BACKGROUND PAPER

Sustainable Lifestyles in Germany and India

- First draft of a living document -

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GERMANWATCH

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Brief Summary

The role sustainable lifestyles can play in achieving a paradigm shift towards sustainability is acknowledged in both the Sustainable Development Goals and the Paris Agreement of 2015. They are essential complements to technology and policy solutions, which alone cannot bring the necessary changes.

Sustainable lifestyles are emerging in entirely different socio-economic and cultural circumstances in India and Germany. Urban middle classes in both countries are exploring very different practices. As the Indian ecological footprint is way smaller than the German, many of the suggestions for sustainable practices for India include sticking to good or making smarter choices – while in Germany, real big changes will be needed for alternative lifestyles and greener and healthier lives.

As sustainable lifestyles are no fast-selling item yet, the full breadth of drivers for more sustainable lifestyles needs to be mobilized: e. g. information and communication, citizen empowerment, eco design and social standards, innovation as well as policy, regulations and other supportive interventions.

This paper contains first findings from a joint project on sustainable lifestyles conducted by Germanwatch and Climate Action Network South Asia (CANSA) India. It is a living document that will be revised in the course of the project. The authors welcome comments and suggestions in order to further improve the paper.

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Content

Introduction

Both the Sustainable Development Goals[1] (SDGs) and the Paris Agreement[2] of 2015 acknowledge the role sustainable lifestyles can play in achieving the envisioned paradigm shift towards sustainability. They are essential complements to technology and policy solutions, which alone cannot bring the intended transformation. Therefore, a meaningful discussion within societies and with political decision makers is needed internationally as well as within countries, for instance in Germany and in India, on how sustainable lifestyles can be developed and brought closer to the mainstream. Political frameworks, innovations by the private sector and pioneers in societies jointly have a role to play in driving sustainable lifestyles and patterns of production and consumption.

In this context, the questions to be answered are: **What does a paradigm shift towards sustainability imply for five key areas:** buildings and housing (including electricity and energy needed for heating and cooling), mobility (including air and automobile), food and nutrition, consumption and financial investment? Which role could sustainable lifestyles play in supporting such a paradigm in these areas – and what drives them? How are the SDGs – in particular SDG 12 – implemented? How could the multilateral UNFCCC process or bilateral Indo-German cooperation foster sustainable lifestyles?

A joint project by Germanwatch and Climate Action Network South Asia (CANSA) India seeks to address these questions in order to improve the chances of implementing locally adjusted sustainable lifestyles in prioritised fields (electricity, heating and cooling, air and road transportation, food and nutrition, consumption and investments?) – inspired by German and Indian as well as Indo-German civil society dialogues. We seek to formulate recommendations for decision makers on fostering frameworks for modern sustainable lifestyles of the global middle classes based on these dialogues.

In the **definition of sustainable lifestyles** used in this paper, we follow the pre-dominant definition in the literature: *Sustainable lifestyles are those that reduce the ecological footprint (sometimes further simplified to the CO_2-footprint) in order to stay within the ecological guardrails*[3]. We do acknowledge however that a wider definition that also concerns social and economic consideration would be more suitable in the context of transformational change. Our definition tends to fall short on a) socio-economic aspects like global justice and social needs, b) economic conclusions regarding future economies as well as c) self-development. We note that a definition of sustainable lifestyles as a "responsible living with our total surrounding and ourselves" would be more suitable – or as UNEP and UNDESA put it:

"A sustainable lifestyle means rethinking our ways of living, how we buy and how we organize our everyday life. It is also about altering how we socialize, exchange, share, educate and build identities. It means transforming our societies and living in harmony with our natural environment. As citizens,

[1] See SDG12 (p. 27) in UN, 2015: Transforming our World: The 2030 Agenda for Sustainable Development, https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

[2] See the preamble (p. 2) of the Paris Agreement, UNFCCC, 2015: Paris Agreement, http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

[3] See for example WBGU, 2011: World in Transition – A Social Contract for Sustainability, ISBN: 978-3-936191-37-0

at home and at work, many of our choices – on energy use, transport, food, waste, communication and solidarity – contribute towards building sustainable lifestyles."[4]

Nonetheless, in order to provide a manageable scope of analysis for this short paper, we are using the definition focused on environmental impacts.

The focus of this paper lies on **urban middle classes of Germany and India**. In a situation where the Western world largely sets the model for middle class consumption behaviour, worldwide lifestyles are expected to become ever more alike. In this context, an Indo-German exchange on sustainable lifestyles has the potential to debate Western influences – and in turn let the Indian norms enrich the existing islands of sustainable lifestyles in Germany for mainstreaming more sustainable living in both countries.

[4] Task Force on Sustainable Lifestyles, 2010: Report of the Marrakech Task Force on Sustainable Lifestyles led by the United Nations Environment Programme (UNEP) and the United Nations Department of Economic and Social Affairs (UNDESA)

1 Socio-economic and cultural context of sustainable lifestyles in Germany and India

How far can I minimize my ecological footprint in Germany? What are the best options for sustainable living in India? The socio-economic and cultural context determines to a considerable extent the answer to both questions. It determines which options for sustainable lifestyles are available. Political and socio-economic structures as well as values, norms and traditions in the respective cultures influence, limit or enable sustainable lifestyle choices. A closer look at the respective circumstances in India and Germany is therefore necessary to develop suggestions towards the mainstreaming of sustainable lifestyles in the two very different countries. However, as we deal with sustainable lifestyles in Germany and India, it is not only development status of the countries' economies that influence people's lifestyle decisions. Psychologists have explained that consumption choices are mainly socially influenced (not ecologically): Traditional and modern values set norms; peer-behaviour influences aspirations, trends and status symbols; advertisement and marketing as well as individual self-fulfilment guide our decisions[5]. Pure awareness of the planetary boundaries, social justice needs and responsibility for future generations is generally not enough to turn towards sustainable behaviour in an every-day decision-making process. While in India sustainable lifestyles can be received with great suspicion regarding compromising personal comfort (or luxury) and the country's development, in Germany many would like to hold on to believing that technology improvements will make lifestyle changes unnecessary[6]. Undoubtedly, the above influencing factors play out fundamentally different in the Indian and German contexts and circumstances.

Leading by example is an effective way in both countries to inspire others as peers and social comparison influence others. Models that set norms, especially for youngsters, are found on social media. Advertisement and marketing certainly influences both Indians and Germans in their consumption, too.

In an Indo-German discussion, personal consumption should be contextualized in terms of the different economic status as well as personal needs and aspirations in the two countries. Survival requires a basic level of consumption. Once the basic needs are fully met, a zone of comfort is reached. In Germany, many are aware of, have theoretically accepted or personally experienced that happiness or fulfilment do not increase endlessly the more one consumes (see figure 1). For the Indian middle class, the existence of a consumption threshold soon after which fulfilment not necessarily increases might seem counterintuitive for many. On the other hand, this threshold – the point of consuming enough – followed by a non-materialistic gain in happiness might be easier to explain in India than in Germany. Participation in the society or practices like meditation – also religious rituals – can further increase fulfilment levels even if consumption is not exceeded after a certain level of comfort. Attitudes and characteristics that exist in both cultures and support non-materialistic happiness are responsibility, generosity, mindfulness, self-reliance, social engagement, authenticity, readiness to help others, living in the moment, life experience and grate-

[5] Förster, Jens, 2015: Was das Haben mit dem Sein macht – Die neue Psychologie von Konsum und Verzicht, Pattloch Verlag, ISBN: 978 3 629 13069 3

[6] GIZ, 2015: Sustainable lifestyles – Pathways and choices for India and Germany, www.giz.de/en/downloads/giz2015-en-IGEG_3_sustainable-lifestyles.pdf

fulness[7]. These attitudes and characteristics can lead individuals to choose voluntary simplicity – living a simpler life with fewer materialistic desires – as not only the Buddha but also Socrates and other thinkers advocated for[8].

Put simply, the striving of becoming a better person in all social and environmental aspects is a supportive underlying attitude for living more sustainably.

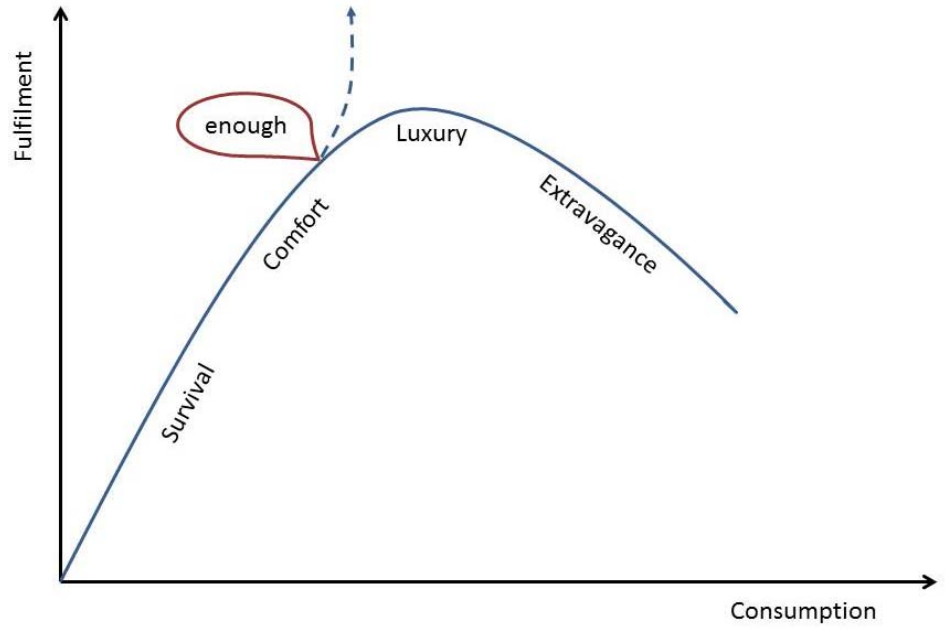

Figure 1: Fulfilment versus Consumption, own depiction[9]

It is essential to notice that this paper seeks to provide options for sustainable living by offering different elements of a sustainable lifestyle to select from. The local context and personal circumstances set the frame for every individual's choice resulting in a rich diversity of sustainable lifestyle options. There is no must to follow a strict vegan diet or abstain from all personal vehicle utilisation. Sustainable lifestyles reasonably guide a person to follow certain principles like resource efficiency and respect for fellow-beings – leaving freedom for personal choice – rather than following a prescribed recipe.

