SUSTAINABLE LIFESTYLES REPORT

INDIA

wbcsd sustainable lifestyles

A vision beyond product improvements

WBCSD's Sustainable Lifestyles cluster has a clear vision: that the innovative power of business can enable and inspire more sustainable lifestyles. We believe this is essential if 9 billion people are to live well and within planetary boundaries, particularly with an extra 3 billion people due to enter the middle classes by 2030.

To enable more sustainable lifestyles it will be necessary for business to go beyond product improvements. Lifestyle challenges need to be explored from a broader and systemic perspective. One that considers products but also infrastructure, technology, business models, policies and behaviour change.

The good news is this represents a tremendous opportunity for forward-looking business: acknowledging the limits of product improvements frees businesses to explore more transformative ways of addressing key challenges. It points companies towards understanding how people are living, identifying where the highest impacts occur, and investing in developing solutions that improve the system in which products are used – enabling more sustainable lifestyles and inspiring people to live them.

In this report: A focus on India

This report presents the findings of the WBCSD and CII Sustainable Lifestyles workshop held in Bangalore the 22-23 July 2015. This workshop was the second in a series of four workshops held in 2015, in Brazil, India, China and the USA. It was kindly hosted by 3M at their Bangalore Innovation Centre.

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CII
Confederation of Indian Industry

The report summarises the research and workshop discussions on where the highest consumption impacts are occurring in key lifestyle areas so we can begin to uncover the ways in which business can fundamentally reduce those impacts. The report serves as input towards a broader discussion between WBCSD companies on how business can inspire sustainable lifestyles, by providing a focus on the issues and opportunities present in India:

- **Section I** summarises consumption and lifestyle hotspot research carried out by CSCP [1] for WBCSD – with a deliberate focus on Indian middle and upper-middle class lifestyles.
- **Section II** highlights current business, product and service solutions that companies that attended are already working on to enable and inspire sustainable lifestyles.
- **Section III** reviews some of the challenges faced when promoting sustainable lifestyles in India, and suggests potential business solutions to overcome them. These solutions are drawn from the discussions that took place during the workshop between the 22 companies that attended.[2] We consider potential solutions in relation to products, behaviour, infrastructure, technology and policy. Plus the potential for collaboration between companies and with relevant stakeholders.
- **The conclusion** suggests three cross-cutting big ideas for further development, building on the workshop discussions.

Disclaimer: The contents of this report are meant to provide a synthesis of the discussions that took place during the workshop, rather than workshop minutes. All information has been subject to the interpretation of the authors and does not necessarily reflect the views of the WBCSD, the views of all WBCSD member companies, or those companies that attended the workshops.

[1] Collaborating Centre on Sustainable Consumption and Production http://www.scp-centre.org/

[2] Participating companies are listed in Appendix 1.

Executive Summary

The state of lifestyles and sustainability in India

India is a vast country, stretching from the peaks of the Himalayas to a 7,000km coastline, with a culture built up over 5 millennia. Today, it is a country experiencing rapid and significant change. India occupies 2.4% of the world's land area but supports nearly a fifth of the world's population – 21.9% of which, as of 2012, was living below USD1.25 per day. India's poor live very simply – some basic solutions and services, such as public transport, are unaffordable and out of their reach. One result of this is the impact of an average Indian lifestyle is low - almost in line with a sustainable national level of consumption. The government has even pointed to the sustainability of the Indian lifestyle in its Intended Nationally Determined Contribution (INDC) for COP21, while simultaneously defending its "right to grow" beyond traditional, sustainable, lifestyles.

There is no doubt that India faces critical environmental and social development challenges. For example, the monsoon has failed this year – a climatic event on which approximately 600 million people depend. India's water needs are already under stress – the country comprises 17.5% of the world's population, yet only 4% of its water resources. Other challenges, such as air quality, sanitation, education and poverty alleviation are equally urgent.

Despite these challenges, economic development in India remains both determined and impressive. Incomes are rising and poverty is falling. The lifestyles of middle class Indians (and the impacts stemming from those lifestyles) are similar to middle class lifestyles in other developed countries. Not only is this the lifestyle that Indians are aspiring to, it's the lifestyle that development is pulling people into. The accepted policy position is that India must be allowed to grow and therefore others will need to give up some consumption in order to allow for this. Our research shows that we must reduce the consumption footprints of the middle classes everywhere, including India. Nonetheless, initial increases are required, such as widespread improvement of infrastructure to enable more efficient use of waste, water and energy.

This workshop aimed to explore business solutions and routes towards less impactful growth that can still finance pverty reduction, lifestyle improvement and infrastructure development. We want to find pathways that enable increased consumption in India without the negative social and environmental impacts.

In some areas India is ahead of the curve in terms of experimenting with innovation and technological solutions to sustainability challenges – for example it is a leader in green buildings certification for the corporate sector. However, implementation at scale of such thought leadership remains illusive to the average middle-income urban consumer. Cultural shifts are underway, particularly visible amongst the current middle class generations who speak of tensions between traditions which could be considered a sharing economy centred around frugalness (hand me downs and re-purposing) and modern aspirations for convenience and ownership which are equated with success.

Our research suggests that these aspirations, mixed with traditional Indian lifestyles, could be used to create social bonds that support a new modern sharing economy. Fuelled by technology and convenience, this could be a key opportunity for business to drive more sustainable lifestyles in India.

Current indian lifestyle consumption trends

THE HOME

Millions of Indians do not have access to formal housing – 35% of urban households cannot afford housing at market rates. With millions also lacking access to clean water and sanitation, water-borne diseases account for approximately one fifth of all communicable diseases in India. Where formal water infrastructure exists, the distribution loss rate is between 35-40%. In smaller cities, less than half of waste is collected.

In rural areas especially, fuels such as firewood and kerosene are often more commonly used for heating and lighting than electricity. Where electricity is available, it's mostly generated from coal, and that proportion is likely to grow. Because of this, energy transmission loss is high at over 20%.

In middle-income households, appliance ownership for labour and comfort purposes continues to rise – this includes fridges, air conditioning, and washing machines. Over the next 20 years, 250 million people (38 million households) are expected to move into Indian cities.

FOOD & NUTRITION

Obesity and heart-disease (the 'lifestyle diseases') are increasing amongst higher-income segments of Indian society, while malnutrition and lack of access to clean drinking water prevail amongst low-income segments. Large portions of the population remain vegetarian but as incomes rise, more people are eating more imported foods and more meat (particularly poultry and fish) and dairy; poultry is one of the fasted growing segments of the agricultural sector. Consumption of processed foods is also on the rise and food safety is likely to continue to be a concern.

Given the importance of India's agricultural sector (it accounts for 47% of the workforce), it's important to continue supporting the affluence-related rise of local and organic food (for example, by encouraging the sustainable production of 'high-value' foods such as potatoes, mangos and bananas).

MOBILITY

India is expected to be the third largest market for the automotive sector by 2016. Today, two-wheelers account for 77% of all vehicles in India, but there is widespread desire for car ownership. There has been significant growth in the ownership of vehicles, driven by urbanization and by the growing middle class.

Car renting and sharing systems are also showing signs of growth, with Indian companies starting their own businesses in the footsteps of successful models elsewhere in the world. Such solutions are desperately needed: emissions from Indian vehicles are 4-8 times higher than they could be as a result of inefficient fuel combustion in congestion. What's more, mobility infrastructure is already under considerable strain: transport infrastructure needs to grow at 20 times the capacity added in the last decade to cope with expected urbanization and population growth. This must be achieved without compromising on the rights of lower-income groups to basic infrastructure, such as sidewalks. A shocking fact: with only 1% of the world's cars, India accounts for 18% of world road deaths.

GOODS

Gold is deeply rooted in Indian culture and Indians buy the most gold (for jewellery) per capita in the world. For average households, the cost of this is slightly less than spending on education and health. The environmental impact of gold mining is very high, which makes this cultural activity a consumption hotspot for India.

Textiles are in the top three items for household expenditure. Amongst middle class consumers, the purchase of branded luxury goods is increasing, alongside a move away from tailored items. In 1999, there was one mall in India; today there are at least 500. There is a widespread increase in the use of consumer electronics, particularly mobile phones (primarily smart phones), whereas air conditioners and refrigerators remain an urban luxury for now.

Future sustainable lifestyle scenario: an aspirational target

Using a peer-reviewed methodology for calculating a sustainable level of resource use per capita (a sustainable 'lifestyle material footprint'), and working with our research partners at the CSCP, we have defined what a sustainable lifestyle will need to look like in the future. The aim of this scenario is to provide a future target to aspire to and measure progress against.

This future sustainable lifestyle scenario provides a target sustainable lifestyle material footprint of 8,000kg of material resource use per person per annum. The current lifestyle material footprint of the average Indian is 8,408 kg per person per annum. This degree of difference seems small and manageable. However, the average lifestyle footprint is strongly influenced by the footprints of rural and lower income segments of the population. Furthermore, current consumption growth trends in India are projected to grow in such a way that an average lifestyle material footprint is expected to be 14,324kg by 2030. A selection of real-world example lifestyle material footprints, calculated for this workshop, showed middle class footprints already reaching between 20,000-40,000kg/p/a (and sometimes well in excess of 40,000kg/p/a).

The good news – solutions exist today

Companies that participated in this workshop identified several existing business and product solutions, which could already be positioned to address many of the current consumption hotspots. For example: improving food taste to overcome perceptions of taste barriers to healthy fast food; technologies for vehicle monitoring in real time and improved road infrastructure; the development of innovative green building technologies and the increased use of renewable energy sources; recycling systems to manage e-waste, and more. Participating companies cited numerous opportunities to scale existing solutions by connecting solutions along the value chain, as well as bringing in policy makers and community groups.

Three big ideas for collaborative business solutions

Interconnected multi-modal transport: revolutionizing mobility through collaborations and commuting schemes

Indians are embracing ride sharing services. As more and more of the middle class move into housing developments there is an opportunity to develop a more collaborative approach to commuting. Communities and companies could enhance the availability and convenience of services such as car sharing, shuttle services and park-and-ride options – particularly for the daily commute.

Beyond sharing and route enhancement, ICT could be used to link transport to different sustainable lifestyle propositions. For example, companies close to each other could offer shared access to healthy and convenient food, bicycle (and other) repair shops and recycling centres.

Public transport is not widely used by the middle class - it's not safe, clean or convenient enough. Companies could work with public transport providers (especially rail) to make India's extensive transport networks more attractive to business and middle class travellers and commuters.

