverty alleviation, the clothing and textile industry is seen as a catalyst for economic growth in developing countries; however it can fail to provide social mobility as training and skills development at this lower value end of the supply chain are not a priority.

Examples of current interventions are summarised in Annex 4. Approximately 65% of these focus on labour practices, 21% on environmental performance and 14% on fair trade.

Key trends include:

- UK consumption is high with 90% of UK consumed cloths being imported, hence many significant impacts occur outside the UK
- The clothing supply chain is complex, global and characterised by sub contractors in the developing world and the use of migrant workers which poses traceability challenges
- “Fast fashion” makes up 1/5 market, doubled 1999 - 2006 with localisation facilitating a quick turnaround in collections which can be as short as 2-3 weeks.
- Clothing purchasing in online & supermarket growing fast.
- Environmental impacts vary per fibre type.
- Volumes of Fibres produced, imported or exported for the UK show: 60% synthetic (plant/petrochemical) 29% non synthetic – Cotton 15% of that so tackling synthetics would focus on the large volume contribution

- It is necessary to look at the detail to understand which impacts are the priority. For example for cotton, the biggest energy impacts can be in the use phase from washing and drying, but for viscose, the biggest energy impact is from raw material extraction and processing.

Decreasing trend to charity shops was noted in the 2006 Defra commissioned Waste Textiles study³, but this was not agreed with by the Association of Charity Shops representative. They noted that members of their association run almost 7000 charity shops (around 90% of the total sector) with their 2007 figures indicating that over 250,000 tonnes per annum are dealt with these shops. They made the point that that textile banks and kerbside collections of textiles carried out by both charities without shops, local authorities and commercial organisations would handle additional volumes.

4.8 In the final session of the morning **panelists** commented on some of the major impacts, their perspectives on existing initiatives and the scope for further action. The panelists were:

- Mr. Alan Wragg, Category Technical Manager for Clothing, Tesco
- Dr. Graham Catton, Technical Manager - Persil, Unilever UK
- Mr. Dan Rees, Director, Ethical Trading Initiative
- Mr. Phil Patterson, Director, Reducing the Impact of Textiles on the Environment (RITE) Group
- Mr. Nick Morley, Director Sustainable Innovation, Oakdene Hollins Ltd
- Ms. Sam Maher, International Solidarity and Outreach, Labour Behind the Label;
- Mr. Jacob Madsen, Consultant, ERM

Points made included:

- A major retailer was dividing efforts up into product (organic cotton, recycled denim) / presentation (hangers, packaging) / process (sourcing, community efforts).
- Detergent industry committed to minimal chemical impact – supporting REACH legislation and standardised reporting and transparency across the industry.
- Energy for heating is one of the most significant impacts. Better detergents mean less water heating needed. But clothing industry should beware “designing down” to those that could only tolerate being washed at 30 degrees or less. Promote “30 unless its dirty” campaigns.
- The energy impacts for washing and drying are determined by the fibre type and consumer washing behaviour. There is a view that the energy impacts may be overstated in light of the increased volume of fast fashion which may be washed less because of it being considered disposable.

³ Defra, 2006, Waste Strategy project WRT152: Recycling of Low Grade Clothing Waste (draft), expected to be published by end 2007