However, in order to deserve the prefix "sustainable" one's lifestyle should significantly reduce the ecological impact in the five main areas buildings and housing (including electricity and energy for heating and cooling), mobility, food and nutrition, consumption and financial investment (see chapter 2).

[7] Koglin, Ilona & Rohde, Marek, 2016: Und jetzt retten wir die Welt!, Franckh-Kosmos Verlags-GmbH & Co. KG, Stuttgart, ISBN: 978 3 440 15189 1

[8] Martin, Mark W., 2012: Happiness and the Good Life, Oxford University Press, ISBN: 978-0199845217

[9] Based on: Kahneman, D. and Deaton, A., High income improves evaluation of life but not emotional well-being in PNAS, September 21, 2010 | vol. 107 | no. 38 | 16489–16493
and Chancellor, J. and Lyubomirsky, S., 2014: Money for Happiness: The Hedonic Benefits of Thrift. In Consumption and Well-Being in the Material World, edited by Mariam Tatzel, New York: Springer

1.1 Germany

On 24th of April, Germany reached its national overshoot day for the year 2017 [10] – 100 days earlier than the global overshoot day of 2017! These days mark the dates when a country or respectively all countries (Earth Overshoot Day) have exhausted nature's budget for the year[11]. This extensive overuse of natural resources illustrates Germany's overconsumption. It also indicates other typical characteristics of industrialized countries like extraordinary ecological damage – as high absolute and per-capita greenhouse gas emissions – usually based on high annual income. Middle class in Germany can be defined as earning an income of around 80 to 150 % of the average income (37.103 Euro before taxes in 2017). The monthly income after taxes of middle class persons in Germany in 2014 was 1410 to 2640 Euros for a single, 2110 to 3960 Euro for a couple, 2530 to 4750 Euro for a family with one and or 5540 Euro to 2950 Euro for a family with two children[12]. The middle class accounts to roughly half of Germany's 82 million population; its size is relatively stable.

Not only the ecological footprint of Germany and its population is high – so is the ecological awareness around topics like climate change, the chronic state of the earth's forests and oceans, biodiversity and air pollution[13]. Also in political debates, the "Energiewende" (energy transition) the 2020, 2030 and 2050 climate targets and other sustainability topics are very present. Germany has a Sustainable Development Strategy[14], which is aligned with the 17 Sustainable Development Goals (SDGs) to focus on Germany's global responsibility. However, neither the awareness nor the policy efforts have yet lead to a broad shift towards less resource-intensive consumption and more sustainable lifestyles.

Nevertheless, in regard to personal lifestyles, some Germans explore niches of sustainable living, be it the renaissance of urban gardening and the repair and share culture among the younger generations or the focus on healthy and ecologically acceptable living among best-agers. When interested in urban sustainable lifestyles one should not overlook the pioneers of sustainability from within civil society in Germany: the transition towns – energy and food self-sufficiency and decentralization grassroots-projects first initiated in the UK. They provide best practices and lessons learnt for a less resource-intensive way of living and support the potential shift from niche to mainstream.

The change of attitudes and behaviours, habits, norms and values in consumption and general decision-making for sustainable lifestyles involve a conscious act that requires self-refection and the courage to stand up against disadvantages in society or economy. This is often frowned upon by the general customer as abstinence, which might be why many German consumers might buy green-labelled products to sooth their conscience but not step further out of their comfort zone and make changes towards less consumption and resource utilisation. The advantages of living more sustainable lives – among many cost-effectiveness, health and quality time – are yet rarely considered. Change is often avoided by the trust in improved technologies that will do the job[15].

[10] Germanwatch press release, 2017: Deutscher Erdüberlastungstag: Ab Montag machen wir ökologische Schulden, www.germanwatch.org/13767
[11] See Global Footprint Network's Earth Overshoot day at www.overshootday.org
[12] Sozio-ökonomisches Panel, IW Köln 2017
[13] BMUB & UBA, 2017: Umweltbewusstsein in Deutschland 2016, www.umweltbundesamt.de/sites/default/ files/medien/376/publikationen/umweltbewusstsein_deutschland_2016_bf.pdf
[14] The Federal Government, 2016: German Sustainable Development Strategy, www.bundesregierung.de/Content/DE/_Anlagen/Nachhaltigkeit-wiederhergestellt/2017-06-20-nachhaltigkeit-neuauflage-engl.pdf?__blob=publicationFile&v=2
[15] BMUB & UBA, 2017: Umweltbewusstsein in Deutschland 2016, www.umweltbundesamt.de/sites/default/ files/medien/376/publikationen/umweltbewusstsein_deutschland_2016_bf.pdf

A mainstreaming of sustainable lifestyles raises questions that go beyond personal consumption choices. It needs to be understood how political and economic frameworks that guide or limit consumption choices interplay with personal decisions including the rebound effect. The whole-product circle including resource extraction, production, transport, utilisation phase and disposal needs to be considered when implementing effective sustainable frameworks. Mainstreaming of sustainable lifestyles will be possible only through interplay between political guidelines, the private sector and society including individuals. It raises questions on post-growth scenarios for the economy, which were explored, but not answered, in Germany by the Parliamentary Study Commission on growth, wellbeing and quality of life[16].

1.2 India

India is home to one-sixth of the world's population and densely populated over the whole dimension of its subcontinental size. As one of the fastest growing economies, India faces a dilemma in striving for sustainable development. Its primary objective remains to provide stable livelihoods and employment to its people besides the promises of a 10 % GDP growth. India‘s national climate plan, the Nationally Determined Contribution (NDC), aims at lowering the emissions intensity of the GDP by 33 to 35 % by 2030 below 2005 levels, at increasing the share of non-fossil based power generation capacity to 40 % of installed electric power capacity by 2030 and at creating an additional (cumulative) carbon sink of 2.5–3 $GtCO_{2e}$ through additional forests and tree cover by 2030. Prime Minister Narendra Modi’s devise for a “Zero Effect & Zero Defect” business is the evidence for the sustainable development challenge between economic growth and ecological responsibility. At the same time, India prepared many developmental schemes not only for combating climate change but also for meeting the Sustainable Developmental Goals (SDGs).

It seems difficult – if not impossible – to accurately measure the size of the Indian middle class. Mumbai University economists estimate that the new middle class, meaning individuals spending between US$2 and US$10 per person per day, has doubled to 600 million people between 2004 and 2012 and thus accounts to half the Indian population. The growth was found to have mainly occurred in the lower middle class. This lower middle class is often engaged in job occupations similar to those of the poor, whereas the upper middle class works in areas stretching from the traditional service to new knowledge services[17].

India has a history of low-carbon lifestyles. In the run-up to the Paris Climate Summit in 2015, it was internationally claimed that sustainable lifestyles have traditionally been a core component of the Indian culture, deeply rooted in the society’s values[18]. And as often repeated: “These need to be encouraged, rather than replaced by more modern but unsustainable practices and technologies”[19]. It is indeed important to notice that traditional Indian lifestyles certainly were low-carbon (as were all countries’ traditional lifestyles) but not necessarily sustainable – for example in the sense of gender equality (as in many countries). Nevertheless, India’s diverse cultures still to a large extent share principles such as efficient resource utilisation – irrespective of one’s economic situation. To fulfil their basic needs, people greatly do not depend on or chose high-energy-based

[16] Deutscher Bundestag, 2013: Schlussbericht der Enquete Kommission Wachstum, Wohlstand und Lebensqualität, http://dip21.bundestag.de/dip21/btd/17/133/1713300.pdf

[17] Sandhya Krishnan, Neeraj Hatekar, 2017: Rise of the New Middle Class in India and Its Changing Structure in Economic&Political Weekly, Vol. 52, Issue No. 22, 03 Jun, 2017

[18] NDTV, 7.9.2015: Sustainable lifestyles can mitigate climate change challenge: Prakash Javadekar: www.ndtv.com/india-news/sustainable-lifestyle-can-mitigate-climate-change-challenge-prakash-javadekar-1215178

[19] MoEFCC, 2015: Climate friendly lifestyles practiced in India, www.moef.gov.in/sites/default/files/Lifestyle%20Brochure_web_reordered.pdf

products, but rely on individual craftsmanship[20]. Broken items are more frequently repaired instead of replaced by new ones and objects are valued during their whole life length. Several formalized doctrines, like the yogic principle of aparigraha, suggest a non-attachment to materialistic possessions and using only what is necessary, which might help explain how these values are rooted in Indian society. Thus, Indians were the top-scoring environmentally sustainable consumers in the 2014 National Geographic/GlobeScan Consumer Greendex[21], which compares consumers' behaviour in the 14 largest economies. This indicates how traditional and environment-friendly practices continue to be a part of people's lives while lifestyles modernize in India.

On the other hand, there is a need to discuss how more resource-intense lifestyles are seen as attractive within Indian society, particularly by the middle class. More and more Indians follow their peers in modern lifestyles by owning two-wheelers and cars, TV and music equipment, certainly smartphones, preferring certain brands for clothes and following an eating-out culture. "Western" lifestyles influence these aspirations and status symbols to a large extent.