Greening the home: transferring knowledge from the commercial to residential sector

India has the fourth largest amount of LEED certified green building space in the world. There is a great deal of expertise in efficient and sustainable building design, but it is currently held within the commercial sector. Companies can help overcome this in two ways. First, they can share existing solutions with developers of residential buildings. And second, they can convincingly prove the business case for more sustainable building technologies amongst relevant stakeholders. Residential developments are being built on a scale similar to commercial properties – the solutions, from greener cement, to energy efficiency, to water collection, are available and transferable.

Modernizing the culture of sharing: promoting collaborative consumption

India has both a culture of hoarding (in case something might come of use) and thriftiness (re-use and hand-me-downs). These traditions make it a country where new sharing economy business models could quickly take hold and become commercially viable. Collaborative consumption is increasingly seen as a route to reducing material footprints, ensuring that goods are put to good use and shifting the trend from ownership and towards convenience. By sharing goods, services and spaces, consumers around the world are finding new ways to use and reuse material possessions, but also engage in deeper social relations. India's entrepreneurial spirit and flourishing technology sector is perfectly placed to scale sharing opportunities in areas such as mobility, clothing and household goods.

I: Indian Lifestyle Consumption Footprint & Hotspots

This section summarizes the research carried out by CSCP [3] into current consumption-related hotspots in India. These hotspots help identify the current baseline of lifestyle-related consumption, and where resources may be at risk due to lifestyle habits and trends. They also offer an indication of where to prioritize solutions, and provide a benchmark that can be used to measure how effectively business solutions are addressing the challenges in the future.

What is a consumption hotspot?

A consumption hotspot is a lifestyle or consumption trend that's on the rise, and that poses the biggest risk to the environment and social wellbeing. As such, hotspots reflect consumption trends with the largest degree of change (and highest negative impacts), and therefore indicate where intervention could result in a significant impact reduction. Lifestyle hotspots are calculated based on:

- country-level environmental footprints (analyses of facts and trends about rapidly depleting and scarce resources in a country)
- average household consumption expenditure (what people are spending more money on, and what goods and resources they are consuming the most)
- growth trends (any evidence of social/societal innovation that has the potential to shift social norms if applied at scale – in a negative or positive way).

Indian consumption hotspots

The research investigated current Indian consumption hotspots in four areas where impacts tend to be highest: food and nutrition, mobility, the home (including building materials, energy and water inputs and waste) and household goods (cleaning products, personal care, appliances and clothes).

As you can see from [Diagram 1] below, CSCP's research also investigated a 'Future Sustainable Lifestyle Scenario' to provide a goal that solutions should work towards.

To determine this future target, the research quantified the average lifestyle material footprint based on national consumption averages (see diagram 3 and its accompanying explanation below for more information on how lifestyle material footprints are calculated). It then quantified what a sustainable lifestyle material footprint would need to look like in the future, based on global resource availability, planetary boundaries [4] and divided per capita assuming a 2050 global population of 9 billion.[5]

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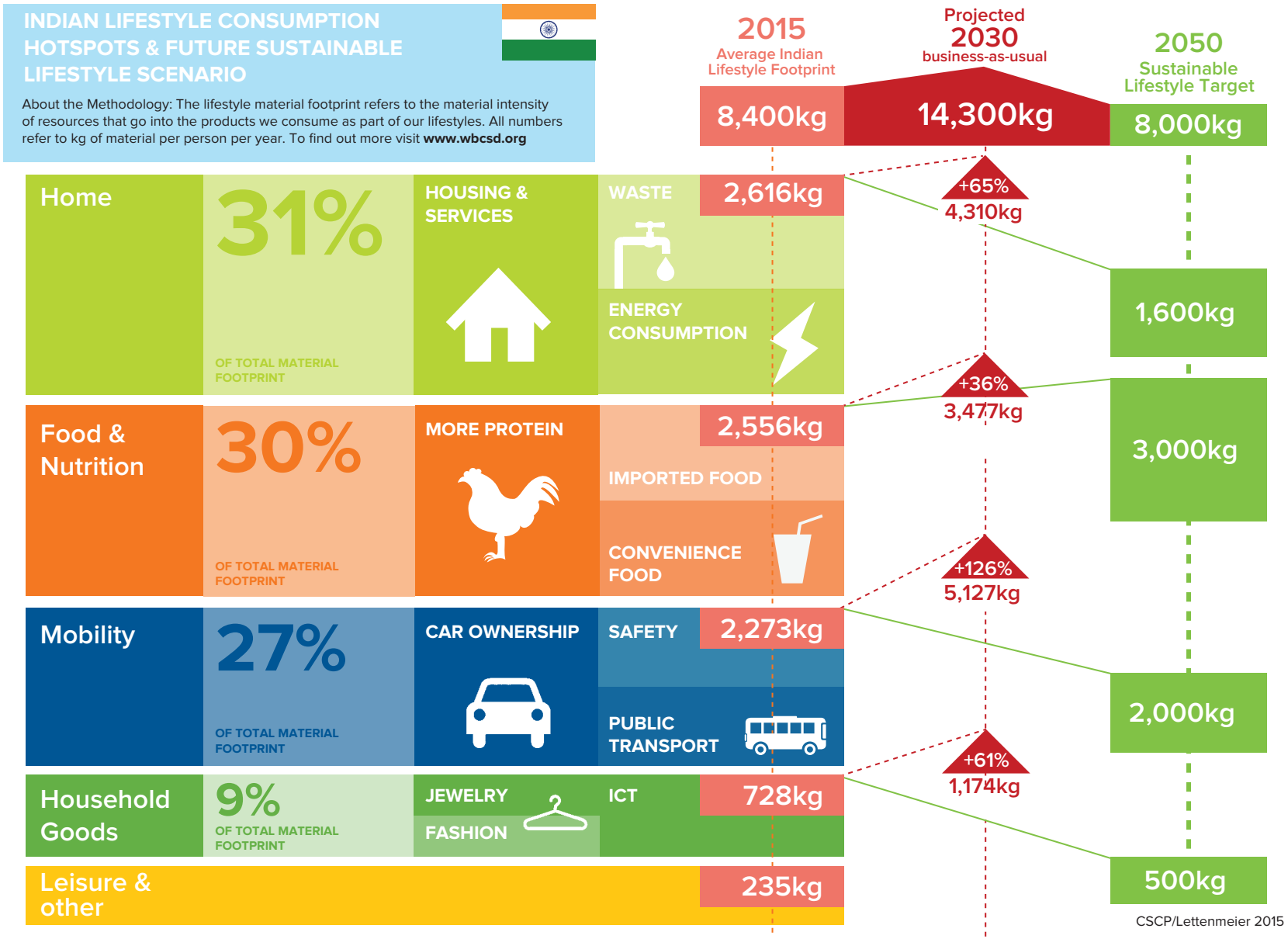
[3] The Collaborating Centre on Sustainable Consumption and Production (CSCP), http://www.scp-centre.org/, has been the WBCSD Sustainable Lifestyles research partner for the 2015 work in Brazil, India and China.

[4] The 2015 updated Planetary Boundaries research can be accessed from the Stockholm Resilience Centre's website: http://www.stockholmresilience.org/21/research/research-news/1-15-2015-planetary-boundaries-2.0---new-and-improved.html

[5] For humanity to live within planetary boundaries global resource consumption should be halved by 2050 and an equal per capita use of resources should be achieved - SCHMIDT-BLEEK, F. (2009). The Earth: Natural Resources and Human Intervention, 1st ed. Haus Publishing: London, UK.

Diagram 1: Indian Lifestyle Consumption Hotspots & Future Sustainable Lifestyle Scenario
iii. A sustainable lifestyle target for India



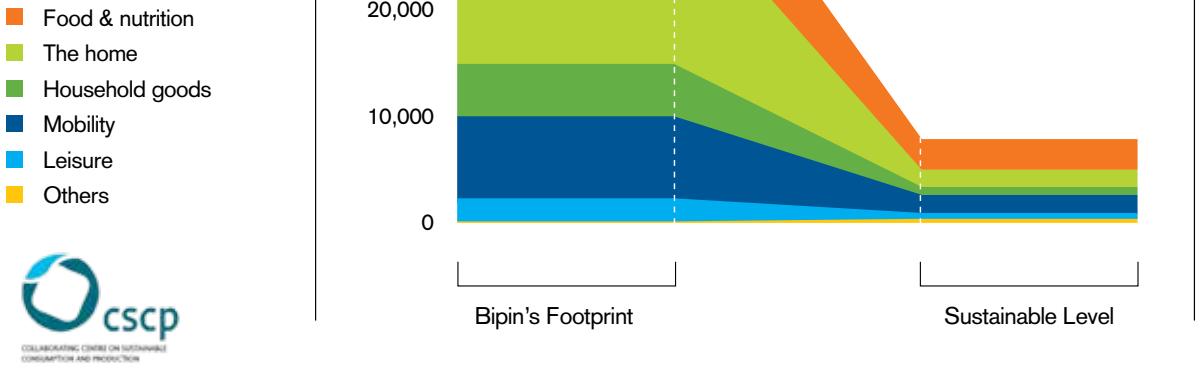
A starting point

These hotspots, footprints and sustainable lifestyle targets are a springboard for deeper understanding – providing business with the information it needs to identify opportunity spaces where it can enable and inspire Indians towards continuous improvement of well-being, while minimizing negative environmental impacts and social challenges. This research was provided in advance to all participants of the workshop in India, as a starting point for discussions.

Diagram 2: example of the current lifestyle material footprint of a middle-income Indian person

Bipin

Entrepreneur
New Delhi, India



Bipin's Footprint, 40,100 kg/a, is nearly 5 times the size of the average Indian Footprint.

He eats meat 4 times per week and aspires to increase his consumption of organic food in the future.