- Labour rights are the biggest social challenge. Although agreed internationally and the “law of the land” that is not always the case in practice in producer countries. So important for companies to operate to high standards. Labour standards are voluntary instruments which is a factor in enforcement and compliance. Some companies are having positive impacts but many laggards. A key challenge is enforcement in practice along the complex, global clothing supply chain.
- ETI has 40 member companies. There is scope for increasing this. Auditing of compliance has been a key trend, but there is a strong rationale to move beyond this.
- Suggestions include establishing an agreed “living wage”, creating incentives for buyers and suppliers and integrating ethical labour and trade issues into core business practice. Companies should enshrine labour rights in contracts and HMG should do so in public procurement contracts. Government procurement of clothing as well as private sector e.g. uniforms are key action areas. Questions of compatibility with EU/WTO trade policy need to be clarified.
- Production times for clothing are too short and this creates a driver for poor labour conditions.
- For another major retailer organic cotton was only a niche product in their portfolio. It meant additional business rather than substituted business.
- Production & dye process has significant impacts. Less toxic dyes mean less effluent and associated energy impacts for effluent treatment plants.
- Important not to focus on carbon issues only because consideration of all environmental impacts gives a more comprehensive understanding of the problem.
- The RITE (Reducing the Impact of Textiles on the Environment) group formed recently to provide a network and holding a conference on 10 Oct. Aiming to establish metrics to allow for comparison of impacts etc.
- Impacts occurring outside the UK require a different approach
- Need to challenge fast fashion with the slow fashion concept. Do we have to accept volume-based business model rather than margin-based?
- Product traceability is a key challenge across the clothing supply chain. Schemes e.g. organic facilitate this as traceability is built in. Country of Origin labeling is recommended to further enable traceability. Gender dimension is central. 90% of workers are women. Informalisation of work – migrant labour, unprotected short-term contract labour. Production shifting at an increasing rate has national impacts especially in emerging markets heavily reliant on the clothing sector (e.g. Bangladesh, Cambodia, Sri Lanka and Nepal)
- 65% of initiatives are on labour rights.
- Include workers and their trade union representatives as stakeholders.

- Well established CSR practices in the clothing sector but is this having a significant impact? If not is this due to a time lag, greenwash or other factors?).
- Structure of industry – cost and risk passed down supply chain away from brand/retail.
- Education is key for both consumers and industry. The evidence base plays an important role here.
- What are the execution mechanisms for diffusing best practice? The roadmap, ETI benchmark.
- Integrated environmental and social codes of practice should be considered vs. the current separate initiatives which focus on one or the other in the main.

4.8 Opportunities for action/interventions proposed in panel presentations and discussion:

- Traceability a key challenge – to underpin other actions – awareness by suppliers, retailers and consumers where the clothes come from and how made
- Reducing tertiary packaging and air freight where used :
- Integration of ethical trade into core business practice. trend to focus on audit, but now getting to end of “low hanging fruit”.
- Right to organise/living wage are the next big challenges.
- Need incentives for companies to improve. Capital markets? Consumers?
- Labelling/information –
 - come up with a mark that signifies quality production and product traceability
 - Labeling – has to be based on traceability but should the principles be environmental or social or both?
 - What about counterfeiting of labels?
- Short turnaround = unreasonable working patterns.
- Procurement options – public procurement big lever for change and to improve/establish standards: uniforms - police, NHS?
- Land pressures need to be considered when looking at organic cotton. Mexico – price of corn quadrupled because of biofuel demand.
- GRI sector supplement – what experience in trying to push transparency along these lines?
- Should there be a boycott of Uzbek cotton given their system of enforced child labour? Europe is biggest market for their baled cotton. But bought on global commodity market so how implement a ban?
- How to engage the network of agents and middle men?
- Environmental impacts at agri/fabric stage, garment is social.
- Major retailers not just doing additional organics but trying to change core ranges over. Code of practice on dangerous chemicals. Buy 65% cotton on global commodities market so not in a position to implement voluntary bans on cotton from particular places.

- Supply chains v complex eg 40 components in a bra!
- Where does responsibility lie? Employment conditions and human rights primarily the responsibility of governments in producer countries.
- Ethical moves on part of companies are about protecting brand rather than enhancing brand – so they won't try to sell. And all the media is interested is the drama. Need to deal in "better" rather than best.

5. Summary of presentations

Afternoon Session chaired by **Alan Knight**.

5.1 **Jonathan Petty** described the history of Patagonia's development and approach in which environmental concern had been central from the start. It decided to move to organic cotton in 1993 and its use of cotton has been 100% organic since 1996. Since 1993 it has been looking to close the loop in the manufacture of its fleeces through PET recycle – using some 92 million bottles since then. It believed its success showed such approaches were not environmentally and socially correct but profitable.

5.2 **Rowland Hill** outlined aspects of the M&S approach including development of a "Green Factory" in Sri Lanka, and donation of seconds for resale in outlet whose profits go to the Birth Defects Foundation. Stakeholder processes were important and potentially valuable but there needed to be a clear delivery end with mechanisms to execute plans and intentions. Voluntary mechanisms could only go so far and impact of parts of the market. Consideration was needed on how to engage the majority in the mainstream. Advised the roadmap process not to turn into a talking shop for the sake of it, but to utilise stakeholders time in a focused action orientated way. Also advised Defra not to commit to areas it does not have a mandate in, but make it clear that other stakeholders need to take actions in their respective remit areas.