[20] MoEFCC, 2015: Parampara - India's culture of climate friendly sustainable practices, www.ceeindia.org/cee/Parampara.html

[21] National Geographic/GlobeScan, 2014: Greendex 2014: Consumer Choice and the Environment – A Worldwide Tracking Surve, https://images.nationalgeographic.com/wpf/media-content/file/NGS_2014_Greendex_Highlights_FINAL-cb1411689730.pdf

2 Five areas at the core of sustainable lifestyles

We have identified five areas that are crucial components of our lifestyles and will provide a useful focus for the comparison of the state of sustainable lifestyles in India and Germany. The first three of these five areas account for about 92 % of the ecological damage including greenhouse gas emissions of private persons in Germany[22] and about of 88 % Indian material consumption on individual basis[23]: **Buildings and housing,** including electricity, appliances and energy for heating and cooling, is captured in chapter 2.1 on buildings, household and electricity. **Mobility**, in particular air traffic and auto mobility, is considered in chapter 2.2. **Food and nutrition** is discussed in chapter 2.3. In addition, broader **consumption** choices have an impact on the sustainability choices. We therefore also considered two examples that do not necessarily account for large amounts of greenhouse gas emissions but mirror the underlying values for consumption decisions in modern societies, namely clothing (chapter 2.4.1) and leisure and tourism (chapter 2.4.2). Lastly, transitional change for sustainable lifestyles is achieved only if the **financial flows** are adjusted. For members of the upper middle class with significant disposable incomes, how they invest their wealth is a major factor in determining which impact they have on the environment (see chapter 2.5 on investments).

The following subdivisions provide insights in current trends, best examples for sustainable lifestyles and their barriers across the selected areas in both countries – highlighting different circumstances that result in differing priorities, needs, aspirations, access to means and suitable approaches. These indicate opportunities for interventions to set the right frameworks to further foster sustainable living.

The chapter closes with suggestions for effective elements of sustainable lifestyles in each the German and the Indian middle classes.

2.1 Buildings, household and electricity

Germany

The main challenges to address for sustainable lifestyles in the German housing sector are (i) increasing use of space per person due to commonly small number of household members; (ii) old building substance with weak insulation leading to loss of energy and large heating requirements during German winters and (iii) growing aspirations in terms of appliances and interior that consumes electricity and other resources. The living space per person, for example, has increased from 39.5 m^2 in 2000 to 46.2m^2 in 2015[24]. 30 % of heating energy loss occurs through the walls of an average building in Germany[25]. Therefore, living space size, building material and insulation layer can be huge energy savers. Also, the German aspirations for appliances and interior are still rising:

[22] Ökoinstitut e.V., 2007: Stoffstromanalyse relevanter Produktgruppen - Energie- und Stoffströme der privaten Haushalte in Deutschland im Jahr 2005

[23] WBCSD, 2015: Sustainable Lifestyles Report India, www.wbcsd.org/Clusters/Sustainable-Lifestyles/Resources/Sustainable-Lifestyles-Report-India

[24] Statistisches Bundesamt, 2016: Bautätigkeit, Wohnungsbestand in Deutschland

[25] Energieheld 2015: Die durchschnittlichen Wärmeverluste eines Hauses www.weforum.org/agenda/2017/10/what-india-can-teach-the-world-about-sustainability/

comfort or even luxury and social acceptance are decisive forces that lead to overconsumption of appliances. Mobile phones, computers, TVs and sound systems are generally replaced faster to be up-to-date with the newest technology[26].

Against these main trends, positive examples for sustainable lifestyles exist: Examples for best practices in the housing sector are all forms of **co-housing** like collectives or multi-generation living. Co-housing requires less living space per person and fosters the social interaction and potentially personal well-being. If solitude is preferred, a so-called "tiny house"[27] can be an option. Households in Germany have the opportunity to select a **provider of renewable electricity** like EWS Schönau, Lichtblick, Greenpeace Energy and many others that provide electricity from renewable sources. Unfortunately, only 10.51 million (7.4 %) of Germany's population purchased electricity from renewable sources in 2017[28]. However, renewable energy generation by private persons (solar panels on the own rooftop or solar/wind cooperatives) became feasible on a large scale by the introduction of feed-in tariffs that guarantee fixed energy prices for renewable energy fed into the national grid over some 25 years. Similarly, subsidies for **insulation of private buildings** have supported an improved energy performance of households – but progress is still too slow.

Labels for energy efficient appliances according to the relevant EU guideline help the consumer with purchase decisions. Similar labels have been adopted in several countries, including India.

German **waste management** systems set high standards, both in household waste separation, collection, reuse and recycling and treatment. Special wastes treatments like for e-waste are common practice. The law on recycling economy (Kreislaufwirtschaftsgesetz, 1994) aimed at shifting Germany from disposal-waste management to a circular-system-waste management. The implementation could be better on track: only 49 % of Germany's household plastic waste was recycled in 2015[29]. **Packaging-free grocery stores** slowly establish themselves in cities across Germany[30], providing true meaning to "reducing" waste. This is urgently needed as Germany's plastic waste is still increasing year by year.

India

A 2010 McKinsey study stated that in India 70 % of buildings are still to be constructed – due to urbanisation, population and economic growth[31]. Concrete and steel are used as reinforcements in the conventional construction approach. Thus, the Indian construction sector is a major contributor towards carbon emissions and water over-consumption. **Green buildings**, however, can be key to a more sustainable construction sector because their climate-fit design and construction material choice (lesser cement, etc.) and the activities in buildings are significant contributors to energy- and water-related sustainability. Especially cooling costs can be reduced by local climate-adjusted architecture such as avoidance of large glass surface that heat up the building at sun-

[26] UBA, 2015: Umwelt, Haushalte und Konsum, https://www.destatis.de/DE/ Publikationen/Thematisch/ UmweltoekonomischeGesamtrechnungen/Broschuere_UBA_Daten_Zur_ Umwelt.pdf?__blob=publicationFile

[27] The tiny house movement originated as an architectural and social movement to advocate simple living in small homes – in Germany from 7 to more or less below 30m2. See Mitchell, 2014:Tiny House Living: Ideas for Building and Living Well in Less Than 400 Square Feet

[28] Statista, 2018: Bevölkerung in Deutschland nach Bezug von Ökostrom von 2014 bis 2017 https://de.statista.com/statistik/daten/studie/181628/umfrage/bezug-von-oekostrom/

[29] WI, 2017: Das Plastik-Problem, https://www.iwd.de/artikel/das-plastik-problem-368426/

[30] Utopia, 2018: Verpackungsfreier Supermarkt: Einkaufen ohne Verpackung, https://utopia.de/ratgeber/verpackungsfreier-supermarkt

[31] McKinsey Global Institute, 2010: India's urban awakening, https://www.mckinsey.com/~/media/McKinsey/ Global%20Themes/Urbanization/Urban%20awakening%20in%20India/MGI_Indias_urban_awakening_full_report.ashx

shine. Green buildings are still a comparably new concept in India and developers are not necessarily willing to invest in sustainable housing. Similarly, future owners look for low-budget options, often not realizing the long-term gains of investing in sustainable housing options such as in operational costs or an increase in asset value over traditional buildings. The ECBC (Energy Conservation Building Code) by the Bureau of Energy Efficiency, Government of India, is still in the voluntary phase. Their full implementation of ECBC has the potential to reduce energy consumption in buildings by 25 to 40 %[32].

In 2008, the average living space across India was 9.6 m^2 per person in rural areas and 11 m^2 per person in urban areas[33]. These numbers make the population density recognisable and it is expected that the urban middle class of India will opt for larger living spaces, which e. g. gated community housing offers in cities suburbs.

The Indian residential sector shows great electricity saving potential by the use of **efficient appliances** – many are supported by energy efficiency labels. In recent years, the potential energy saving of lighting has been started to be addressed by the introduction of LED lights. LEDs reduce the electricity need and thereby the costs significantly. Also, the use of appliances can make a difference: turning down the air-conditioning to a 2°C higher temperature in combination with a fan has the same cooling effect but saves considerable amounts of energy. Sustainability considerations in households also include water-saving methods towards a two-pronged approach, i. e. minimising the demand (e. g. by use of water efficient fixtures like low flow faucets and dual flush WCs) and optimising the supply by recycling and reusing sewage water. Rainwater harvesting is a winner in modern cities, too.

The lion share of India's electricity is generated in coal power plants. Slowly but steadily, private household solar rooftops are perceived as economically vital options. Around 1,000 rooftop installers have been certified by the Ministry of New and Renewable Energy for faster and quality solar rooftop installations[34]. Cities like Gandhinagar or Bangalore have set incentives for **solar PV or solar thermal**. While solar panel prices keep dropping, complicated regulations and the lack of standards in procedures around e. g. selling the solar electricity to the distribution companies and other difficulties hinder the increase in private households' solar rooftop installations.

India experiences an increase in waste generation but household waste minimization and **waste management** programs are still in their early stages. Composting, segregation at source, reuse and recycling – even upcycling – as well as waste to energy solutions are to be explored and improved by interested citizens, NGOs, waste industry or city authorities.

2.2 Mobility

Germany

The necessary transition of the transportation sector (Verkehrswende) includes measures of fuel switch, enhanced efficiency, change in mobility infrastructure and behaviour. Especially in the "car country" Germany the road towards the Verkehrswende is still long. In 2016, 18 % of Germany's annual emissions were transportation emissions, which is 5 % more compared to the 1990 base

[32] TERI, 2014: Energy Efficiency in Building Sector in India: Practice, policies and programs, www. energyefficiencycentre.org
[33] Times of India, 2008: 33%of Indians live in less space than US prisoners, https://timesofindia.indiatimes.com/india/33-of-Indians-live-in-less-space-than-US-prisoners/articleshow/3753189.cms?referral=PM
[34] Energyworld, 2017: India's rooftop solar sector - A success story but challenges remain, https://energy. economictimes.indiatimes.com/energy-speak/india-s-rooftop-solar-sector-a-success-story-but-challenges-remain/2465

year. Despite the German transportation sector operating against the general mitigation effort, Germany could reduce its total emissions by 349 tCO_2eq between 1990 and 2015[35]. It is high time for the German transportation sector to join the mitigation effort, which would require the 45.8 million car owners (684 cars per 1000 Germans in 2017)[36] and the car producing industry that accounts for 12 % of Germany's GDP, to rethink their behaviour and business models towards electro mobility, car sharing, public transportation and changed mobility habits. But until today, Germany has no roadmap to achieve the targets of 40 % greenhouse gas reduction in the transportation sector by 2030.