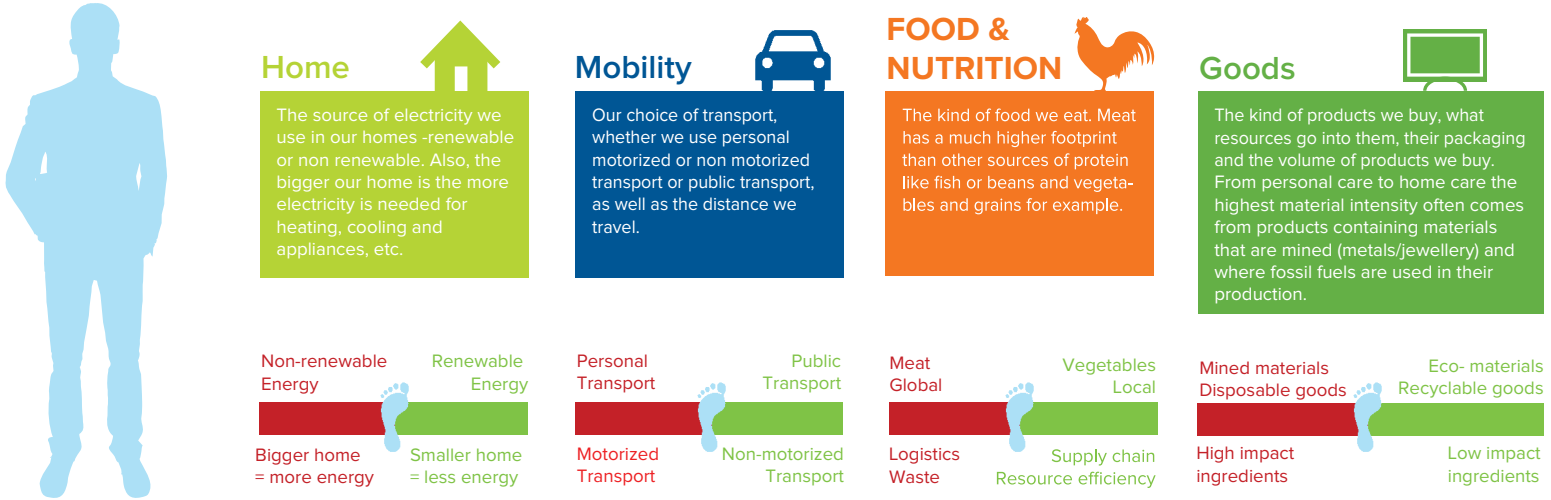
He lives alone in a 93m² flat and consumes 1,800 kWh of electricity per year — 12 times higher than the Indian average.

He owns a mobile phone, a laptop, a stereo and a TV.

Bipin enjoys travelling to the mountains, usually by bus or train. On a daily basis, he communtes by car and metro.

Bipin does a lot of sports, at least 5 hours per week.

My Lifestyle Footprint is affected by...



Lifestyle footprint calculations convert all elements of a lifestyle into a material (kg) level of consumption of all goods and services in terms of natural resources and the material intensity required in production. The calculation includes consumption-based indicators of resource use; lifecycle-wide material resource use of all products and services used by households; sum of abiotic and biotic resource consumption plus agricultural and forestry-related erosion, and CO_2 emissions (embedded in the resource use). [6]

Using 2000 data as a baseline, and estimating a world population of 9 billion people by 2050, a per capita future material consumption target has been developed [7], calculated at approximately 10,000kg per capita per annum (where abiotic resources account for 6,000 kg/cap/a and biotic resources account for 4,000 kg/cap/a). Of these 10,000kg, 8,000 kg/cap/a comes from personal lifestyle consumption and 2,000kg comes from public services. This methodology is peer reviewed and was used in a 2012 EU-funded research project that established pathways towards sustainable lifestyles in Europe through to 2050.[8]

CSCP has used this same methodology in WBCSD's 2015 investigations into Brazil, India and China to calculate country level average lifestyle material footprints as well as example individual footprints from a small sample[9] of, in this case, Indians, representing diverse socio-economic situations and income-levels. Individual current lifestyle material footprints from different countries provide an interesting snapshot of consumer footprints and impact areas and appear to be similar from country to country within relative income brackets.

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[6] Lettenmeier, Michael et al. Eight Tons of Material Footprint—Suggestion for a Resource Cap for Household Consumption in Finland . Resources 2014, 3, 488-515.

[7] Bringezu, S., Kazmierczak R. ed, (February 2015) Possible Target Corridor for Sustainable Use of Global Material Resources, Wuppertal Institute, Wuppertal Germany.

[8] Sustainable Lifestyles 2050 http://www.sustainable-lifestyles.eu

[9] These Lifestyle Footprints are illustrative only, calculated from a one-off household surveys and self-reported data.

II: The Good News Story: Current Solutions from Companies

The good news is that India is an innovative country and is creating a lot of thought leadership. Companies that attended the workshop are already involved in a variety of activities that could support more sustainable lifestyles across the four categories detailed in section 1 of this report.

Broadly speaking, the business case for sustainability was well understood by most attendees. As was the evidence that change - at scale - is well within the grasp of those companies with an appetite for it. For example, Infosys has saved USD80 million from its buildings sustainability initiatives.

It was noted however, that there is still a need to build more open and collaborative partnerships between business and other sectors. This will allow for faster knowledge transfer and an increase in momentum towards possible solutions. For example, this workshop highlighted an interesting and valuable recurring theme around how technologies aimed at middle-income urban Indians could be repurposed for significantly lower income levels in rural India.

The rest of this section goes into more detail around the sustainability solutions that workshop attendees felt most able and willing to address (or continue addressing) using their considerable technological and strategic expertise:

Current sustainability solutions for the home

A number of sustainability solutions for the home already exist, including solutions for building management systems, air and water quality and management, natural lighting and energy efficiency, greener construction materials (including cement), and renewable energy. However, overall the business case for more sustainable building materials, practices and infrastructure still needs a lot of work. Another key requirement is training on key areas such as eco-design.

Companies present were open to the idea of working together to bring key stakeholders on board, such as policy makers, architects, developers, cement makers, materials producers, ICT and project planners. Through a collaborative approach, they would promote the benefits of green buildings and societies, offer policy, business and financing options for penetration of green technologies into residential developments, and work closely with stakeholders to understand and address key barriers.

Specific sustainable solutions for the home discussed by the group:

- Easy-to-apply building technologies such as screen coatings to assist with climate control.
- Micro-energy installations, including rooftop solar and thermal heating.
- Water management solutions including monitoring, restricting water flow, rainwater harvesting, waterless urinals, community-level sewage treatments plants and the promotion of water re-use for gardening and toilet flushing.
- Improved solid waste management systems such as segregation at source, waste to energy and composting technologies, and recycling building waste in the construction industry.
- Reduction of carbon emissions for building materials such as cement, including better waste management, water recycling and reductions in associated coal consumption.
- Promoting local climate-relevant architecture, as well as the use of local products.
- Raising awareness around non-mechanized ventilation and indoor air quality, as well as proper building orientation and insulation, and the use of natural daylight.
- Daylighting tubes in commercial spaces that maximize natural lighting.
- Building management systems for tracking energy consumption in the home, including sensors and other ‘smart home’ automation services.

Sustainability solutions for mobility

The group discussed electric vehicle technologies, car sharing services and the potential of more connected mobility technologies for improved traffic conditions. However, one of the most exciting opportunities identified by the group in mobility was around corporate sponsorship of more sustainable commuting methods, ranging from employee ride-sharing in private vehicles, to corporate buses from residential developments to corporate campuses.

To realise this opportunity, corporations will need to invest, either through product and service developments such as corporate shuttles, or by supporting electric mobility solutions such as charging infrastructure on campuses. Beyond the financial investment, to make this approach successful companies will need to actively engage their employees and reach out to other businesses.

Where technology solutions for mobility challenges were required, participants showed interest in assisting with 'Proof of Concepts', covering both the technologies that might be needed, sharing best practices from elsewhere in the world, and developing internal awareness programs for new mobility options. This interest in technological solution support extended to some of the collaborative consumption and sharing economy solutions that were discussed for the Home.

Measurement of employees' footprint is important for building the business case and its momentum across the sector. There is an opportunity for companies with measurement expertise to take a leadership position by implementing more sustainable commuting options, measuring their impact and sharing their insights.

Sustainability solutions for food & nutrition, personal and home goods

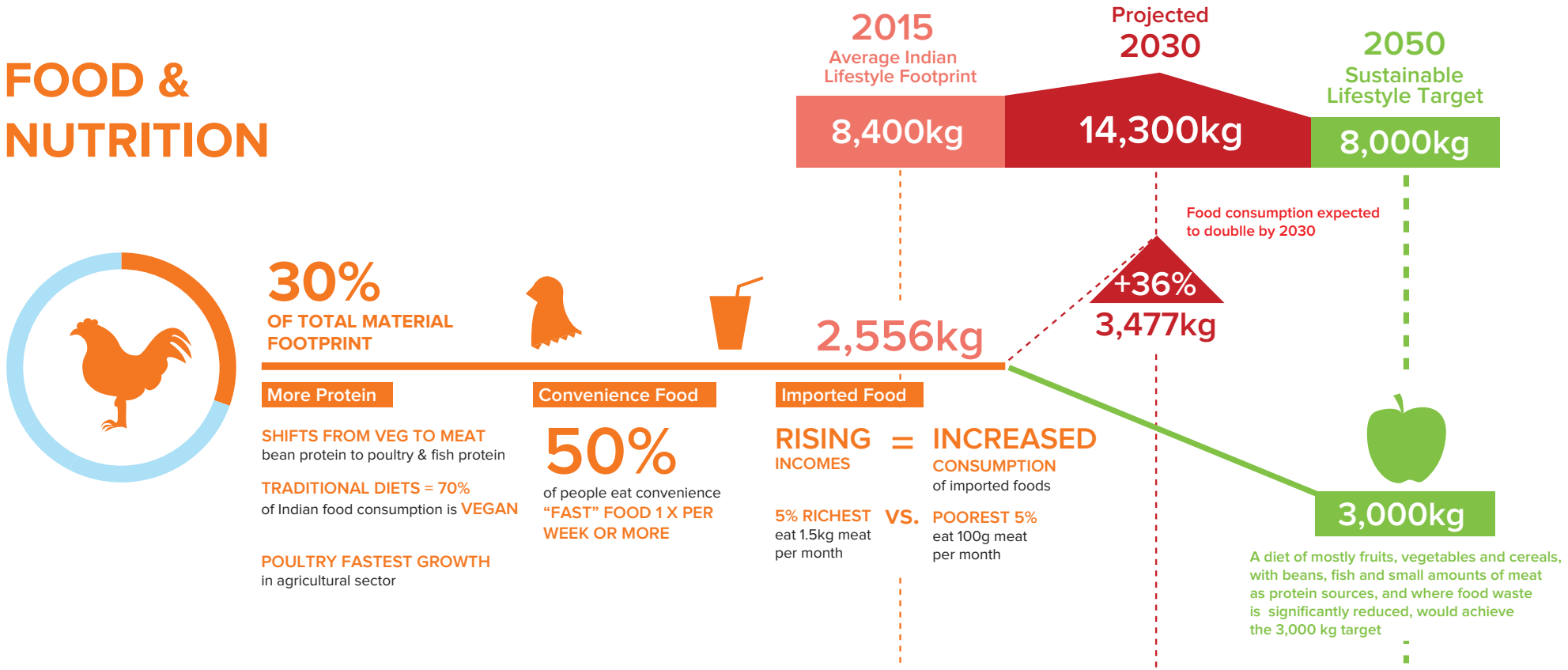
There was a good discussion about how business could help deal with unsustainable and unhealthy food consumption. Themes covered included tackling the appeal of unhealthy fast foods by making healthy options taste better, improving supply chain infrastructure from extraction and production to transport and distribution, and combatting food waste.