5.3 **Steve Russell and Garth Ward** looked at factors affecting reuse and recycling of clothes, including finding new markets for recycle. Design was a key factor in what becomes waste, for example if items cannot be disassembled and sorted easily into component parts/materials. Fast fashion "value" items in effect shared a market with charity shops leading to declining share of charity shop profits from clothing. Sustainable design including cost effective Design for Disassembly as well as increasing the wider options for closing the loop needed to become the norm. Remanufacturing end of life cloths through upcycling needed further consideration with respect to new fibres and mainstreaming technologies to enable this. For recycling through downcycling existing and new secondary used were needed for example for composite materials.

5.4 **John Bailey** considered experience in the tools to persuade consumers to respond to technological improvements in detergents allowing washing at

lower temperatures. This required sustained and carefully targeted promotional and other efforts.

6. Summary of discussion session

6.1 **Paul Hohnen** facilitated the final interactive discussion around stages in the life cycle of clothing, the nature of the gaps in action and the stakeholders who should lead or take the primary roles in action.

6.2 By way of general conclusions, from the following were identified in the discussion session:

- **Unsustainable.** The global clothing sector – as currently managed - had significant and in many cases increasing adverse sustainability impacts. These impacts were global and extended along complex supply chains. ‘Fast fashion’ trends were potentially exacerbating a mentality of disposability.
- **Life cycle Cradle to Cradle approach.** Different sustainability impacts occurred at each clothing lifecycle stage. There was potential at all stages of a garment’s life to reduce social and/or environmental impacts, while still offering the required services. There was a need to ensure that ‘whole of life’ approaches were used. A ‘cradle to cradle’ approach would be required to ensure that waste was reduced and ultimately eliminated.
- **Prioritising** With a view to prioritising the wide range of actions identified to improve the sustainability of clothing, Stakeholders were encouraged to consider the most embarrassing sustainability impacts of clothing. If clothing could talk about its impacts along the supply chain what would be the most embarrassing to stakeholders.
- **Sustainability niche** Some initiatives to improve clothing sustainability remained largely niche. There was a need to ‘mainstream’ these, and develop other ways of ‘find a route to market’ for more sustainable practices and technologies.
- **Transparency, Traceability and Education.** Designers, consumers, managers, indeed everyone needed more information and education on impacts, origins and options for reducing adverse impacts.
- **Consumer driven.** Consumers have shown capacity to respond quickly to new issues/trends. The challenge is to mainstream a small but significant and growing market, while recognizing that fashion trends will continue to change rapidly. Inclusion of additional consumer related stakeholders was advised to ensure consumers were sufficiently represented.
- **Roadmap Process** – A range of questions were raised about how the roadmap process would work going forward, Defra and other stakeholders roles. Dorothy Maxwell described Defra’s role as being the lead and catalyst providing a platform for stakeholders to take

actions on sustainable clothing improvements. Defra's role was to gather the evidence in order to bring the facts to the table, bring stakeholders together to agree actions and their implementation. The scope of the roadmap includes short (quick, visible wins) , medium and long term actions. Defra's own actions would relate to its remit for environmental protection as well as walking the talk through procurement and other areas. It would also lead, co-ordinate and monitor the roadmap process.

6.3 The following table summarises the discussion of issues by lifecycle stage and possible areas and actions for improvement:

Issues	Opportunities for Improvement
<p>Raw Materials</p> <ul style="list-style-type: none"> ▪ Design has consequences on entire life cycle. ▪ Design not limited to garments, but also fibres used (e.g. recycled, low impact fibres), and production processes (e.g. dyeing, energy efficiency) ▪ Sourcing influenced by world trade rules and markets where full environmental & social costs not internalized. ▪ Different technologies have different impacts. Research and education on sustainability impacts not optimized. 	<ul style="list-style-type: none"> ▪ More attention required to design phase, e.g. ensure 'cradle to cradle' approach. ▪ WTO rules and national policies (e.g. on subsidies to cotton production) required review and reform. ▪ Better understanding of trade-offs between competing technologies (e.g. for innovative fibres & production). Wider scope for employing more efficient new technologies, and more research.
<p>Production</p> <ul style="list-style-type: none"> ▪ Waste materials and pollution in production process ▪ Cost pressures impact working conditions ▪ Global sourcing and markets make traceability and transparency problematical. ▪ Consumer confusion about competing standards; few standards combine social and environmental aspects. ▪ Long supply chains add to pollution. ▪ Limited recognition of 	<ul style="list-style-type: none"> ▪ New technologies can reduce waste through better design (e.g. computer cutting, non chemical dyes). ▪ Importance of enforcing and encouraging use of ILO standards (e.g. child labour, gender issues for women) ▪ Scope for improved transparency (e.g. increased audits, indicators/reporting, standards/labeling). ▪ Tax and procurement policies can recognize good employers. ▪ Shorter supply chains beneficial for quicker response to market trends, and can reduce