However, German cities provide sustainable transportation options. The **public transportation** sector has reported growing passenger numbers over the last decade: over 30 million people in 2016[37]. Many also use the **railways**: the average per person train km travelled in 2014 was 1,115 km[38]. Companies like "Flixbus" that offer affordable **intercity bus-routes** are becoming increasingly popular. The infrastructure of busses, trams and metros that enables car-less living in German cities improves gradually. Additionally, due to pressure from the population, **bicycle** lanes make biking safe and many people use the own bicycle on the way to work as their daily sports session or use shared bikes for short distances. **Carrier bikes** are true replacements for cars. The "Cycle Autobahn" in the Ruhr region provides space for daily safe and attractive high speed cycling. **Car sharing** platforms like "Blablacar", "Mitfahrzentrale" and providers like "Car2Go" are affordable, widely spread and easy to use for smartphone holders. In 2017, the main German cities showed an availability of 0.94 to 2.71 shared cars per 1,000 inhabitants and 1.715.000 users were registered with about 150 available German car sharing companies[39]. For the promotion of car sharing new legislation offers free parking for car sharers. For those who despite all these climate-friendly options chose to drive a car, **hybrid vehicles** and **electro mobility** are already available today.

The biggest environmental issue in the German transportation sector is the air traffic, which is over-used both professionally and privately. Especially short-distance travels by plane could easily be avoided by taking the train, avoiding thousands of kg CO_2 per travel. Initiatives like atmosfair.de offer **offsets for the flight emissions** and thereby compensates some of the climate damage, but this is a mere short-term solution. What really would make a difference is a change of the mind-set that stops promoting long-haul travels as a status symbol and fond habit – which could also be achieved by monetary triggers like a kerosene tax.

[35] UBA, 2017: Nationales Treibhausgasinventar 2017, www.umweltbundesamt.de/themen/klima-energie/klimaschutz-energiepolitik-in-deutschland/treibhausgas-emissionen/emissionsquellen

[36] Kraftfahrtbundesamt, 2017: www.kba.de/DE/Statistik/Fahrzeuge/Bestand/bestand_node.html;jsessionid=F0D65D8986692618CC646C9F1FE5E0B0.live21302

[37] Statistisches Bundesamt, 2017: Jahr 2016: Fahrgastrekorde im Nah- und Fernverkehr mit Bussen und Bahnen, www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2017/04/PD17_124_461.html

[38] Allianz pro Schiene, 2015: Durchschnittliche zurückgelegte Bahnkilometer, www.allianz-pro-schiene.de/themen/personenverkehr/daten-fakten/

[39] Bundesverband CarSharing e.V., 2017: CarSharing-Städteranking 2017 https://carsharing.de/alles-ueber-carsharing/carsharing-zahlen/carsharing-staedteranking-2017

India

In 2015, India showed a low car ownership of only 32 cars per 1,000 people[40]. But then, middleclass Indian's number one aspiration is to own a car. The general preference is a sports utility vehicle (SUV)[41]. Besides the comfort, SUVs offer higher safety levels for drivers and passengers – considering that 18 % of the world's road deaths occur in India with 1 % of the world's cars[42] – safety is a major concern of a commuter in an Indian city. The **introduction of small segment cars** such as Tata Nano in the Indian market is an attempt to address pollution, space and prestige issues. Still, Indian cities struggle with intense traffic congestion and transport-borne pollution. The Government of India has announced an ambitious target of **all-electric vehicle** sales by 2030[43]. Electric vehicle sales are still at an early emerging stage in India but the ambitious target shows that the gradual dependence on the fossil fuel combustion engine is bound to decrease. At the same time, the renewable energy generation has to increase to make e-vehicles sustainable in the energy consumption.

Government-provided **public transport services** in the form of bus- and rail-based transport exist in only 65 cities and urgently need to widen their capacity**.** Where there are available public transport services, they are often inadequate and unreliable. Additionally, the Indian weather conditions during hot summers and rainy monsoons imply special needs for the public transportation systems. So do security concerns, especially for women.

Several major cities in India take steps on sustainability in transport systems like in Delhi where 15-year-old commercial vehicles were taken off the road and transit freight traffic passing through Delhi is restricted by imposing an **environment cess** on INR 2,000 (EUR 25) per entry. Nearly 300,000 buses, three-wheelers and a great number of taxis and private cars nowadays run on Compressed Natural Gas (CNG), which significantly reduces air pollution and greenhouse gas emissions. Bus Rapid Transport Systems (BRTS) have been introduced in a couple of large cities like Ahmedabad, Delhi and Pune. Car services such as OLA and Uber as well as rickshaws are in everyday use for urban travels.

Furthermore, city planning experiments with **dedicated lanes for pedestrian and bicycles** with which citizens can cover short distances. There are also attempts to change perceptions of using cycles and public transport as conscious citizens. The odd-even scheme of Delhi (cars with license plates ending on an odd and even number are allowed to be used on alternate days), which was tested to reduce the unbearable levels of air pollution in early 2016, had a great impact on the population's openness to explore alternatives to private transportation like the local metro. However, the inefficient and poorly networked public transport system could not sustain such experiment[44].

India Railways is the world's largest railway system under a single management. At any given time, about 5 % of India's population is on the move on its trains (22.2 million passengers daily

[40] Ernst & Young, 2016: Making India a world class automotive manufacturing hub, http://www.ey.com/Publication/vwLUAssets/EY-making-India-a-world-class-automotive-manufacturing-hub/$FILE/EY-making-India-a-world-class-automotive-manufacturing-hub.pdf

[41] Livemint, 2016: Car buyers in India getting younger, changing cars more frequently, http://www.livemint.com /Money/G7ugDvBLF2e4rqBvFM1VtN/Car-buyers-in-India-getting-younger-changing-cars-more-freq.html

[42] WBCSD, 2015: Sustainable Lifestyles Report India, www.wbcsd.org/Clusters/Sustainable-Lifestyles/Resources/Sustainable-Lifestyles-Report-India

[43] Times, 2018: Charge: India in ambitious drive for all cars to be electric by 2030, www.thetimes.co.uk/article/charge-india-in-ambitious-drive-for-all-cars-to-be-electric-by-2030-wrs8gr0nq

[44] Down to Earth, 2017: With just 272 buses per million people, how can odd-even rule in Delhi be successful?, www.downtoearth.org.in/news/with-just-272-buses-per-million-people-how-can-delhi-adhere-to-odd-even-rule--59065

and 8.1 billion annually)[45]. Nevertheless, cheap flights are available and become more attractive than train journeys. This is problematic from an environmental point of view. The domestic air traffic has grown in 2017 to be the third largest domestic aviation market after the USA and China[46]. Passenger numbers increased by almost 17 % between 2016 and 2017[47]. The growth in the sector can be attributed to the boom in low-cost airlines, to increased income levels and to aspirations of Indian society to travel by air. **Offsets** of varying quality are widely available.

2.3 Food and nutrition

Germany

In 2015, about 15 % of German consumers were considered associated with the growing "Lohas" trend (lifestyle of health and sustainability) which aims at healthy eating and fit living but also seeks to improve the world market through targeted consumption of **organic products and fair trade goods**[48]. Still, only 4.7 % of the total food sales were organic in 2016[49] and Germans remain heavy meat eaters (on average Germans consumed 60.3 kg meat per person in 2016[50]). Only 1 % of the population consumes no meat at all through a **vegetarian or vegan diet**. Organic and fair labels exist to guide consumer choices. However, about 65 % of the consumers at an age of 19 to 59 years buy their food mainly at the ordinary super market (mainly non-organic, non-labelled food). 6 % buy their food in organic stores[51] – the politically difficult transition to a sustainable agriculture certainly would benefit from stronger consumer demand.

More than 18 million tons of food are wasted per year in Germany. This equals almost a third of the total food consumption (54.5 million tons) and half of this amount of **waste could be avoided**. The biggest responsibility for food wastage lies with the consumer: S/he is responsible for 5 million tons of the avoidable waste that mainly goes to the bin fully unused or as leftover[52]. Noteworthy is not only the wasted food itself but also the wasted packing, transportation and production that is implied in wasted food.

The book and film "Essensvernichter" („Taste the waste")[53] about food waste enjoyed great public and political response. The publishers' goal was to compile approaches for food waste avoidance and sustainable food consumption for mainstreaming in Germany. The currently most widespread approach to avoid food waste is **food sharing**: products that are unwanted, in excess or about to expire are shared with people through free networks. Major examples are the "Deutsche Tafel e.V."

[45] 24coaches, 2016: Indian Railways: Facts and Figures, https://24coaches.com/indian-railways-facts-and-figures/
[46] Economic Times, 2017: India's air traffic growth to be at 8-10% over next 2 years, //economictimes.indiatimes.com /articleshow/61869132.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst
[47] IBEF, 2017: www.ibef.org/industry/indian-aviation.aspx
[48] Statista, 2015: Anteil der Verbraucher mit umwelt- und sozialethischer Konsumhaltung (LOHAS) in Deutschland in den Jahren 2007 bis 2015, https://de.statista.com/statistik/daten/studie/270686/umfrage/haushalte-mit-umwelt-und-sozialethischer-konsumhaltung-in-deutschland/
[49] Bund Ökologischer Lebensmittlewirtschaft, 2017: Zahlen, Daten Fakten die Bio-Branche 2017, www.boelw.de/fileadmin/pics/Bio_Fach_2017/ZDF_2017_Web.pdf
[50] Statista "Fleischkonsum in Deutschland",
[51] BMEL, 2017: Deutschland, wie es isst, Der BMEL-Ernährungsreport 2017, www.bmel.de/SharedDocs/Downloads/Broschueren/Ernaehrungsreport2017.pdf ?__blob=publicationFile
[52] WWF, 2015: Das große Wegschmeißen, www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF_Studie_ Das_grosse_Wegschmeissen.pdf
[53] V. Thurn and S. Kreutzberger, 2011: Die Essensvernichter (Taste the Waste), KiWi, ISBN: 13: 978-3462044546

and “foodsharing.de” with 60.000 and 27.000 volunteers involved. The illegal dumpster diving – searching through supermarkets' waste containers for edible food – is practiced as well.