There was also excitement around the technical opportunities to reduce the impact of personal goods – for example, methods to increase the longevity and freshness of textiles, chemicals that help individuals use less water in their daily lives, and biochemical approaches to energy from waste generation.

However, the companies present agreed that technology would not fix any challenge in this area without simultaneous consumer behaviour change. This led to the shared realisation that we need to better understand the 'value-action' or 'attitude-behaviour' gap, and how to create solutions that can scale. Further research is also required into hard-to-reach areas of sustainable lifestyles, such as sharing high value personal items like jewellery. Furthermore, we need to establish more links between sustainable lifestyles and smarter living – starting at the individual level and reaching right through to the operation of smarter cities.

Food & Nutrition

Figure: Current average lifestyle material footprint of food and nutrition as a % of the total individual lifestyle footprint (average Indian) including the hotspots driving the footprint today and projected to 2020-30. A future sustainable lifestyle target level of material intensity for food consumption is also suggested.



Issues and challenges

Discussions focused on food and nutrition challenges, including the effects of fast and processed foods on healthy diets, as well as food production, supply chain logistics and food waste.

In Indian cities, tasty food is increasingly associated with processed food. This is leading to unhealthy diets – in direct contrast with more traditional and healthy food habits of the past. Participants underlined the importance of food safety, articulating that the current government focus on this could be used as a springboard to provide consumers with information beyond that required by legislation. The group discussed the need to limit food loss across the supply chain, as well as the need for more biodegradable packaging.

Another key issue in urban areas is the role of informal 'waste pickers': while their livelihoods should be maintained (as there is growing recognition that they contribute to the local economy, to public health and safety, and to environmental sustainability), their working conditions need considerable improvement.

Key challenges to be overcome (as identified by workshop participants)

- Packaged and processed foods are on the rise, ushering in a new era of convenience in food consumption. Food packaging is also an issue in waste management.
- The rising middle classes in urban areas are eating more meat-based (poultry/fish) diets, and increasing alcohol consumption.
- Food waste occurs across the supply chain, as well as downstream from consumers – in the form of household food waste. Managing waste is a key livelihood strategy for the poorer populations of "waste pickers".

Sustainable lifestyle scenario: key requirements

The group identified three overarching requirements around food and nutrition, around which business could work, and that support a future more sustainable lifestyle scenario:

- A traditionally healthy diet that's desirable across all levels of society, mostly comprising of grains and vegetables.
- A waste management system that uses modern principles and technology, while respecting and incorporating the involvement of low income 'waste pickers' in the solution.
- The widespread adoption of safe, biodegradable packaging.

Business solutions and opportunity spaces

Key solutions identified by workshop participants	
Hotspot	**Solutions**
Health and nutrition	• Product and technology solution: develop taste enhancers and nanonutrients to improve the appeal of healthy food. • Behaviour and technology solution: leverage growing interest in fitness and technology – including apps that monitor calorie intake and nutrition. • Behaviour and policy solution: promote healthy and tasty foods through education and labeling.
Food loss and food waste	• Infrastructure, technology and product solution: reduce food loss upstream through B2B collaborations and explore industrial symbiosis. • Infrastructure and policy solution: formalize "waste pickers" through public-private-people partnerships.
Food safety & packaging	• Infrastructure and technology solution: improve shelf life of products through improved packaging and further develop biodegradable packaging solutions.

Developing the market for sustainable, nutritious and desirable food

Product solution spaces: There is an opportunity to redirect India's current food trend from a growing appetite for fast, processed, unhealthy, high impact food towards healthier, tastier, lower impact choices.

One solution discussed by workshop participants was the development of taste enhancers and nanonutrients that would help make foods tastier for a wider audience while also compensating for nutritional deficiencies in current lifestyles. In the long term, this solution would help shift the perception that tasty equals unhealthy, and vice versa.

Behaviour and technology solution space: Fitness is fast becoming a serious business in India, with gyms opening across the country.[10] There is an opportunity to leverage this growing awareness to encompass healthier eating habits. Rather than focus on environmental or sustainability issues, food consumption could be improved by delivering a message primarily around health. One option suggested by workshop participants was to design a high quality exercise monitor that records calorie intake and general nutrition (although these already exist, there's a lot of room for improvement). Ideally, this monitor would make health, fitness and wellbeing attractive and accessible to a wide audience.

Behaviour and policy solution spaces: India is becoming less traditional in its food habits. This shift is motivated by different factors, including a greater availability of packaged and processed foods in Indian supermarkets, the increase in dual-earning families and time pressures on preparing meals, and the contracting market for full-time domestic help. The group felt that more could be done to maintain interest in healthy and tasty foods, such as promoting healthy, traditional food through education and labelling – and going beyond the current regulatory requirements.

Another collaborative solution could be to design a recognizable stamp that would help busy consumers quickly and confidently identify healthy food. This would require a public and private partnership, and could deploy on retail shelves and restaurant storefronts. The Consumer Goods Forum is an inspiring precedent for this kind of corporate and stakeholder collaboration at a global level.[11] Indian corporations could raise awareness of the new label by promoting it in their canteens.

[10] Basu, D. (2014). "India's growing fitness craze." Retrieved September 29, 2015, from http://www.bbc.com/news/world-asia-india-25618165.

For example, Infosys has 176,000 employees in India; companies have a lot of potential to shift individual lifestyles at scale. A recent study in Cornell University dining halls found that labels for healthy food helped decrease the consumption of high calorie, high fat foods.[12]

Improving the supply chain and waste management

Infrastructure, technology and product solution space: The issue of food loss in food production, storage and distribution is a major hotspot in India. One possible solution is the introduction of industrial symbiosis principles in agricultural systems. This involves a mutually beneficial exchange of materials and energy along the supply chain, in order to add value to operations, reduce costs and improve positive environmental impacts.

Projects are underway to better manage waste as a resource among industries in India[13], and these are now appearing even amongst smallholder farmers too. Varun Agro is a key supplierto Unilever: the company has set up processing plants to help smallholder farmers avoid crop waste.[14] Such examples demonstrate that value can be generated: there is potential for greater collaboration between companies exploring industrial symbiosis principles in an agricultural pilot project. Participating companies would create not only an incubator for research and development on food production technologies and business collaborations, but also an education space for promoting best practices, amongst both smallholders and industrial food supply chains.

Finally, there is a global trend towards product-based services in the agricultural sector, or 'servicizing'[15] – which could also be explored in India. This includes the services of crop management and food product longevity.

Infrastructure and policy solution space: The group identified a need to formalize waste collection and sorting, preferably through public-private-people partnerships, that could provide healthy, safe and resilient livelihoods for waste workers. Ideally, such a partnership would also create projects to improve waste pickers commercial skills, such as literacy and numeracy. Two best practice projects already exist in India: the SEWA trade union, which is present in several Indian cities, and the KKKPK waste pickers organization in Pune.[16] Bangalore is operating a successful community-level approach to waste management ; the best practices from here could be collected by the corporate sector and shared across other cities.

Introducing new packaging solutions

Infrastructure and technology solutions space: While packaging helps protect food products and improve their shelf life, workshop participants felt that advances could be made in innovative storage facilities and improved packaging materials. Participants also noted that the development and mass promotion of biodegradable packaging would be welcomed in India. The group felt there were many opportunities for companies to work collaboratively across the food system to reduce the need for unnecessary multi layer packaging.

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11 For more information please visit: http://www.theconsumergoodsforum.com

12 Cioffi, C. E., et al. (2015). "A Nudge in a Healthy Direction: the effect of nutrition labels on food purchasing behaviors in university dining facilities." Appetite 92: 7-14.

13 Bain, A., et al. (2010). "Industrial symbiosis and waste recovery in an Indian industrial area." Resources, Conservation and Recycling 54(12): 1278-1287.

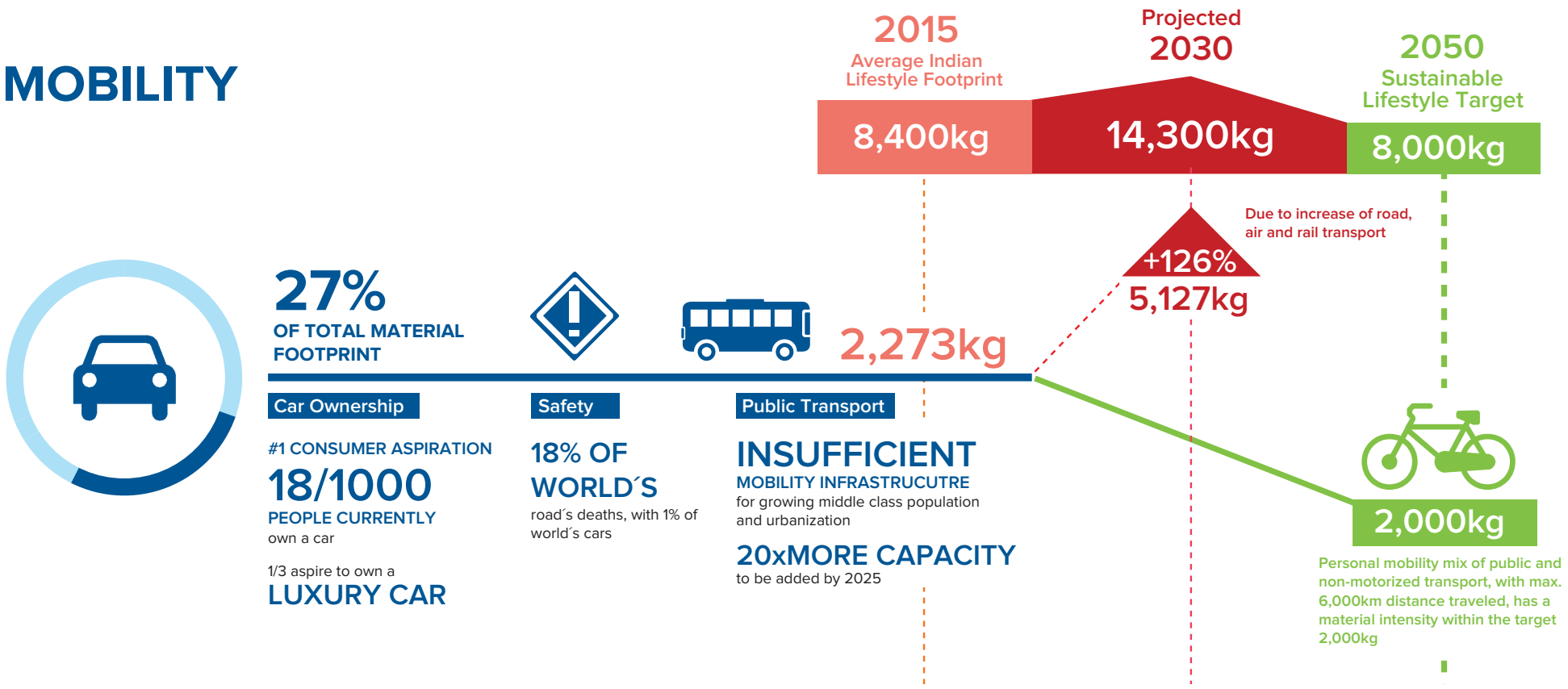
14 Unilever (2015): https://www.unilever.com/sustainable-living/sustainable-living-news/news/Smallholder-farmers-provide-100-of-the-tomatoes-in-Kissan-ketchup.html

15 See the following link for more information on servicizing: https://ec.europa.eu/programmes/horizon2020/en/news/why-buy-when-you-can-%E2%80%98servicize%E2%80%99

16 Sustainlabor (2014). "Formalizing waste pickers and building union power." Retrieved September 29, 2014, from http://www.sustainlabour.org/noticia.php?lang=EN&idnoticia=707.