<p>'good' manufacturers.</p> <ul style="list-style-type: none"> ▪ Packaging a source of waste. 	<p>transportation impacts.</p> <ul style="list-style-type: none"> ▪ Scope for reducing packaging, or using re-usable containers. ▪ Scope for increasing employee ideas for improved sustainability.
<p>Distribution</p> <ul style="list-style-type: none"> ▪ Market access rules affect sourcing decisions. 	<ul style="list-style-type: none"> ▪ Scope for reducing shipping distances through more local production ▪ Scope for increased government procurement of garments that meet higher sustainability standards.
<p>Marketing</p> <ul style="list-style-type: none"> ▪ Advertising plays an important role in creating/shaping consumer demand. ▪ Labeling creates some questions, e.g. about credibility, consistency, standard used, relevance to issue (labour, ecology, etc.) ▪ 	<ul style="list-style-type: none"> ▪ Scope for promoting greater consumer awareness and information. Sustainability 'footprint' needs to be made more transparent. ▪ Importance of ensuring ethical issues are given greater profile. ▪ Desirability of practical, clear, and meaningful standards/certification/labeling/trac eability systems that address all aspects of sustainable development. <i>Quaere</i>, however, how this would be done (e.g. labour vs ecology trade-offs). ▪ Scope for creating stronger market for better products, through government policy measures, including removal of subsidies, awards, etc.
<p>Use</p> <ul style="list-style-type: none"> ▪ Cleaning during lifetime has significant adverse impacts (use of water, energy, chemicals, etc.) ▪ Unnecessary practices (e.g. tumble drying) have become embedded in lifestyles. ▪ Design/consumer trends emphasis short product lifetime (80% discarded after 6 mths) ▪ Women play a key role as consumers and in product care. 	<ul style="list-style-type: none"> ▪ Industry led approaches have shown potential to reduce energy, chemical and water use. Geographical and cultural differences affect uptake. ▪ Further scope for industry cross-sector improvements (e.g. white goods/detergent manufacturers). ▪ Scope for raising consumer awareness (white goods, detergents), and practices (lower temp. washing). ▪ Scope for increasing leasing approach (e.g. for public sectors such as police, firefighters, etc.)

<ul style="list-style-type: none"> ▪ Rental/service approach limited. 	<ul style="list-style-type: none"> ▪ Potential for promotion of second hand clothes requires research. ▪ Education/awareness-raising on sustainability impacts required across the board. ▪ Government energy and water standards; pricing.
<p>End of Life</p> <ul style="list-style-type: none"> ▪ Currently, too little fibre is re-used (less than 3%). If the sector is to be sustainable 'waste = resource'. ▪ Some progressive industries (e.g. synthetic clothing) encountering feedstock problems. 	<ul style="list-style-type: none"> ▪ Range of options available for ensuring 'end of life' = 'beginning of next life'. These include: producer responsibility schemes; industry/brand recycling/re-use targets; technologies that optimize re-use, biodegradability, quality control, etc. ▪ Forum/framework desirable for better matching supply (of waste) and demand (for waste as a feedstock for new products). ▪ Charities and other re-users need more governmental support. ▪ Legal & fiscal instruments discouraging landfill.