The phenomenon of (organic) **urban gardening** is becoming increasingly popular in German cities. It includes the usage of public and private urban spaces for vegetable and fruit cultivation: balcony and rooftop gardening, garden plots, eatable city or apps on publicly available fruit trees are only few examples. The aims are to eat self-grown organic food, skip transportation and distributors in the food-chain, close the gap between producer and consumer by becoming “prosumers” and therefore enable more sustainable food consumption. Another model with the same motivation is the so called **“solidary agriculture”**. Members share the ownership of a piece of land, where they cultivate fruits and vegetables themselves or support the project financially.

Germans follow a quite distinct restaurant and eating-out culture. 43 % of the Germans eat out once a week; 74 % go to a restaurant once a month[54]. More and more to-go offers and online orders are bought, creating additional waste[55].

Factors that need improvement in order to enable a sustainable nutrition shift in society include: better product information (like virtual water, GMO use, transportation, and many more), shift to less packaged and processed food; bigger presence of sustainable nutrition in mainstream food supply; culture of valuing food (high quality, willingness to pay a fair price, no wastage).

India

The traditional food of India is widely appreciated for its diversity in **home-made seasonal and regional dishes of fresh vegetables** and fabulous herbs and spices. The cooking style varies across the regions and is largely divided into South Indian and North Indian cuisine. The staple food in India includes wheat, rice and pulses. A large share of the Indian population follows a vegetarian diet. As much as 42 % of the Indian households are **vegetarian**. The others are less strict vegetarians or non-vegetarians[56]. The meat consumption in India between 2011 and 2013 was 3.3 kg per capita, which is only a fractional amount of the global average of about 43 kg[57]. The current trend of growing meat consumption[58] occurs as many – especially young consumers – abandon their vegetarian diet due to an increased desire for meat. This also reflects the increased calorie and protein consumption in the urban areas. Nutritional deficiency is seldom witnessed in the middle classes.

India’s urban segment of young restaurant visitors is dominated by mainly white and blue collar workers. Over the last few years, restaurants, cafes and international fast-food outlets have multiplied in India and eating out has become a frequent time-pass (once per week or more often[59]), particularly among younger consumers. Despite **growing awareness of health and wellness** among Indian consumers, consumption of fast food does not decrease. International food chains like Pizza Hut, Dominos, McDonalds and KFC and Indian fast food restaurants are omnipresent on

[54] BMEL, 2018: Deutschland, wie es isst - Der BMEL-Ernährungsreport 2018, www.bmel.de/SharedDocs/Downloads/Broschueren/Ernaehrungsreport2018.pdf?__blob=publicationFile
[55] BZfE, 2017: “to-go” ist Trend, https://www.bzfe.de/inhalt/to-go-ist-trend-30288.html
[56] MoEFCC, 2015: Climate friendly lifestyles practiced in India, http://www.moef.gov.in/sites/default/files/Lifestyle%20Brochure_web_reordered.pdf
[57] OECD &Food and Agriculture Organization of the United Nations. 2014: OECD-FAO Agricultural Outlook 2014, OECD Publishing. http://dx.doi.org/10.1787/agr_outlook-2014-en
[58] Devi, S. M., Balachandar, V., Lee, S.I. and Kim, I. H., 2014: An Outline of Meat Consumption in the Indian Population - A Pilot Review, Korean J Food Sci Anim Resour. 2014; 34(4): 507–515.
[59] WBCSD, 2015: Sustainable Lifestyles Report India, www.wbcsd.org/Clusters/Sustainable-Lifestyles/Resources/Sustainable-Lifestyles-Report-India

this highly lucrative market. Also due to this influence, tasty food is increasingly associated with processed food[60]. This is leading to unhealthy diets – in direct contrast with more traditional and healthy food habits of the past and some healthy options in the modern market. On the other hand, a considerable Indian customer group also moves towards **healthy eating**. About 5 million people are estimated to fall into this group in India's six major cities and several food service outlets add healthier meals to their menus. This niche is expected to grow by approximately 10–15 % per year[61].

At present, India's **organic pathway** is showing a more stable growth rate than in recent years. The population seems to slowly incline towards organic products, which helped the sector to grow 25-folds in production in the last years[62]. This is a combined effect of farmers' efforts, NGOs work, government interventions and market forces push. For example, **organic markets** are established in cities to link organic farmers to the urban consumers. Thus, the markets try to address the commonly mentioned barriers to purchase of organic foods: lack of availability and narrow range and irregular supply. A potential hindrance to an extensively growing organic food sector in India is the effort of firms like Monsanto to introduce GMOs to the market[63].

Urban gardening by choice is increasingly seen as a sustainable way to grow local and fresh food in cities[64]. Especially in places with suitable weather, residents lay out rooftop vegetable and fruit gardens to supply their private kitchens and share with neighbours and friends. Companies across many cities assist in setting up and maintaining organic urban rooftop farms.

Food sharing is also in India more frequently practiced in an organised manner. Left-over food from weddings or vendors can be shared with those in need through online campaigns or public fridges. The approach of sharing food **avoids food wastage** which suits the Indian value of **valuing food**. Up to 40 % of the food produced is wasted in India – often before it reaches the consumer[65].

2.4 Consumption

2.4.1 Clothing

Germany

In contrast to the areas explores in the sections above, the impact of clothing is smaller in terms of personal carbon footprint but exceeds that of a mere commodity. As important as the circumstances of production and the logistic chain is the value of a garment, an outfit or a brand as status

[60] Euromonitor International, 2017: Fast Food in India, http://www.euromonitor.com/fast-food-in-india/report
[61] KPMG & FICCI, 2016: India's Food Service Industry: Growth Recipe, https://assets.kpmg.com/content/dam/kpmg/in/pdf/2016/11/Indias-food-service.pdf
[62] KPMG & FICCI, 2016: India's Food Service Industry: Growth Recipe, https://assets.kpmg.com/content/dam/kpmg/in/pdf/2016/11/Indias-food-service.pdf
[63] Mainstream Weekly, 2017: Sustainable Agricultural Development—Inorganic (GMO Crops) and Organic Farming In India, http://www.mainstreamweekly.net/article7525.html
[64] Medium, 2017: Urban farming in India — Is it serious business?, https://medium.com/@VikramSarbajna/urban-farming-in-india-is-it-serious-business-b1acb8a15b38
[65] CSR Journal, 2015: Food Wastage In India A Serious Concern, http://thecsrjournal.in/food-wastage-in-india-a-serious-concern/

symbol. In Germany, however, the market share of **organic clothing** was only 4 % in 2013[66]. Since then, awareness has been rising and in 2015 11 % of German consumers claimed that they mainly buy sustainable fashion. The fashion world expects this trend to rise further and notices new attention paid to their production cycles and workers' situation[67].

Even if labelled products seem ecologically and socially unobjectionable, the current connection between producer, distributer, advertisement and consumer creates a hardly resistible pull of ephemerality and ever changing trends that sharply contradicts any sustainable ideas. Some **eco-fashion labels** try to provide alternatives: as one of the earliest, the catalogue firm "Hess Natur" offers its customers products with a focus on ecology and fair trade since 1976. Many followed and several certificates promise fair working conditions and/or organic raw materials e. g. IVN Best and FAIRTRADE. This trend exceeds textiles: for ecologic and fair jewellery, for example, the gold smithy "Naturgold" only uses gold prospected in German rivers without the usage of chemicals. Deepmello and other fashion labels use only natural tanning for their leather articles. The latter does not appeal to **vegan clothing** buyers. Vegan clothes and vegan shoes are today easier to find than earlier and they become more fashionable.

Nevertheless, even eco-friendly fashion products are subject to the fast pace of the fashion industry. Therefore, the focus for sustainability should be on **slowing down the fashion-cycle**. Some prominent examples for second-hand clothing beyond the traditional **second-hand store** are online **clothing exchanges** platforms like "Kleiderkreisel" and private or public clothes exchange events, which are growing in popularity[68]. **Re-/upcycling initiatives** show great creativity to tackle the fashion challenge. Their goal is to process old or thrown-away items and thereby give them back their value or even improve it. The **do-it-yourself-culture** experienced a renaissance in the last decade, too[69], with knitting and sewing becoming preferred hobbies of the young. More than a hobby, the urge is to become more market-independent (compare to urban gardening). This thought is also shared by all who visit **repair cafes**, who might come together not only to fix, replace and share items (fashion and beyond), but for a social event. The **library of things** is based on the concept that rarely used items (beyond clothes but possibly including the wedding dress) do not need to be owned but can be rented.

India

The booming consumer culture in India primarily pushes for – besides electronics – fashion and jewellery. Fashion, as yet another important status symbol, is one of the fastest growing markets for luxury products in India[70]. Increasing income, brand awareness and the increasing tech-savvy millennial population are the driving factors to shape fashion retail within the country.

As the fashion market doubled in 2015, the textile industry plays an important role in the Indian economy. It contributed 14 % to industrial production and 4 % to the GDP and is one of the largest source of employment generation in the country.

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[66] Gesellschaft für Konsumforschung, 2013: Sustainable fashion www.moef.gov.in/sites/default/files/Lifestyle%20Brochure_web_reordered.pdf

[67] KPMG AG Wirtschaftsprüfungsgesellschaft, 2015: FASHION2025 -Studie zur Zukunft des Fashion-Markts in Deutschland, www.mitteldeutschland.com/sites/default/files/uploads/2016/01/28/kpmgfashion2025-studiezurzunkunftdesfashion-marktsindeutschland.pdf

[68] Heinrich-Böll-Stiftung,2012: Nutzen statt Besitzen - Auf dem Weg zu einer ressourcenschonenden Konsumkultur, ISBN 978-3-86928-094-3

[69] Utopia, 2015: IY-Trend Warum Selbermachen wieder in ist, https://utopia.de/0/magazin/warum-selbermachen-wieder-in-ist

[70] WBCSD, 2015: Sustainable Lifestyles Report India, http://www.wbcsd.org/Clusters/Sustainable-Lifestyles/Resources/Sustainable-Lifestyles-Report-India

The clothing and textile sector in India carries the British colonial legacy that promoted unsustainable practices like water-intensive and use chemical dyes. Today again, production trends are influenced from western countries. As a clothing exporting country, India caters to the desired quality in Europe and the United States by maintaining certain standards of quality and also the social and environmental standards like **ISO 9000 Certification for Textile and Apparel Industries.** Beyond these, there are no further sustainability standards in the Indian clothing and textile sector.