Mobility

Figure: Current average lifestyle material footprint of mobility as a % of the total individual lifestyle footprint (average Indian) including the hotspots driving the footprint today and projected to 2020-30. A future sustainable lifestyle target level of material intensity for mobility is also suggested.



Issues And Challenges

Mobility discussions in India focused on poor infrastructure and facilities, and the rise of private motorized vehicle ownership – both cars and scooters.

Although extensive, the public transport network is unable to cope with the number of people who need to use it. Furthermore, India's poorest are unable to afford it. Conditions and crowding make public transport an unappealing proposition for the middle classes. Business opportunities are already being explored by companies in partnership with public transport operators (e.g. sponsoring of certain facilities).

Traffic jams are common in urban centres, leading to poor air quality and pollution. Road safety is also an issue, in both rural and urban areas. While car and ride sharing could be a viable alternative, issues of safety and status put a lot of people off. However, this could be changing with the growing appeal of ride-sharing taxi (Uber-style) services in Indian's metropolitan areas.[17] There is a business opportunity in providing safe and convenient commuting options for employees, from condominiums and gated communities to company campuses. Partnering with city planners to develop mobility options that link leisure-to-workplace activities would be a key opportunity for collaborative innovation.

Key challenges to be overcome (as identified by workshop participants)

- Public transport is declining in urban India, with car ownership and motorized mobility aspirational for many.
- Infrastructure is also lacking for non-motorized transport (such as rail, and bike routes); bicycles are not affordable to all, nor are they aspirational.
- Infrastructure and connectivity is lacking for multi modal transport, from public to private mobility.
- Road safety, congestion and pollution are all major issues in urban areas.

Sustainable lifestyle scenario: key requirements

The group identified three overarching mobility requirements, around which business could work, and that would support a future more sustainable lifestyle scenario:

- A more collaborative approach to commuting made possible by communities and companies working together.
- New public private partnership approaches to improving public transport, particularly for business users.
- Safe, non-motorized transport options for India's poorest.

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[17] The Economic Times (2015), "Changing trends: Here's why it may make sense to sell your car and hire a cab from Uber or Ola" retrieved from http://economictimes.indiatimes.com/small-biz/startups/changing-trends-heres-why-it-may-make-sense-to-sell-your-car-and-hire-a-cab-from-uber-or-ola/articleshow/48289590.cms

Key solutions identified by workshop participants	
Hotspot	**Solutions**
Preference for private transport & Limited non-motorized transport options	• Infrastructure, technology and behaviour solution: improve public transport (focus on commute and business traveler) through better facilities and services, supported by brands where alignment exists between brand and service. • Incentivise more sustainable commuting options. • Infrastructure and behaviour solution: link existing engagement in health to corporate value propositions and support improved infrastructure for walking and cycling.
Road safety, congestion and pollution	• Technology and behaviour solution: promote tech-enabled car and ride sharing, and vehicle-to-vehicle communication to reduce congestion. • Policy and infrastructure: work collaboratively to improve city planning around mobility and lifestyles. See work of WBCSD Sustainable Mobility Project 2 in Indore, India.

Improving public transport systems

Infrastructure, technology and behaviour solution spaces: Workshop participants recognized a need for better public transport infrastructure and facilities across India. Opportunities include branded carriages and best-in-class facilities, as well as lounges and waiting areas that offer branded products and brand experiences. Participants also underlined the importance of hygienic bathrooms in public spaces – sanitation, far more than safety, was a key barrier to use of the public transport.

Companies indicated that they could work internally to promote corporate shuttles from condominium developments to the workplace. In order to enhance their appeal, companies could ensure that corporate shuttles provide premium-level working conditions, such as electrical sockets and wifi Internet connections. To further develop this idea, our research shows that mobility is connected to different aspects of consumer lifestyles. Improved mobility services, such as a corporate shuttle, could therefore take into consideration other stops along the way, beyond the work-home transit, such as day-care and school drop off and pick up, as well as stops at food retail centres and markets.

Another potential opportunity would be for companies to incentivize ride sharing between their own employees, and encourage it through technological solutions – such as ride-matching.

Infrastructure and behaviour solution space: Workshop participants felt that non-motorized transport could be further promoted, such as walking and cycling. However, the group also agreed that this promotion would have to develop hand-in-hand with proper walking and cycling infrastructure, as well as more attention paid to air pollution in urban centers. While cycling has had a long history in India, traffic and congestion have made it both dangerous and unhealthy to cycle (and walk) in urban areas.[18] Some trailblazers are leading the way in promoting city cycling as a hip and environmentally-sound way to get around, with group cycle rides and cycle clubs popping up regularly in various cities in India.[19] Business can play a role in supporting cycling communities, starting with their communities and campuses. Another way to encourage non-motorized transport is to tax private vehicles, a solution suggested by workshop participants in light of similar efforts in Singapore.

Safer, cleaner and more fluid transit

Technology and behaviour solution space: Workshop attendees discussed how tech-enabled car and ride sharing schemes are a tremendous area of opportunity in India, particularly through vehicle-to-vehicle communication technologies. One possible collaborative opportunity is working across the mobility sector to further develop car sharing offers, while also promoting sharing internally within companies.

Policy and infrastructure space: The group agreed that business could work more closely with the public sector to improve urban mobility solutions, including motorized and non-motorized transit, and the promotion of low-carbon mobility. They also raised the need for efficient rapid rail systems. The workshop also discussed how mobility could be tied into other aspects of sustainable lifestyles - for example, by linking leisure activities, work, school and home. There is also an opportunity to promote non-motorized transport by 'piggy-backing' on the health and fitness trend.

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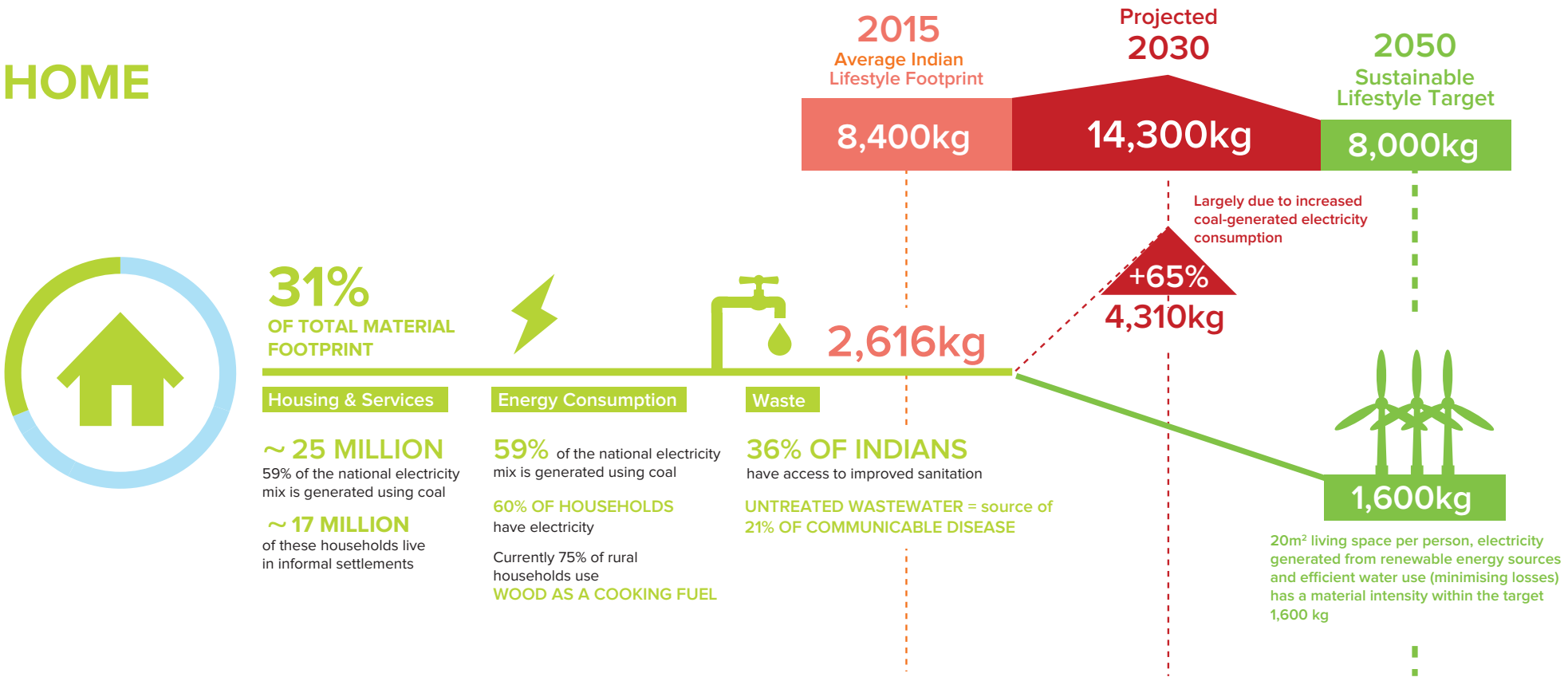
18 "In 2012, according to India's National Crime Records Bureau, a total of 168,301 people died on its roads. In New Delhi, that includes 78 cyclists and 501 pedestrians." The Guardian (2013) available from http://www.theguardian.com/lifeandstyle/2013/nov/20/how-safe-are-worlds-cities-for-cyclists

19 Mead, N. (2014). "'Nobody cycles across Mumbai.' But why?". Retrieved September 29, 2015, from http://www.theguardian.com/cities/2014/dec/17/cycling-central-mumbai-traffic-india-megacity.