7. Key conclusions and next steps

On analysis of the event and subsequent feedback from stakeholders key conclusions are

- There is general agreement on the environmental and social impacts across the life cycle of clothing.
- There is an understanding that there are already a significant number of interventions in place and that it is important not to recreate the wheel but to build on these moving forward as well as looking to new interventions where needed.
- A wide range of actions to be taken have been suggested by stakeholders and there is enthusiasm from them to work further in the roadmap process on these. Prioritisation of actions is a key requirement going forward.
- Stakeholders requested clarity on how the roadmap process will work in practice. This is outlined in 7.2.

7.1 Action Areas

From an analysis of the existing evidence, stakeholder discussion on 05 Sept. and subsequent feedback, proposed action areas for the roadmap are summarised as follows.

1. Improving Environmental Performance across the Supply Chain	
Sustainable Design	<p>Define metrics & guides for industry to incorporate sustainable clothing design techniques into the clothing/fashion sector.</p> <p>Profile best practice in sustainable clothing design to include raw materials production (green factory examples), packaging, retail and end of life.</p> <p>Feasibility of shifting from “fast fashion” to “slow fashion”</p>
Fibres & Fabrics	<p>Clarify the sustainability benefits and limits of organic cotton and the role for other fibre types considering issues e.g. all impacts not just toxicity related, land use requirements and world competition for land use (e.g. crops for food, biofuels, cloths and other applications)</p> <p>Determine the sustainability impacts and business case for alternative fibres e.g. hemp, bamboo, nettle, Tencel® (Lyocell wood based) or Ingeo® (corn based)</p> <p>Fill remaining evidence gaps for fibres and fabrics</p> <p>Sustainability pros and cons of SMART fibres, nanotechnology and coatings</p>
Maximising Reuse, Recycling and end of life management	<p>Clarify the waste textile statistics at end of life for reuse and recycling (charity shops, other secondary markets and exports) in light of current discrepancies raised by stakeholders</p> <p>Feasibility assessments for</p> <ul style="list-style-type: none"> • end of life clothing collection for UK consumer and public sector markets • UK clothing producer responsibility scheme • increasing reuse outlets in UK and overseas • upcycling opportunities - fibres types, role of blends/composites, solving consistency & contamination problems, design for disassembly and technologies, markets • downcycling opportunities – existing secondary markets, creating new markets for recycled grades (linkage with WRAP), technology and capacity

	<p>issues</p> <p>Investigate the sustainability implications of the UK current practice of exporting used cloths to developing country markets e.g. Africa</p> <p>Development of a Quality Protocol for waste textiles to facilitate reuse and recycling (similar to the one WRAP has done with waste for aggregates)</p> <p>Infrastructure necessary for enabling the environmental benefits of biodegradable and compostable clothing.</p>
Cloths Cleaning	<p>Sustainability assessment and business case for cleaning technologies to reduce the energy and chemicals intensity of cloths maintenance e.g. waterless cleaning. fibre coatings, detergent technologies, washer/dryer technologies</p> <p>Wash at 30°C review to assess & maximise consumer behaviour role</p> <p>Increase the market presence of non solvent dry cleaning technologies</p>
Instruments for improving traceability along the supply chain	<p>Organic certification for wool, silk and other natural fibres</p> <p>Role for Country of Origin Labelling in light of existing schemes</p> <p>Using technology e.g. scanners to enable country or origin & other traceability characteristics e.g. blend composition, counterfeiting etc.</p> <p>Improvements to industry standards, auditing and verification</p> <p>Determining ways to overcome the barriers of the complex, global clothing SC structure to enable greater control and traceability e.g. role of vendors, agents, brokers and sub-contractors. (Learnings from other sectors with global, complex supply chains e.g. waste and electronics)</p> <p>Clothing sector CSR & EMS improvements</p>

2. Consumption Trends and Behaviour	
	Determine evidence on consumption behaviour for clothing; laundering behaviours; role of clothing icons / celebrity and how to leverage these for sustainability and sustainable consumption
3. Awareness, Media, Education and Networks	
	<p>Programmes with the media – mainstream and fashion - for consumer awareness raising on sustainability</p> <p>Education – incorporate sustainability as a mainstream topic in fashion education</p> <p>Profile existing sustainable fashion education leaders</p> <p>Maximise the use of existing networks and industry access to sustainable clothing information (UK & global)</p> <p>Consider the role for a Community of Practice for Sustainable Fashion</p>
4. Creating Market Drivers for Sustainable Clothing	
	<p>Create incentives for buyers and suppliers to source sustainably</p> <p>Incorporate sustainability into procurement in the public and private sectors</p> <p>Government procurement trial for uniforms e.g. police, NHS incorporating environment & social/ethical criteria (to include cloths leasing & recovery)</p> <p>Consideration of government league tables approach for sustainable clothing</p>
5. Ethics and Trade	
	<p>ETI considerations</p> <ul style="list-style-type: none"> • increase membership • consider involving missing stakeholders e.g. trade unions & workers • role of international law • improving enforcement <p>Tackle living wage & gender issues</p> <p>Consider integrated environmental & ethical industry standards</p> <p>Incorporation of animal welfare in industry standards as distinct from only having them in voluntary company</p>