Traditionally, there has been a great **cultural diversity** in terms of weaves, fibres, colours and material of clothing. Western clothing has now been adopted widely without wiping out the traditional style. With the Western style and its fast changing fashion cycle, even the fashion-addicts in India do not value a piece of clothes during its full life length anymore as was the case earlier. Also in India, textile products are increasingly disposed. As second-hand use is culturally difficult, a different **concept of recycling and reusing** the fabrics was introduced to find a solution for the large volume of textile waste: The "**Khaloom"** concept of 2015, for example, produces high-end, sustainable fabric made from recycled textile by using the traditional Indian hand-spinning and weaving of "Khadi". India is the second largest textiles manufacturer in the world and production of Khaloom keep 150,000 kg of textile waste from going into landfills, save 1,504 million litres of water and even created huge employment for weavers and craftsman. Khaloom aims to produce 5 million meters per year by 2025[71]. These kind of reuse-recycle approaches of waste clothes need more support from Indian governments as well as from the private textile industries of India.

In the two last decades, 100 % **organic clothing** stepped into the Indian clothing market driven by the interest of a few fashion designers and brands. Earlier, Fabindia was the main organic brand. Eco fashion's aims are eco-friendly fabrics and making of clothes without harming the environment with chemicals and wastes. Some seek to support a more organic agriculture, too. These organic brands offer both traditional styles as well as western styles. But due to unavailability of resources or high cost of production procedures these clothes are often more costly and not well advertised to reach every potential customer.

2.4.2 Leisure and tourism

Germany

Germans spent 8, 9 % of their entire consumption expenditure for leisure, entertainment and cultural activities, which equals 141 billion Euro in 2016[72]. The most popular free-time activity among teenagers between 12 and 19 years is the usage of mobile phones with 94 % of the peer group using it daily or several times a week. 80 % watch television daily or several times a week[73]. Also the online streaming services show growing trends – especially among the youth[74]. A study with broader age coverage (14–65 years) shows different results: 29.6 % of all Germans like to do gar-

[71] Khaloom, 2017: www.khaloom.com

[72] Statista, 2017: Anteil der Konsumausgaben der privaten Haushalte in Deutschland für Freizeit, Unterhaltung und Kultur an den gesamten Konsumausgaben von 1991 bis 2016, https://de.statista.com/statistik/daten/studie/296793/umfrage/anteil-der-ausgaben-fuer-freizeit-kultur-in-deutschland-an-den-konsumausgaben/

[73] JIM Studie 2015: Basisuntersuchung zum Medienumgang 12-19- Jähriger

[74] Spiegel online, 2015: Amazon und Netflix vor allem bei den Jungen beliebt, www.spiegel.de/kultur/tv/streaming-dienste-junge-leute-schauen-amazon-und-netflix-a-1165497.html

den-work in their leisure-time, followed by shopping[75]. Nevertheless, the average German spends 7.5 hours of the day in a sitting position, and 55 % of them do not engage in a mere minimum of physical activity. Most Germans still estimate their fitness as good or excellent. But far more than half of the German population does not achieve the minimum weekly recommended 150 moderate or 75 minutes extensive **sports activity**[76]. Still, almost 26 million people in Germany are members in over 90.000 sports clubs[77].

For touristic activities car and caravan are the most important vehicles (47 %), followed by airplane (36 %). Public transportation trails with only 14 % of the Germans using it for their holiday-trips. No shift towards a more sustainable transport usage was notable for the decade 1998–2008[78]. However, 28 % of the population stated that they want to spend their holiday in a socially as well as ecologically acceptable manner[79].

To help the consumer decide, a lot of **certificates label destinations and hotels** as ecologically and socially sustainable e. g. Blaue Schwalbe, Bio Hotel, Viabono, Ibex fairstay and many others. The organisations and initiatives that provide these certificates originate partly from civil society and partly from political institutions. Attractive offers for **sustainable touristic activity** are i. g. "StattReisen", guided tours through inland cities by foot, bicycle or public transport and **"Interrail"**, a railway pass that allows easy travelling through 30 countries in Europe. Despite the array of possible sustainable leisure and tourism arrangements, a study by the Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety (BMUB) reveals a gap between the consumer's personal conviction and his/her actual behaviour: 61 % of the Germans claim they would like to organize their holiday trip in a sustainable fashion, but only 31 % actually do it. Main obstacles are a still too small variety of offerings, the lack of information and orientation about content, availability and advantages and the often misjudged balance of cost and benefit of sustainable tourism[80]. Most critically, the trend of long-distance travels by air plane remains unbroken.

India

In their spare time, Indians like **spending time with family** (65 %) at least once a week. In fact, shopping can be seen as a social activity – involving all family members. Sunday evenings are often spent dining out with the family. Eating street foods is a regular activity among youths and some people like exploring different delicious street foods. Much leisure time is spent with entertainment like watching TV, listening to music and playing online games. The most common medium for entertainment and information is the smartphone. Movies, watched on TV or in theatres, are also a common time-pass. One also finds book lovers in India and people do spend leisure time for learning. Indians also spend their free time with religious activities – and Indians exercise. The most favorited sports are cricket and football, which are played on every yard in the country. Sports clubs become increasingly popular. Another popular activity among the youth is riding

[75] Statista, 2017: Beliebteste Freizeitaktivitäten, Hobbies und Sportarten in Deutschland nach häufiger Ausübung in den Jahren 2015 und 2016, https://de.statista.com/statistik/daten/studie/171168/umfrage/haeufig-betriebene-freizeitaktivitaeten/

[76] Frobose, Ingo & Wallmann-Sperlich, Birgit, 2016: DKV Report 2016: Wie gesund lebt Deutschland, www.ergo.com/~/media/ergocom/.../20160808-dkv-report-2016-studienbericht.pdf

[77] Statista 2016: Gesamtzahl der Mitglieder in Sportvereinen in Deutschland von 1999 bis 2016, Gesamtzahl der Sportvereine in Deutschland von 1999 bis 2016

[78] Statista: Genutzte Verkehrsmittel der Deutschen für den Urlaub in den Jahren 1998 und 2008

[79] Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit, 2014: Abschlussbericht zum dem Forschungsvorhaben: Nachfrage für Nachhaltigen Tourismus im Rahmen der Reiseanalye

[80] Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit, 2014: Abschlussbericht zum dem Forschungsvorhaben: Nachfrage für Nachhaltigen Tourismus im Rahmen der Reiseanalye

cycle (later 2-wheelers) together for miles. Many social clubs are emerging to encourage cycling as a hobby, however daily commuting by cycle is still a distant reality for the middle income class – lack of cycle lanes and thus security issues are the main hurdles.[81]

Travelling has also become more popular in India. People explore the various corners of India by bus, train or flight. Today, many more Indians want to make international vacations.

The increasing interest of national and international tourists in travelling in India results not only in development benefits of the local tourism industries but also in increased pressure on the eco-systems. Unsustainable tourism can lead to a myriad of disturbances to the biodiversity, re-sources, local livelihoods and societies. **Sustainable tourism** therefore becomes necessary. The concept of sustainable or responsible tourism can be defined as tourism which minimises the negative impacts and maximises the positive impacts on the society, heritage, environment and local economy. The Ministry of Tourism, Government of India, launched comprehensive Sustaina-ble Tourism Criteria for India (STCI)[82]. Focal regions for ecotourism development are the Himala-yas, North Eastern States, Western Ghats, Jharkhand, Andaman & Nicobar Islands, Lakshadweep.

Ecotourism also encourages conservation initiatives and creates better awareness of the sur-rounding environmental wealth. Ecotourism is on the rise for many concerned travellers. Critical voices, however, claim that ecotourism is nothing but promotions that turn natural conservation areas and national parks into tourism attractions to earn extra cash. A lot more can be done to improve and implement the sustainability criteria for ecotourism.[83]

2.5 Investments

Germany

When we speak of the "Great Transformation" this also includes finances and investments. As the lions-share of financial resources is used to push unsustainable "business as usual", it is worth-while looking for sustainable alternatives in the finance sector. **Eco-social-orientated banks** and investments have a long tradition in Germany: in 1970 the GLS (Gemeinschaftsbank für Leihen und Schenken) was formed as the first non-clerical eco-social-orientated credit-institute[84]. Today the GLS is Germany's biggest eco-bank with 211.000 customers[85]. Other examples are the "Umwelt-bank" and "Triodos", of which the latter is the leading eco-bank on European scale[86]. They offer the same array of services as conventional commercial banks, as there are current accounts for private persons, building society contracts, funds etc. but they exclusively invest into ecologically and ethically sustainable and meaningful projects. The total volume of capital expenditures into sustainable funds and mandates in Germany has experienced a downright boom in the last dec-ade: it rose almost 80 billion Euros in 2016[87] – however, that is only about 2.8 % of the market in Germany. Additionally 77 billion Euros of private-customer-deposits are currently invested sus-

[81] The Tribune, 2017: The leisure matrix of the middle class, www.tribuneindia.com/news/comment/the-leisure-matrix-of-the-middle-class/481817.html
[82] Ministry of Tourism, Government of India, 2015: Sustainable Tourism Criteria for India, http://tourism.gov.in/sites/default/files/Other/Document.pdf
[83] Media India Group, 2017: Eco-tourism's gaining momentum in India, https://mediaindia.eu/tourism/eco-tourisms-gaining-momentum-in-india/
[84] Nachhaltig-investieren.org: Ökobanken in Deutschland, http://www.nachhaltig-investieren.org/oekobanken-uebersicht.php, 19.07.17
[85] GLS-Bank, 2017: Geschäftsbericht 2016
[86] Triodos, 2017: Geschäftsbericht 2016
[87] Forum Nachhaltige Geldanlagen, 2017: Marktbericht Nachhaltige Geldanlagen2017, S.31

tainably[88]. Thus, German consumers can choose a sustainable bank and consume money sustainably or invest it in sustainable assets.