Home

Figure: Current average lifestyle material footprint of the home as a % of the total individual lifestyle footprint (average Indian) including the hotspots driving the footprint today and projected to 2020-30. A future sustainable lifestyle target level of material intensity for the home is also suggested.



Issues And Challenges

As rural-to-urban and urban-to-urban migration increases, Indian cities do not have adequate housing facilities to match the population influx. 28% of India's population is 10-24 year olds: this group will continue to urbanise and will be a huge force for growth, driving demand for both goods and basic services. India needs to work to meet this housing and basic service demand equitably and in a sustainable way.

While a large number of technological solutions for more efficient housing exist, uptake has been slow in the residential sector. Owning a home is an aspiration for many middle class Indians and presents a form of security through investment. Developers do not see the need to invest in 'sustainable' housing. And prospective homeowners are looking for lower cost options, without recognizing the long-term savings associated with sustainable housing. Homes are getting bigger, and more people in affluent groups are buying second homes. In stark comparison to this, the commercial sector boasts world-leading 'green' developments, certified by LEED India. There is a big opportunity for commercial building experts to share their knowledge and practices with developers in the residential sector.

Key challenges to be overcome (as identified by workshop participants)

- While many commercial buildings are best-in-class green buildings, the residential sector has been slow to uptake green building principles.
- Continuing large scale urban migration requires a huge increase in affordable residential housing.
- Energy, waste and water management are all key issues: improvement in sanitation infrastructure are especially needed.
- Architecture styles that are appropriate for local climatic conditions are needed.
- Housing ownership remains aspirational for many. Costs of purchase and maintenance remain a key barrier, as well as overall awareness.

Sustainable lifestyle scenario: key requirements

The group identified three overarching requirements around the home system, on which business could work, and that would support a future more sustainable lifestyle scenario:

- Replicate Indian leadership in construction of sustainable commercial buildings in the residential sector.
- Reintroduce focus on 'low-tech' solutions in construction that work with natural climatic conditions.
- Implement future-appropriate efficient infrastructure to deliver improved industrial and residential energy, water and waste management.

Key solutions identified by workshop participants	
Hotspot	**Solutions**
Continued construction of inefficient building infrastructure	• Infrastructure, policy and behaviour solution: Stimulate sustainable building development through internally recognized standards and locally relevant architecture styles.
Inefficient energy supply and appliances	• Technology, policy and behaviour solution: Diversify energy sources and promote existing more efficient energy technologies.
Water loss and quality; sewage and sanitation	• Technology, business case and policy solution: Work with developers to implement more holistic water solutions, including rainwater collection and proper treating of sewage. Policy incentives could be driven from health benefits of improved sanitation and management of waste water.
Solid waste management	• Infrastructure, technology and policy solution: Promote waste-to-energy options, such as anaerobic digestion of food waste with biogas production (involve 'waste pickers').

Develop sustainable housing development

Infrastructure, policy and behaviour solution space: Workshop participants agreed there is a tremendous opportunity to transfer expertise in sustainable construction from the commercial sector to the residential sector. Among other solutions, this would allow for the creation of LEED certified homes. The Indian Green Building Council [20] could act as a key partner in this respect, as efforts are already underway to classify energy efficient commercial buildings, but also green homes, schools and factories.

The group also felt that locally relevant architecture should be promoted, sensitive to both local needs, materials and climatic conditions. Locally relevant architecture reduces energy consumption in the long term – for example, for cooling.[21] This kind of architecture typically features maximizes natural lighting and low or zero energy ventilation, as well as adequate shading and optimal building positioning for indoor air comfort. These, along with business solutions including climate-sensitive cement, rain-water collection, light tubes and screen films, are as applicable to low-cost housing as to developments designed for the middle class.

Companies could work collaboratively towards understanding the current barriers to sustainable private housing. Participants also felt that companies have a role to play in delivering public awareness campaigns that communicate the benefits of greener homes for the general public, including the potential savings in, for example, electricity costs for air-conditioning.

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[20] See the IGBC website : http://www.igbc.in

[21] Sahakian, M. (2011). "Understanding household energy consumption patterns: When "West is Best" in Metro Manila." Energy Policy 39(2): 596-602.

By working collaboratively with the public sector, tax rebates could be designed to encourage the purchase of more sustainable homes. Workshop attendees also agreed there may be an opportunity to communicate messages around resource frugality and conspicuous conservation within the housing sector.

Promoting domestic renewable energy and efficient appliances

Technology, policy and behaviour solution space: The workshop attendees emphasized the importance of greening energy sources in India, as well as reinforcing the importance of energy-efficiency in homes through the introduction of more efficient appliances (particularly climate control). India, similar to other countries, has progressively liberalized its energy market, with a recent emphasis on solar power through its National Solar Mission. No comprehensive study of the policy framework for supporting renewable energy sources has been conducted, but experts agree that a favourable policy environment should be coupled with effective renewable energy technologies, as well as price/performance ratios that appeal to investors and customers.[22] Changes are underway to promote renewable energy, but more could be done to deploy micro grids – operating in parallel to or independently from larger grid systems.
In addition to ensuring more renewable energy sources, participants also outlined the need to promote the availability of more efficient appliances in India. The question of access to reliable sources of energy also remains a major issue – particularly in informal city developments, as well as in rural areas.[23]

Smarter water management systems and improved air quality

Technology, policy and behaviour solution space: The group agreed that more could be done to better manage water systems in India, while improving access to clean water. Water quality and safety remains a critical issue, and is closely tied to urban plumbing and filtration systems. With groundwater levels fast depleting in various regions, rooftop rainwater harvesting has become popular in India. There are efforts underway to capture rainwater in urban centres, with Bangalore taking the lead. However, little information is publicly available on how such measures are playing out in practice. Nonetheless, industrial runoff [24] and poor sanitation remain critical challenges in India. Wastewater could also be managed more efficiently, such as the use of grey water for cleaning streets and other outdoor areas.

Technology and policy solution space: As already raised in the Mobility section, workshop participants felt that air quality in urban areas is an important issue, and is linked to local pollution. Technological solutions for air-filtering systems are already being developed. Companies could take a more active role in further promoting both indoor and outdoor air quality, for example through partnerships with health organizations and the public sector.

Sustainable solid waste management systems

Infrastructure, technology and policy solution space: The conversion of waste to energy, such as biogas, represents an exciting opportunity in India - one that is currently being explored in Bangalore. A review of life cycle assessment (LCA) impacts of waste processing technologies establishes that anaerobic digestion of food waste with biogas production has the least environmental impacts (followed by wet feeding, dry feeding, composting, incineration and then landfilling). The exact environmental benefits of biogas extraction depend on the environmental profiles of the fuel that it substitutes, in respect to transport fuel, natural gas for heating or cooking, or fuel for electricity generation. In the context of Bangalore, a recent report highlights four focus areas: reducing waste generation; source segregation; waste management by the city corporation; and a decentralized waste management system based on local waste data.[25] There are clear links between challenges involving food loss and waste management, and domestic waste management more generally. Waste repurposing to provide less environmentally impactful fuels offers an exciting opportunity in both urban and rural areas.

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22 Srinivasan, S. (2009) Subsidy policy and the enlargement of choice, In: Rational exuberance for renewable energy: Green energy and technology, Springer Verlag London.

23 Srinivasan, S. (2009) Subsidy policy and the enlargement of choice, In: Rational exuberance for renewable energy: Green energy and technology, Springer Verlag London.

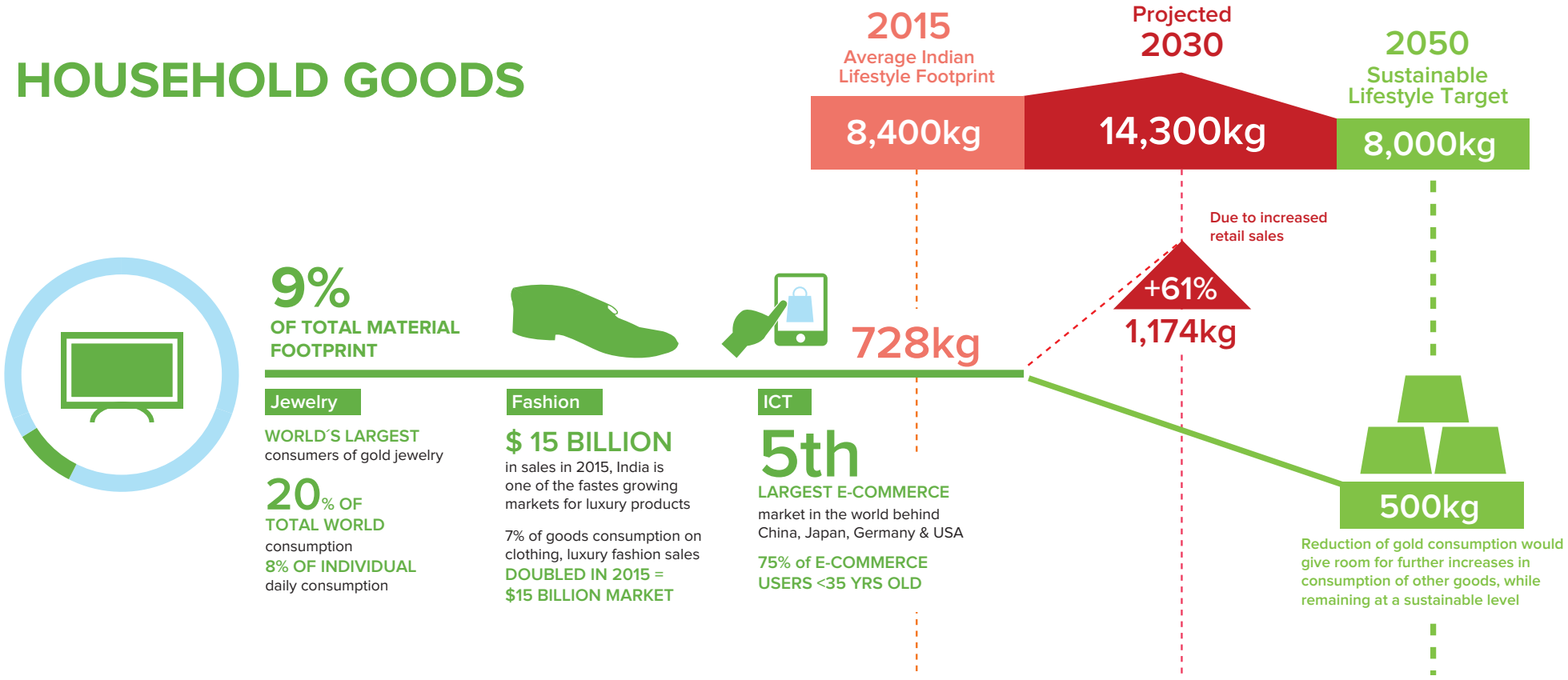
24 Pachauri, S. (2004). "An analysis of cross-sectional variations in total household energy requirements in India using micro survey data." Energy Policy 32(15): 1723-1735.