	<p>policies at present</p> <p>Increase uptake of Fair Trade</p> <p>Overcoming industry structure & supply chain barriers</p> <ul style="list-style-type: none"> • migrant workers & short term contracts, trend of factory to factory & country to country moving. • Linkages with WTO and MFA Forum • Procurement criteria and contracts along supply chain • Consider options for reducing critical path time pressure – is production time too short and a key causal factor?
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7.2 Roadmap Process

Stakeholders asked for further information about the roadmap process. Here is an outline of the process and delivery structure:

The Clothing Roadmap process

- This is a collaborative process, seeking the active involvement stakeholders, with a strong action focus.
- The process involves gathering the evidence on sustainability and clothing, engaging stakeholders, agreeing and implementing actions.
- To ensure effective, inclusive stakeholder engagement and ownership, a series of events and meetings are being used to present the evidence, determine stakeholders views and suggested action areas. The 05 Sept event was the first of these.
- Based on the existing evidence and the input of stakeholders views, priority areas for action will be drawn up following these events
- A variety of instruments could be used to implement the agreed actions. Key considerations will be the ability of instruments to influence the sustainability of clothing within and outside the UK in light of the global nature of the clothing supply chain as well as competition concerns.

Role of Defra and other stakeholders

- Defra's role is to gather the initial evidence on sustainability impacts of clothing in order to bring the facts to the table and provide a platform for stakeholder engagement and actions to be agreed.
- Defra will take actions within its remit of environmental protection.
- Defra is looking to other stakeholders to participate and take ownership of actions in their respective areas.

Stakeholder Participation

- Stakeholders are welcome to participate by giving their views and have a watching brief.

- For those stakeholders who are prepared to be part of the action, a working group (or groups) with defined Terms of Reference may be used for developing the actions and moving them forward.

7.3 Next Steps

The next steps are a follow-up meeting(s) where stakeholders can form around the five categories of action summarized at 7.1, according to their main interests, in order to utilise their time most effectively. The aim of this will be:

- To prioritise and agree actions which most engage the interest of stakeholders;
- For Defra to use this to prepare a draft framework for the actions to be taken forward, to circulate to stakeholders for comment.

8 Further information and contact details

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Annex 1

Participants List: Defra Sustainable Clothing Roadmap First Stakeholder Meeting, 5 September 2007, Chatham House, London