Also in Germany, **crowdfunding** is rapidly gaining followers: in 2016 over 10 million Euros were raised[89] and invested on various platforms and topics like "econeers" (Energy) and "startnext" (Creative). The ancient idea of **complementary and regional currencies** is rediscovered in times of credit bubbles and crises: over 30 regional-currencies are in use in Germany. In theory these instruments of payment should provide a stable price, boost the local economy and avoid the interest-based money system. Modern online versions like bitcoins imply issues of increased electricity use.

India

In India, unfortunately, costumers still lack the opportunity to select their bank according to sustainability criteria. **Complementary currencies,** on the other hand, are a norm. Cryptocurrencies enjoy increased acceptance and are seen as potential game changers for online transactions, emittance, and electronic commerce[90]. Especially after the government's demonetisation in 2016 and the call of the Digital India Programme, alternative pay systems of **mobile money companies** arise. Their sustainability often lies in the socio-economic inclusion of the lower middle class. The increased electricity consumption is an issue in India as well as electricity is not yet mainly generated from renewable sources. Likewise, India's largest **crowdfunding** platform, which has raised over 10.2 million Euros through donations and microloans, advertises with social sustainability: "raise funds online for yourself, loved ones, charities, and more". Also, Faircent[91] carries the socio-economic sustainability ambition in the title. It is a peer-to-peer lending platform and a virtual marketplace where borrowers and lenders can interact directly, without the involvement of banks. Crowdfunding for solar panels is a hit, too.

2.6 10 suggestions for the German and Indian urban middle classes

Based on the discussion of the current status and available options in five key areas, the below list contains an initial set of suggestions that could guide German and Indian middle class consumers in their decision making. This list will be discussed further in the ongoing dialogue project between Germanwatch and CANSA India.

[88] Bundesverband Investment und Asset Management, 2017: Zahlenwerk des deutschen Investment Marktes
[89] Statista, 2017: Durch Crowdfunding eingesammeltes Kapital in Deutschland in den Jahren 2011 bis 2016 nach Quartalen
[90] Digital Era, 2017: Rise In Acceptance Of Alternative Currency In India, www.digitalerra.com/rise-in-acceptance-of-alternative-currency-in-india/
[91] See www.faircent.com

Table 1: 10 Suggestions for effective ecologically sustainable lifestyles for each the German and the Indian urban middle class, own compilation

Germany	India
1. Avoid short air travels completely (take the train or bus), if long-distance flights are unavoidable offset the emissions	1. Stick to a diet of fresh, seasonal and regional, organic vegetables and fruit, lentils and beans, little/no meat and dairy produce
2. Switch to a provider of renewable electricity	2. If possible, go for renewable energy - and use efficient appliances even more wisely – e.g. your AC (combine it with fan)
3. Insulate your building properly and reduce the rooms' heating temperature	3. Use public transport or car pool as much as possible, bike or walk short distances – alternatively reduce your commuting distance and opt for a safe but small car
4. Own no/ a small and economical car, use car-sharing and public transportation, bike, skateboard or walk short distances	4. Minimize water usage and collect grey water and use it to flush toilets or mop floors
5. Switch to a regional, seasonal and organic diet; eat less/no meat and dairy produce	5. Improve your and your city's waste management: refuse, reduce, reuse, re- and upcycle, etc.
6. Choose your bank according to sustainability criteria and make sustainable investments, e.g. in solar energy	6. Join ecotourism: avoid in-country flights (offsets for international flights), chose eco hotels/resorts, keep Indian ecotourism standards and help ecotourism establish itself
7. Live in a smaller and comfortable living space	7. Increase your Handprint by engaging in society for sustainable development
8. Opt for energy-efficient appliances and use them only when needed	8. Stick to a medium-sized living space, preferably in a climate-fit designed building
9. Increase your political Handprint by engaging in society for sustainable development (critical thinking & engagement)	9. Remain at a largely sustainable consumption level by avoiding fast-fashion and quick exchange of electronics , incl. smart phones, to newer models
10. Halve your working time – less income, less consumption, more time	10. Keep your sense for efficient use of resources and materials also by sharing items

As the Indian ecological footprint is way smaller than the German, many of the top 10 suggestions for sustainable practices for India include sticking to good or making smarter choices – the average Germans however will need to make real big changes for living alternative lifestyles and greener and healthier lives.

3 Drivers of sustainable lifestyles

In conclusion from the above chapter, sustainable lifestyles are no fast-selling items yet – not in India nor in Germany. In order to bring sustainable forms of living closer to mainstream, the full breadth of drivers for more sustainable lifestyles needs to be mobilized: e. g. information and communication, citizen empowerment, eco design and social standards, innovation, as well as policy regulations and other supportive interventions. Actors from across the society, business and political decision makers are required to engage in initiatives like empowering people, business innovation as well as political interventions to create favourable frameworks for mainstreaming sustainable lifestyles.

3.1 Information and communication

The potential of improved sustainable lifestyle information and communication is huge – both in Germany and India. Large shares of the Indian population are neither informed about the environmental and social crises of our times nor are they – and to a certain extent also of the German population – aware about the range of sustainable lifestyles options and their benefits. Information and communication can fill these knowledge gaps. Info charts and explanation videos can easily be shared on social media and informative websites or TV and radio features can provide deeper information. Personal stories like Lauren Singer's zero waste life are particularly influential[92].

Communication reaches the audience best when it is people-centric, not customer or market centric like is often the case in India. Generally speaking, communication that aims to alter emotionally controlled behaviour with cognitive strategies alone is bound to flop. Research, communication and education institutions can advise about suitable **framing and terminology** for sustainability and lifestyle communication. Germans and Indians certainly prefer different concepts and wordings around sustainable lifestyles such as better living, alternative lifestyles or green life[93]. A recent research on climate change communication in India provides revealing results of relevance. For example, the commonly use term of “dirty energy” for fossil fuels is unclear to many and should be better explained in context to the daily use of energy.[94]

Yet, rich information material risks causing many people to feel overwhelmed by the plenty of choices for more sustainable lifestyles and alternative consumption patterns[95]. Information overflow can distract from the most important changes to develop a sustainable lifestyle. The above list of 10 suggestions seeks to help make more informed decisions. Once-in-a-lifetime decisions, like the selection of a renewable energy provider or the decision against owning a car, make daily decision making processes easier.

[92] See www.youtube.com/watch?v=nYDQcBQUDpw

[93] GIZ, 2015: Sustainable lifestyles – Pathways and choices for India and Germany, www.giz.de/en/downloads/giz2015-en-IGEG_3_sustainable-lifestyles.pdf

[94] Marshall, G., Yashwant, S., Shaw, C. and Clarke, J. (2017). Communicating climate change in India: a Global Narratives project. Oxford: Climate Outreach., http://www.cansouthasia.net/pdf_files/Climate_Outreach_CAN_Global_Narratives_India.pdf

[95] Longo, C., Shankar, A. & Nuttall, P. J Bus Ethics, 2017: “It’s Not Easy Living a Sustainable Lifestyle”: How Greater Knowledge Leads to Dilemmas, Tensions and Paralysis, https://doi.org/10.1007/s10551-016-3422-1

Few, clear, relevant and attractive **labels** (e. g. fair and organic in one label; modernizing the German label "Blue Angel") to simplify information would also provide helpful guidance towards decisions that really make a change.

Campaigns can help to reach out to large parts of the society to provide knowledge about sustainable lifestyle options. The concept of **Handprint**[96] invites to develop simple ways of personally living a sustainable life. Such campaigns can help alternative lifestyles by addressing myths e. g. of being backward. A broad group of communicators including celebrities, journalists, social media stars and NGOs should make sustainable lifestyle communication their responsibility. Especially, the highly influential sectors of advertisement and marketing have a responsibility for mainstreaming sustainable lifestyles.

Last but not least, **formal education** has to play a strong role in promoting sustainable living. As early as in kindergarten children can learn core concepts as respectful interaction and caring for the environment. Germany e.g. has special forest kindergartens where kids spend the whole day playing outside[97]. At elder age, environment education should be integrated in the curricula, as compulsory in India[98], but sustainability topics should crosscut all subjects. However, a recent study reveals that the SDGs have so far rarely been recognized, communicated or implemented in formal education across Germany[99].

Surely, information and communication have their limits, too. The understanding of the value-action and attitude-behaviour gaps needs to further improve. As the provision of information to raise awareness alone has limited scope to initiate behaviour change, inevitably, other drivers need to assist.

3.2 Citizen empowerment and platforms for cooperation

It is proven that most of us learn easier with and from others (**peer-to-peer learning**)[100]. Thus, we also change behaviour easier when we learn and act in groups that motivate us. New behaviours but also new values and norms are adopted easier when we surround ourselves with people who already follow these. Platforms for exchange with like-minded peers are essential for living new habits (and prevent falling back into the old unsustainable behaviour). Also, participation platforms raise a sense of responsibility. Being part of shaping the society in which we live gives a purpose to existence and responsibility enriches one's life (see chapter 1). Allowing for and fostering spaces for voluntary engagement and citizen participation provides opportunity for both individuals and society towards more sustainable lifestyles and living.

Examples for citizen empowerment platforms are neighbourhood communities for urban gardening, repair cafés, film clubs screening alternative movies, vegan or vegetarian restaurants and world cafés, regularly meeting groups like "green drinks" among many others. Even existing groups

[96] Centre for Environment Education, 2007: Handprint : Positive Actions Towards Sustainability, www.handprint.in/the_handprint_idea
[97] See www.sdw.de/waldpaedagogik/waldkindergaerten/index.html
[98] UNESCO, 2015: Not just hot air: putting climate change education into practice, UNESCO publication, 978-92-3-100101-7
[99] Rat für Nachhaltige Entwicklung, 2017: Studie zur Umsetzung der SDG im deutschen Bildungssystem www.nachhaltigkeitsrat.de/wp-content/uploads/2017/11/Mueller-Christ_Giesenbauer_Tegeler_2017-10_Studie_zur_Umsetzung_der_SDG_im_deutschen_Bildungssystem.pdf
[100] Topping, K. J.,2005: Trends in peer learning in Educational Psychology, Vol. 25, No. 6, December 2005, pp. 631–645

like family gatherings, religious group meetings, unions or business associations up to political parties can become forums for sustainable living exchange. Such platforms could help pave the way towards a **sharing economy** – a simple way to provide equal access to a more sustainable lifestyle for all are peer-to-peer arrangements where different groups of people (elderly, young, women, rich, poor, migrants, minorities, differently enabled, etc.) jointly create for examples sharing pools for goods and services – such as the library of things.