25 Earlier this year, the surface of Bellandur Lake was spontaneously catching fire as a result of a build up of pollutants: The Hindu (2014), http://www.thehindu.com/news/cities/bangalore/fire-on-bellandur-lake/article7215310.ece

25 Shenoy, M. (2014). Environmental Impacts of Food Production and Food Waste Management: Drawing From the Life Cycle Assessment (LCA) Approach and an Understanding of Local Systems in Bangalore, India and Metro Manila, Philippines. M. Sahakian. Geneva, Switzerland, University of Lausanne: (Un) Sustainable Food Consumption Dynamics in South/Southeast Asia: 46.

Household Goods

Figure: Current average lifestyle material footprint of personal goods as a % of the total individual lifestyle footprint (average Indian) including the hotspots driving the footprint today and projected to 2020-30. A future sustainable lifestyle target level of material intensity for personal goods is also suggested.



Issues and challenges

Consumer culture is booming in India as increasing levels of affluence create new demand – primarily for electronic goods, fashion items, and gold jewellery. In contrast to the frugality and voluntary simplicity that has defined past generations of Indian families, the trend today is towards the ownership of cheaper, less durable items – creating a more throwaway culture among those those who can afford it.

While the sharing and product-based service economy is an opportunity to reduce the material throughput of consumer goods, notions of 'sharing' and 'services' are associated with several barriers, not least hygiene issues. There is an opportunity to inspire consumers into more sustainable consumption patterns, but various elements would need to come together – including behavior and attitude change and awareness, as well as new products, technologies and platforms.

Key challenges to be overcome (as identified by workshop participants) Challenges:

- The culture of frugality and voluntary simplicity is changing in India.
- As buying power increases, so does the conspicuous consumption of status goods.
- Electronic goods, fashion items and gold are the main consumer spending areas.
- Products have shorter life spans and are disposed of much faster than in previous generations.
- The market for second-hand and shared products faces several barriers, including perceptions around hygiene – for instance, smell is an important factor when it comes to clothing and fashion in India.

Sustainable lifestyle scenario: key requirements

The group identified three overarching mobility requirements, around which business could work, and that would support a future more sustainable lifestyle scenario:

- Conscious consumption regarding the volume of goods purchased and their environmental and social impacts.
- Goods with lower impact throughout lifecycle – from design, to production, to use and disposal.

Business solutions and opportunity spaces

Key solutions identified by workshop participants	
Hotspot	**Solutions**
Electronic Goods & Fashion and luxury goods & Low quality, short-lived clothing	• Technology, product and behaviour solution: Build on traditional Indian behaviours and promote more circular business models for all consumer goods where appropriate, increasing reuse, repair and recycling of goods such as appliances and durable goods. • Increase lifespan of clothes by applying protective coatings and 'new smell' odour control.
Private ownership	• Behaviour and service solution: Explore involvement of lower income workers in the management of a commercially viable sharing economy of high quality goods.

Fashion and luxury goods

Technology and product solution space: Workshop attendees agreed that technological advances could ensure the longevity of certain personal items, such as clothes that last longer and smell fresher, or the use of 3D printing to render more efficient both the production of goods as well as their repair.

In relation to waste generated from consumer goods, leading companies are increasingly turning to new design theories that promote cradle-to-cradle design, or developing new products with not only down-cycling but also up-cycling in mind.[26] Novelis, a subsidiary of Aditya Birla Group, is considered a pioneer in the circular economy for its approach to aluminum production and products such as Evercan.[27] There is an opportunity for more Indian companies to join leaders in North America, Europe and Asia in progressing circular thinking at an industrial level.

[26] McDonough, W. and M. Braungart (2002). Cradle to Cradle: Remaking the Way We Make Things. New York City, North Point Press.

[27] "In early 2011, Novelis set out to increase the recycled content in its products from 33 percent to 80 percent by 2020, making Novelis the world's most sustainable aluminum company and closing the loop on global aluminum production and consumption." The Circulars (2014), https://thecirculars.org/finalists

One final interesting area of discussion involved elongating the life of clothes – a solution was proposed whereby a combination of a textile coating, incorporating a odour-regulating fragrance, could make clothes both more durable as well as perceptibly 'newer' than they actually were as a result of their smell.

Health and hygiene generally resonate with people far more than environmental factors. Along with India's traditional relationship with a more natural and holistic approach to personal well-being, and recent growth in markets such as organic food [29], the group felt that this health focus could help to promote more environmentally sound personal care and cleaning products. The high prevalence of water born diseases offered a further functional angle to explore.

Behaviour and service solution space:
The group recognized the huge potential that collaborative consumption and sharing has for reducing the material throughputs associated with production and consumption. However, questions of cleanliness and hygiene are paramount in India: companies participating in the workshop agreed that the private sector could take the lead in developing quality controls for the sharing or leasing of second hand goods. Existing tested business models could be explored in a culturally sensitive and appropriate way: this may be another area in which lower income workers can be included in a business solution. There could be a role for domestic helpers to 'own' the sharing economy in India, enabling households to share appliances and other items by working through networks managed by domestic helpers.

Finally, the sharing economy could also focus efforts on one particular hotspot in this category - gold consumption and jewellery. There may be an opportunity to encourage sharing rather than ownership of such products, for example, by hiring or sharing for special occasions, although the cultural barriers to overcome will be strongest around this challenge.

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[29] The domestic market for organic products was estimated at Rs.1,000 Crore (or approximately 190 million US $) in 2011-12, and is expected to grow to 1 billion US $ by 2015, HAVAS WORLDWIDE (2015) Sustainable Lifestyles | Indian Context, WBCSD Sustainable Lifestyles Workshop Bangalore Materials

Conclusion

The ultimate goal of the workshop was for companies to explore new opportunities to collaborate across businesses and industries, linking existing product and service solutions for bigger positive impact against key current and future lifestyle hotspots.

From those discussions we have selected the three areas that participants got most excited about – ideas that have the potential to lead to transformative action that could enable and inspire more sustainable lifestyles.

Each of these areas would involve the co-creation of new collaborative solutions – extending beyond business leaders to include civil society, the public sector, media partners and other key stakeholders.

Three Big Ideas: Companies collaborating to transform sustainable lifestyles

Interconnected multi-modal transport: revolutionizing mobility through collaborations and commuting schemes

Indians are embracing ride sharing services. As more and more of the middle class move into housing developments there is an opportunity to develop a more collaborative approach to commuting. Communities and companies could enhance the availability and convenience of services such as car sharing, shuttle services and park-and-ride options – particularly for the daily commute.
Beyond sharing and route enhancement, ICT could link transport to different lifestyle propositions. For example, companies close to each other could offer shared access to healthy and convenient food, bicycle (and other) repair shops and recycling centres. In time, it could be possible for corporate supported mobility schemes to extend to encouraging healthier lifestyles. Non-motorized transport could be promoted through this platform, including walking and jogging routes in public spaces and parks, as well as safe areas for bike parking.

Public transport is not widely used by the middle class - it's not safe, clean or convenient enough. Companies could work with public transport providers (especially rail) to make India's extensive transport networks more attractive to business and middle class travelers.

Greening the home: transferring knowledge from the commercial to residential sector

India has the fourth largest amount of LEED certified green building space in the world. There is a great deal of expertise in efficient and sustainable building design, but it is currently held within the commercial sector. Companies can help overcome this in two ways. First, they can share existing solutions with developers of residential buildings. And second, they can convincingly prove the business case for more sustainable building technologies amongst relevant stakeholders. Residential developments are being built on a scale similar to commercial properties – the solutions, from greener cement, to energy efficiency, to water collection, are available and transferable.

Furthermore, there is an opportunity for architects, developers, urban planners and construction companies to come together to design and develop a model community for future urban communities in India. To begin with, this should focus on building design, and energy, water and waste infrastructure. In time it could also explore and experiment with what the 'good life' might look like in a more sustainable India. The technology and infrastructure could build on existing best practice globally, and generate a public debate around existing and necessary regulations to further promote 'sustainable' homes and communities across all income groups that appropriately address specific challenges in India. Because this model is in line with efforts in other locations around the world, there is an opportunity for more formal, effective and widespread collaboration.

Modernizing sharing culture: promoting collaborative consumption

India has both a culture of hoarding (something might come of use) and thriftiness (re-use and hand-me-downs). These traditions make it a country where new sharing economy business models could quickly take hold and become commercially viable. Collaborative consumption is increasingly seen as a route to reducing material footprints, ensuring that goods are put to long use, shifting the trend from ownership towards convenience. By sharing goods, services and spaces, consumers around the world are finding new ways to use and reuse material possessions, but also engage in deeper social relations. India's entrepreneurial spirit and flourishing technology sector is perfectly placed to scale sharing opportunities in mobility, clothing and household goods.

Appendix I

Bangalore Attendees & links to 2015 workshop reports

3M

ABB Asea Brown Boveri Ltd.

Aditya Birla Group

Apple Inc.

BASF India

BMW AG

British Telecommunications plc (BT plc)

Confederation of Indian Industry (CII)

Environmental Resources Management Limited (ERM) India

Firmenich SA

Forum for the Future

Havas Group

HeidelbergCement India Limited

Infosys Limited

ITC Limited

KPMG

Thermoshield

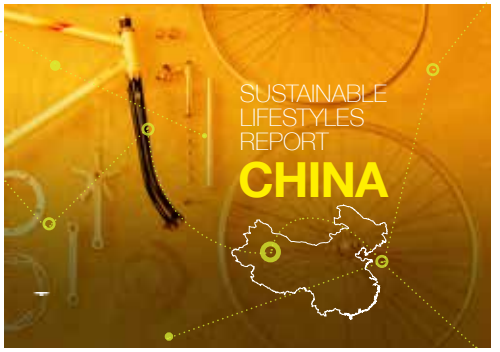
Novozymes A/S

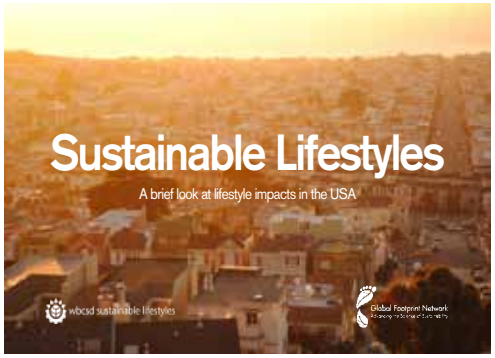
PricewaterhouseCoopers

smarter dharma

United Sustainable Developments

Mahindra Lifespaces





Appendix II

The Product Perspective

The “product perspective” considers the social and environmental hotspots across the entire value chain, from raw material production or extraction through manufacturing and distribution to use and end-of-life. This approach often identifies diverse impacts across various stages of the value chain. Some relate to processes under the direct control of retailers and brand manufacturers but typically the bigger impacts are “upstream” in the early stages of the value chain or “downstream” in product use and end-of-life. This makes it challenging for any one organization to tackle these alone. And yet, experience shows that through partnerships and novel business models, there are major opportunities to tackle these sustainability hotspots and unlock business value.