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Annex 2

Programme: Defra Sustainable Clothing Roadmap Stakeholder Meeting

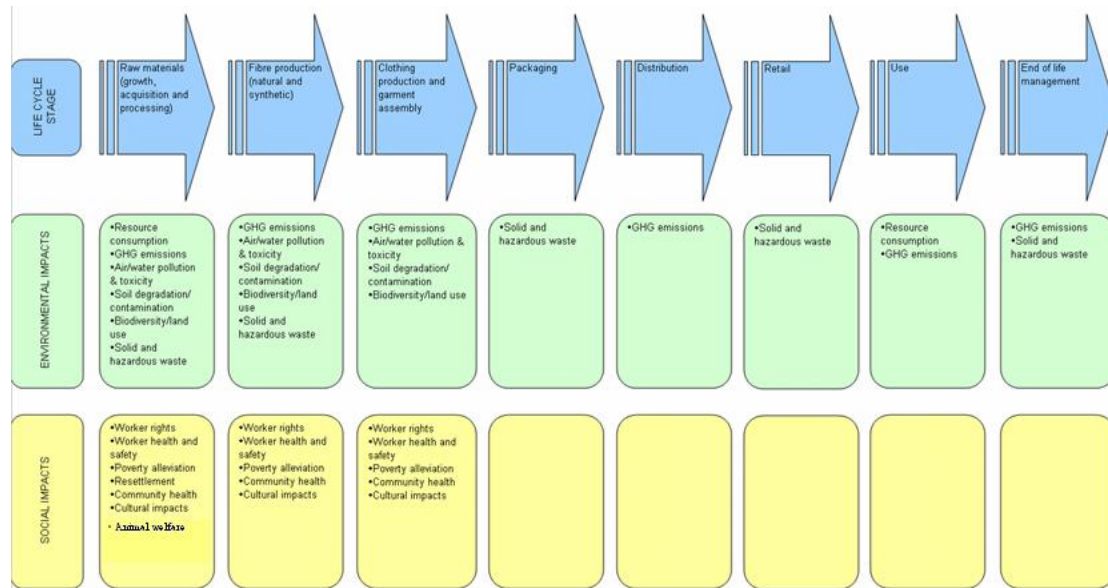
Date: 05 September 2007, 09.00 – 17.00

Venue: Chatham House, London, 10 St James's Square, London

Morning session: 9.00 – 12.30	
9.00 – 9.30 Registration and coffee	
9.30 – 12.30 Chair: Mr. Michael Massey Associate Fellow, Energy, Environment and Development Programme, Chatham House	
9.30 Welcome & Introduction	Minister Joan Ruddock, Minister for Climate Change, Biodiversity & Waste
9.40 The Business Case for Improving the Sustainability Impacts of Clothing	Ms. Julie King, Head of Fashion, de Montfort University
9.50 Defra products roadmap approach & the clothing roadmap	Mr. Bob Ryder, Head Products Unit, Defra
10.00 Fashion Walking the Talk	Ms. Katharine Hamnett video presentation
10.10 – 10.30 Q&A	
10.30 – 11.00 Coffee/Tea	
11.00 Sustainability Impacts of Clothing & Current Interventions	Dr. Dorothy Maxwell, Lead Defra Sustainable Clothing Roadmap
11.30 Panel Response & Discussion session	Panel: <ul style="list-style-type: none"> • Mr. Alan Wragg, Category Technical Manager for Clothing, Tesco • Dr. Graham Catton, Technical Manager - Persil, Unilever UK • Mr. Dan Rees, Director, Ethical Trading Initiative • Mr. Phil Patterson, Director, Reducing the Impact of Textiles on the Environment (RITE) Group • Mr. Nick Morley, Director Sustainable Innovation, Oakdene Hollins Ltd • Ms. Sam Maher, International Solidarity and Outreach, Labour Behind the Label; • Mr. Jacob Madsen, Consultant,

	<p>ERM</p> <ul style="list-style-type: none"> • Dr. Dorothy Maxwell, Defra (respondent only)
12.30 – 13.30 Lunch	
Afternoon session 13.30 – 17.00 Chair: Mr. Alan Knight, SDC Commissioner	
<p>13.30 – 14.00 Examples of sustainability activities in the high volume clothing industry supply chain</p> <ul style="list-style-type: none"> ○ <i>Marks & Spencer sustainable clothing initiatives</i> ○ <i>Patagonia: using business to inspire solutions to the environmental crisis</i> 	<p>Mr. Rowland Hill, Head CSR, Marks & Spencer</p> <p>Mr. Jonathan Petty, UK Sales Manager, Patagonia</p>
<p>14.00 – 14.30 Clothing manufacture technologies which can influence environmental performance</p> <ul style="list-style-type: none"> ○ <i>Fibre technologies improving environmental performance</i> ○ <i>Wash at 30° C</i> 	<p>Prof. Steve Russell, Director, Leeds University Centre for Technical Textiles & Mr. Garth Ward, Business Development Manager, Salvation Army Trading</p> <p>Dr. John Bailey, Proctor & Gamble</p>
14.30 – 15.00 Q&A	
15.00 – 15.30 Tea/coffee	
<p>Discussion Session and conclusions 15.30 – 17.00</p> <p>Clothing roadmap and stakeholder engagement moving forward</p> <ul style="list-style-type: none"> ○ Proposed engagement process ○ Proposals for the formation of future stakeholder groups on likely intervention areas <ul style="list-style-type: none"> • Industry & Supply Chain • Technology • Consumer Behaviour/ Fashion industry • Procurement 	<p>Facilitator: Mr. Paul Hohnen, Chatham House</p> <p>Respondents:</p> <p>Mr. Michael Massey Dr. Dorothy Maxwell</p>
17.00 Close	