Another aspect is the creation of **co-living on sustainable conditions**, perhaps based on the commons, which should be fostered by city planning and/or public support of individual initiatives. Such projects might limit private living space slightly but the buildings can offers common spaces: open spaces offer a variety of differently equipped common rooms for all residents, cafes and restaurants / public kitchens for joint cooking, sport and culture facilities, public laundry, etc. that foster interaction and cooperation among the residents. The thought behind it: combined **private simplicity and public luxury** allow for a small ecological footprint per capita without austerity.

Similar to co-living, **co-working spaces** – popular in India[101] and Germany[102] – should be fostered. In the modern working world this new form of office space utilization allows for exchange and cooperation among freelancers, single workers, long-distance employees, bloggers, etc. They prevent isolated home-office settings that lack opportunities for social contact and offer the benefits of co-workers interaction. Co-working spaces are often incubators of new thinking and approaches.

These platforms empower citizens to explore their **political Handprint** and identify ways in which not only the own lifestyle is changed but also norms are challenged and rules and regulations enriched to allow for more sustainable lifestyles in society as a large – e. g. by setting certain fair and eco-standards for the own company, fostering public transportation in one's city or renewable energy in the country[103].

Besides the voluntary engagement and other factors, the limitation of mainly informal, sometimes formal citizen empowerment platforms also lies in the surrounding limiting frameworks and structures of societies – new standards, rules and regulations need to allow for further individual and group action towards further sustainable lifestyles.

3.3 Eco design and social standards for sustainable living

Transformational eco design goes beyond applying principles like standards of resource efficiency, long-lasting products of recyclable materials and life-cycle thinking in developing products. It seeks to develop products that do not only reduce energy use, but even change consumption behaviour for lesser energy and resource use[104]. Thus, eco design applies on the production and on the consumption side. An example could be the pedal-powered washing machine that needs no electricity and makes the individual reflect about his/her use of clothes and water.

[101] Quartz, 2017: The future of work in India is funky co-working spaces, not stuffy offices, https://qz.com/1034427/the-future-of-work-in-india-is-funky-co-working-spaces-not-stuffy-offices/
[102] JONES LANG LASALLE SE, 2017: Coworking, http://www.jll.de/germany/de-de/Research/Coworking-Germany-JLL.pdf
[103] Germanwatch, 2015: Wandel mit Hand und Fuß - Mit dem Germanwatch Hand Print den Wandel politisch wirksam gestalten, http://germanwatch.org/de/download/15335.pdf
[104] Sommer, B., Welzer, H., 2014: Transformationsdesign – Wege in eine zukunftsfähige Moderne, oekom Verlag, ISBN 978 3 86581 662 7

Eco design is best promoted at universities that make it their agenda, like at the eco design school "ecosign"[105] and others in Germany, or integrate it in their curricula, like the National Institutes of Design across India[106]. Germany has its annual national **eco-design award scheme**[107]. But also eco design fairs and festivals like Ökorausch are created for exchange among eco design stakeholders and to build platforms[108].

As mentioned in chapter 2.1, in India the sustainable or **green design of buildings** is of particular importance, which attracts architects to experiment with construction styles between traditional and modern, creating green oases from local stone and wood. Many architecture studios in India promote construction practices and architecture styles that are closer to the people, the environment and the local resources[109]. Eco design certainly offers great **scope for Indo-German cooperation**.

However, standards alone are often not good enough. They need to be actively encouraged with guidance, rules and regulations for people, local authorities and the private sector. Government interaction is required to move beyond a certain level of companies and society's voluntary action.

3.4 Innovative business models for sustainable lifestyles

The scope of innovative business models in this context is to enable more sustainable living by creating or leading companies with business models for rigorous production systems, generating green and fair products and services that also inspire people to modify their own consumption behaviours and adapt alternative lifestyles. Spaces where these innovations are born typically are incubation centres that go beyond the general research and development (R&D) cells of companies in terms of creativity and out-of-the-box-thinking. The largest challenge is to provide solutions to affordable prices for the middle classes.

In Germany, innovation typically has its seeds in universities or other research bodies, small and medium-sized enterprises or large companies. Additionally, alternative thinkers might start sustainable businesses like eco fashion labels. In India, innovative business models originate typically from young jobseekers who explore their ideas in incubation centres and start-ups. These pioneers' creativity, fondness of experimenting and determination for the cause lacks comparison. For example Graviky Labs, which is one of the few carbon capturing start-ups worldwide and captures pollution to turn it into ink[110].

Indian innovative sustainability business ideas concern typically improved energy and food supply. The currently most popular example from India probably is crowdfunding for solar panel projects. Also the above mentioned food-sharing platforms are common. Business models for urban gardening and vertical gardens companies emerged in India recently as new concepts of greenery and urban sustainability for green businesspersons. A few rooftop garden makers like Alfa Green or Royal Micro Irrigation System support urban and rooftop gardens in different cities in India like Mumbai, Coimbatore, New Delhi. An innovative business idea named "Satat Sampada", is an ex-

[105] See www.ecosign.de
[106] See www.nid.edu
[107] Bundespreis EcoDesign, www.bundespreis-ecodesign.de/
[108] www.oekorausch.de
[109] Rethinking the future, 2017: 15 Architecture Firms in India practising Sustainable and Vernacular Architecture, www.rethinkingthefuture.com/sustainability/15-architecture-firms-in-india-practising-sustainable-and-vernacular-architecture/
[110] Graviky, 2017: www.graviky.com/

ample to provide organic vegetables, fruits and pulses to consumers along with awareness about organic food that is chemical free.

German examples rank around technology and finance innovations. One prime example from Germany is the already mentioned GSL Bank. Also the policy innovation of the feed-in tariffs that promotes private persons as energy prosumers is made in Germany. A down-to-earth concept are the packaging-free stores. Potentially interesting for India are the innovations of recycling of e. g. e-waste. Or will India drive the innovation on that front? E-waste is certainly another potential area for Indo-German cooperation.

Barriers for innovative sustainability business models, especially in India, are disadvantaging markets and regulations. In both countries, the demand for sustainable products and services often needs to be created. Anyone who seeks to introduce a sustainable business model needs a brilliant marketing idea with it. Regulations certainly can do much more to foster sustainable business innovations.

3.5 Regulation and policy interventions

Regulations that foster sustainable lifestyles come in many forms. We focus on the following tools for establishing frameworks that promote sustainable lifestyle options:

Richard Thaler and Cass Sunstein's book "Nudge: Improving decisions about health, wealth, and happiness" suggest behavioural recommendations that can also be useful for changing inactivity into active participation in sustainable lifestyles[111]. A nudging example is the painting of footsteps on the ground, leading the way to a bin. The footsteps invite people to use the bin instead of littering[112]. There are plenty of more impactful opt-in – opt-out examples that nudge people into more sustainable behaviours: setting a default for offsetting flight emissions when booking a flight or free parking for car sharers in city centres. Consequently, nudging and other social regulations can help making the sustainable choice that individuals otherwise would not make. Nudging is a helpful tool for all kind of authorities, city planners, local governments, companies, campus designers and many others.

Policy makers and others can set incentives for encouraging research, investment and people power towards establishing circular, sharing and collaborative economies – usually by rewarding sustainable choices financially. Nonetheless, **incentive setting** appeals for example to people's joy of competitions, too: an energy company that informs a household about its energy consumption compared to its neighbours' consumption triggers a competition of less energy use between neighbours. On a larger scale, government incentives are currently needed in India and Germany to attract investors to support the transition to electric vehicles – especially India with its all-electric vehicle sales by 2030 target needs a solid incentive package.

As even more powerful tools policymakers can turn to **policy instruments** like **taxes –** e. g. as a means for carbon pricing. India's Coal cess, an example of a carbon tax, directs the revenue to the National Clean Energy Fund. Such tax revenues can finance **subsidies** for f. e. private solar roof-

[111] Thaler, R., and Sunstein, C., 2009: Nudge: Improving Decisions About Health, Wealth, and Happiness, Penguin, ISBN: 978-0141040011

[112] Petersson, C., 2014: Enabling sustainable choices in everyday life, http://malmo.se/download/18.3c0b3b6f15965118c0e1c867/1491301404169/Enabling_sustainalbe_choises_utskrift+20150518.pdf

tops. Luxury taxes, e.g. on a certain meat consumption, are options that need to be discussed for the mitigation of climate change, even if they are currently unpopular.

The strongest policy interventions are **laws**. The introduction of the feed-in tariffs by the German Renewable Energy Sources Act of 2000 was a truly powerful law to foster private-people investment in and ownership of renewable energy – it geared up the Energiewende[113].

With the adaption of the SDGs, nations were tasked with **institution building** for their implementation. India set its policy commission NITI Aayog to oversee the SDGs. In Germany, the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and the Federal Ministry for Economic Cooperation and Development (BMZ) jointly handle the SDG implementation. Further, the bodies like the German Council for Sustainable Development focus on the SDGs and their implementation.

[113] See www.bmwi.de/Redaktion/EN/Dossier/renewable-energy.html

4 Political recommendations

Yet to be added to this living document after the discussions in several planned workshops in India and Germany.

Germanwatch

Following the motto “Observing, Analysing, Acting”, Germanwatch has been actively promoting global equity and the preservation of livelihoods since 1991. In doing so, we focus on the politics and economics of the North and their worldwide consequences. The situation of marginalised people in the South is the starting point of our work. Together with our members and supporters as well as with other actors in civil society, we intend to represent a strong lobby for sustainable development. We attempt to approach our goals by advocating for the prevention of dangerous climate change, for food security, and compliance of companies with human rights.

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