The Sustainability Consortium (TSC) has identified the hotspots and improvement opportunities across 120 different food and consumer product categories, representing approximately 60-80% of the sustainability impacts of the entire consumer goods value chain. TSC has contributed this knowledge to the WBCSD Sustainable Lifestyles Project. The aim of doing so is to allow WBCSD to re-use this pre-existing work and to put the focus on finding innovative partnerships and business models to drive change.

The Results

Brazil, India and China are diverse markets each with their own characteristics. Nonetheless, there are many common themes, and common impacts, across the three: some of these generic aspects include:

- Inefficient production methods are a major source of waste, including unnecessary raw material consumption, water use and pollution and greenhouse gas emissions. And worker rights and worker health & safety are important considerations in agriculture, raw material extraction and manufacturing in some product value chains.

- Consumption and consumer decisions are often the major driver of the impacts. In some cases, these impacts are directly with the consumer, such as buying food that is then wasted. This causes extra greenhouse gases from food decomposition in landfill. But these can also have knock-on impacts upstream in the supply chain. In the food waste example, additional food needs to be purchased to substitute for the food that was wasted. This leads to additional upstream impacts because the additional food needs to be produced, with all the same associated social and environmental impacts in the supply chain.

- Infrastructure plays a foundational role in determining daily impacts. Good public transport, for example, can mitigate local air pollution and overall greenhouse gas emissions by offering citizens an alternative to a car-based daily commute (as well as often improving quality of life too). In most emerging markets, major infrastructure is still being built. Retro-fitting sustainability into existing infrastructure is typically much more challenging than including it from the outset. In all three countries, there’s a significant opportunity to build-in sustainability in the design from the outset. The flip-side to this is that, if the opportunity is missed, it locks in unsustainable patterns of use potentially for generations.

THE SUSTAINABILITY CONSORTIUM™

India

The major impacts can be organized into three categories, with product-related impacts playing a varying role, as follows:

Product Supply Chain

The biggest sustainability impacts occur in the following product categories:

- Food & Nutrition: Meat, especially Poultry; Fast Food / Snack Food.

- Household Goods: Luxury Fashion; Gold.

Good energy efficiency and resource efficiency improvements already exist that have decent financial pay-backs as well as others that have more complex business cases.

Mining, processing and final manufacturing in the gold supply chain consume significant amounts of energy and electricity, with associated improvement opportunities. In all the food categories, distribution and processing can have large energy, fuel and greenhouse gas impacts. Farms and processors can consume significant amounts of electricity and energy, also leading to greenhouse gas emissions. Manufacturers and dairy farmers can measure and track energy use, perform preventative maintenance on equipment, or replace inefficient equipment to improve energy efficiency and reduce emissions. Animal welfare (chicken, dairy), worker health & safety (gold, chicken) and conflict mining (gold) are important hotspots that need engagement from across the supply chain and with support organizations & civil society.

Other opportunities include better on-farm management of antibiotics, water, fertilizer & nutrients and pollution in the meat and dairy supply chains.

Behaviour

Consumers have an important role in many aspects of product choice and product use and disposal. Similar to other markets, two important consumer trends are leading to growing sustainability impacts, both associated with increased wealth and a growing Indian middle class. These are:

- Food/Diet, in particular the increasing “westernization” of diet, including rising consumption of meat and dairy.

- Luxury fashion and gold, driven in large part by the high status that these products confer on their owners.

These impacts are driven by cultural norms in India and will be particularly challenging to tackle: however, progress is essential as these choices drive significant proportions of individual footprints.

Infrastructure

Indirectly linked to product impacts is the underlying infrastructure that influences how people live their lives and the production systems that support them. Housing, transport and utility/energy infrastructure have significant room for improvement with large societal benefits as well as the opportunity to “lock in” sustainability over coming decades.

Appendix III

The Social Perspective

Background

Managing social issues is complex.
The concept of a 'social licence to operate' is gaining traction as a key element of reputational risk management, corporate value protection and access to capital. However, the application of social impact assessment at a product- or consumption-level is not yet well understood nor systematically considered as part of product design. By contrast, approaches to analysing the environmental impacts of a product are well-established and no longer seen as an emerging science or innovation.

Stakeholder expectations are changing.
Provocative images in traditional and social media - a clothing factory collapse in Bangladesh [(1)] - a child picking tobacco in the US [(2)] - controversial resettlement of indigenous people in Ethiopia [(3)] - drive customers to demand greater transparency on where and how products are made. The risks and opportunities presented by social issues are a focal point on the agenda of leading investors and forward-thinking C-suite executives. Such changing attitudes encourage companies to develop more transparent and ambitious social performance programs.

Step-change legislation on human rights is changing the benchmark.
The California Transparency in Supply Chains Act 2010 and the UK Modern Slavery Act 2015 have been developed in response to the astounding finding that nearly 21 million people live in forced labour conditions [(4)], in addition to numerous other well-known existing and ongoing human rights issues. Furthermore, Denmark, the Netherlands and the UK are developing national action plans to implement the UN Guiding Principles on Business and Human Rights, which will help to establish a new benchmark. WBCSD's Social Impact group has developed a brief that is helping companies operationalise these guiding principles [(5)].

Social benefits can present significant opportunities. Much of the attention on social issues surrounds risk management and supply chain initiatives, as this is where some of the most significant known issues sit. However, better management of supply chain and operational risks, together with an improved ability to address social challenges or deliver social benefits through product and service design, offer huge market potential to forward-thinking companies. For instance, SCA has recognized this opportunity and it is working in China to improve the lifestyle and health of senior citizens through more accessible incontinence products.

Workshop Inputs
Over the last year, the Sustainable Lifestyles working group has explored which products and services are associated with the highest lifestyle impacts, and where business should focus its efforts to enable more sustainable lifestyles. ERM provided China-specific social hotspot information for the Beijing workshop to encourage participants to reflect on and to discuss social performance challenges and opportunities across each product category's value chain. The key social hotspot themes for Chinese value chains are summarized in the table below.

ERM

(1) http://www.theguardian.com/world/rana-plaza

(2) https://www.hrw.org/report/2014/05/13/tobaccos-hidden-children/hazardous-child-labor-united-states-tobacco-farming

(3) http://www.theguardian.com/environment/2015/sep/03/eu-diplomats-reveal-devastating-impact-of-ethiopia-dam-project-on-remote-tribes

(4) http://www.ilo.org/global/topics/forced-labour/lang--en/index.htm

(5) http://www.wbcsd.org/Pages/EDocument/EDocumentDetails.aspx?ID=16382&NoSearchContextKey=true

	Mobility	Food	Home	Household goods
Upstream supply chain	Attracting and retaining skilled staff; training; increasing competitiveness	Farm productivity; resettlement and land tenure; skills and training; farmers' access to insurance and credit; human rights; fair wages and contracts	Public spending on basic services; competitiveness of service providers; skills and training for migrant and low-skilled construction sector; human rights	Skilled employment for high-tech manufacturing; human rights
Corporate operational boundaries	Non-farm job creation; raising wages; skills and training; business ethics	Food manufacturing/ processing/tech jobs, corruption and bribery; human capital development; pace of goods to market; quality, health and safety control	Non-farm job creation for building sector; upskilling; business ethics; providing new forms of access/credit; health and safety	Non-farm job creation; human rights of workforce; business ethics; skills and training; health and safety; dependability of supplies
Downstream consumer activities	Road safety; national and regional connectivity; access and affordability; access to banking and credit	Malnutrition; obesity due to changing diets and lack of food health knowledge; access and affordability; food waste due to inefficient supply chains and storage; limited innovation; food information (eg use by dates) limited	Availability/access/tenure and affordability to safe home and services; human rights/slavery for home staff; access to banking and credit	Access and affordability; greater choice and quality; increasing digital connectivity; access to banking and credit; Intensive interactions with waste, eg living on waste sites

Workshop Analysis

Despite a steep decline in India's poverty rate in the last two decades, quality of life and lack of access to basic services remain significant issues. A rapidly emerging middle-class, rising incomes and the changing aspirations of youth are having a direct impact on consumption levels and associated social issues, however, the average Indian lifestyle must first improve to meet a sustainable level. After access to essential services such as drinking water, sanitation, electricity and safe housing, priority issues for India are education, healthcare and social security (e.g. insurance). Increasing agricultural and manufacturing productivity as well as efforts to improve training and education can enable significant social improvements. Creation of jobs outside of agriculture, access to banking and credit, fundamental human rights and bribery and corruption are also underlying issues that impact social performance across all categories.

Many companies in India have advanced and forward-thinking social compliance and organizational/ community investment programs. However, social impacts in the context of sustainable lifestyles or consumption is a relatively new concept. Emerging themes on how this space could be progressed are summarized below.

- A business case is needed to identify social performance opportunities. Management of a product's social issues may entail costs without an immediate or direct return. Techniques to analyse the broader social return on investment (e.g. reduced long term public service health costs if a healthy diet is maintained or pollution is reduced) can build an attractive case.

- Companies – even large ones – cannot act alone. Industry partnerships and the involvement of policy-makers is required to advocate positive change and can provide early-mover advantages in the marketplace.

- A systematic approach is needed to assess, prioritise and manage social performance in supply chains, company operations and consumer activities. As companies innovate and diversify products and business models to enable more sustainable lifestyles, social issues will need to be tracked against a baseline to mitigate risk, enhance reputation and build on benefits that are differentiators.

This year's work program has provided insight into what social hotspots are relevant for mobility, food, home and household goods product categories in India. When considering the three ideas for collaborative business solutions presented earlier in this report, the top-level social issues that could be used as a starting point to springboard the inclusion and integration of social issues into sustainable lifestyle discussions are summarized below.

Collaborative business solutions for India	Social issues to consider as the ideas are progressed
Interconnected multi-modal transport: revolutionizing mobility through collaborations and commuting schemes	Road safety, access, well-being and skills/training
Greening the home: transferring knowledge from the commercial to residential sector	Non-farm employment opportunities in sector, human capital development
Modernizing the culture of sharing: promoting collaborative consumption	Job creation and development, skills and knowledge/education, well-being/health, access to services and goods

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