**Environmental and Social impacts across the life cycle of clothing
(Source: modified from Defra, 2007⁴)**



⁴ Defra, 2007, Mapping of Evidence on Sustainable Development Impacts that occur in the Life Cycles of Clothing (draft)

Current interventions for improving sustainable performance

As per figure 2 above, current interventions can be categorised as focusing on environmental, trade or labour conditions⁵. Current examples include the following

For environment plus:

- EU Environmental Policy and law designed to reduce toxicity and pollution impacts of chemicals (e.g. for dyes and detergents to include regulations on detergents, solvents and forthcoming Registration, Evaluation and Authorisation of Chemicals (REACH)), pollution management (e.g. textile activities covered under EU Integrated Pollution Prevention & Control legislation) or the Waste Strategy for England 2007 highlighting waste textiles as a priority area.
- Labels e.g. Organic, Bluesign, Oeko-Tex Confidence in Textiles, EU ecolabels for textiles and footwear, Energy Rating on white goods e.g. washers and dryers and a growing interest in Country of Origin labeling on cotton.
- Industry standards e.g. for fabric dyes or the US ANSI standard on environmental sustainability of textiles in development
- Wash at 30° C to reduce the energy use and climate change impacts of laundering.
- EU detergent voluntary industry agreement Washright campaign on minimising detergent packaging and encouraging consumers to use the correct detergent.
- Sustainable design incorporating a range of environmental and social criteria to differing extents is in increasing evidence in the niche (e.g. Edun, Howies, Adili, Enamore and People Tree) and mass markets (Katherine E Hamnett for Tesco, Patagonia, American Apparel and Nike).
- Industry management initiatives e.g. EMS on environment, CSR for environmental and social issues and reporting e.g. using GRI which is completing an apparel and footwear sector reporting guide.
- The EU High Level Group on Textiles and Clothing focusing on the European textiles and clothing sector competitiveness conditions incorporates proposals for CSR and REACH implementation for this sector⁶.
- Sustainable clothing guides, networks and information sources include
 - EU BREF Textile Processing
 - www.textileinstitutebooks.com
 - www.Envirowise.co.uk
 - [UNEP Eco-Textiles online guide](#)
 - World Bank Pollution Abatement Handbook – Textiles, 1998
 - Worldwide Responsible Apparel Production www.wrapapparel.org

⁵ Defra, 2007, Mapping of Evidence on Sustainable Development Impacts that occur in the Life Cycles of Clothing (draft)

⁶ EU Textiles industry in 2020 An attempt for a vision - http://ec.europa.eu/enterprise/textile/high_level_group.htm

- Fair Labour Association, USA www.fairlabour.org
- SMART Textiles Network
- Sedex Ethical Suppliers database
- Reducing the Environmental Impact of Textiles (RITE), UK
- Ecotextile News, UK

For fair trade:

- Quotas and subsidies e.g. Multifibre Agreement (MFA) which ended in 2005 and the new MFA Forum multi-stakeholder Collaborative Framework for Guiding Post-MFA Actions currently focusing on Bangladesh and Lesotho.
- Standards e.g. Fair trade Foundation standards for fair trade cotton or the International Fair Trade Association (IFAT) standards and certification schemes. Fairly traded cotton, while in evidence in over 120 retail stores in the UK and in increasing demand, is still < 1 % of total cotton production.⁷

For labour conditions:

- The Ethical Trading Initiative (ETI) voluntary initiative to improve the lives of workers in global supply chains for food, clothing and other markets.
- Standards e.g. SA8000 which have approximately 980 certifications worldwide
- International Clean Cloths Campaign urging textile brands and distributors to improve manufacturing working conditions in the sector. The UK version is Labour Behind the Label
- Fashioning an Ethical Industry (FEI) is also supported by Labour Behind the Label and aims to educate fashion college students and tutors.

For animal welfare:

- RSPCA initiatives e.g. RSPCA awards
- PETA campaign.

⁷ Organic Exchange, 2006, Organic Cotton Fibre Report, April 2006