11

Impact

The Quorn company, which makes meat substitutes from mycoprotein, shows the CO_2 impact of its products. The production and transport of a kilogram of Quorn mince result in 1.3 kilograms of CO_2 equivalents, while beef mince produces 27 kilograms of CO_2, fish 3.6 kilograms of CO_2, and tofu 3.5 kilograms of CO_2. This information shows that a meat substitute is a more sustainable alternative to meat. To be sure that the calculated impact is correct, Quorn collaborated with the Carbon Trust Organization. *Quorn*, www.quorn.co.uk/about-quorn/planet

We have replaced the lids of strawberry, grape and cheese boxes, and more, with a thin layer of foil. That saves almost half a million kilos of plastic per year. *Albert Heijn*, nieuws.ah.nl/over-verpakkingen-bij-albert-heijn

The four wind turbines along the A15 generate energy for over 7,100 households in the region. *Windpark Nijmegen-Betuwe*, huismerkenergie.nl

Did you know that jeans are, on average, €33 too cheap? That is because all kinds of hidden costs are not included in the price. These hidden costs include, for example, pollution of the surface water by toxic dyes. They also include […] underpaying employees in clothing factories. Employees cannot live a decent life on their scanty wage, as a result of which their children often do not receive a proper education. *True Price*, https://trueprice.org

Investing has always been about striking a balance between risk and return. For companies, sustainability has truly become a major element of risk management. This is also because the risks of climate change are increasing. It is, therefore, an increasingly important part of the entire investment picture. *Hans Slomp, Fund Manager Actiam, ASN Bank*, www.asnbank.nl

Roadside grass yields around 140 m^3 of biogas per ton, which means that about 87 million m^3 of green gas can be produced from a million tons. This is sufficient for 55,000 households. *Groengas*, https://groengas.nl

J. Jonker and N. Faber, *Organizing for Sustainability*,
https://doi.org/10.1007/978-3-030-78157-6_11

An average inland vessel (ship) with a propeller consumes around 200,000 to 400,000 litres of fuel per year. The 7,000 inland vessels of the Dutch fleet use approximately 2.1 billion litres of fuel per year. In addition to this fuel consumption, there is also room for improvement in the area of air emissions such as sulphur (SO_2), nitrogen (NO_x) and particulate matter (PM10). *Duurzaambedrijfsleven*, duurzaambedrijfsleven.nl

11.1 Speaking of Impact

This chapter unpacks Building Block #9—Impact, which seeks to determine the impact that your business model idea will have on the broader social, ecological, economic, and material environment. We have found, especially during the development and trialling of the BMT, that this building block is often challenging for BMT users. Nevertheless, this building block is crucial in a sustainable business model. After all, the Result Stage is about translating impact (Building Block #9) into value(s) creation (Building Block #10). And here we mean multiple value(s) creation rather than only financial value, which is the focus of most linear business models.

It is important to clarify the impact of your business model. This can be in a general sense, but also focused on specific stakeholders, a raw material, or a specific context. Even the most *advanced* companies can find this complicated. It is quite challenging to indicate whether and to what extent impact is part of a strategy and core activities. In short, there is a lot to be done.

Impact is about the short- and long-term effects of your sustainable business model. What are the positive and negative consequences of your business model, now and in the future? You can measure the effect of your business model in three successive stages: the concrete output of your production or services (the direct result), the outcome (medium-term environmental effects), and the impact (lasting long-term effects).

Example

The Fruitmotor Cooperative (De Fruitmotor)

The Fruitmotor Cooperative processes leftover fruit from fruit growers from the Betuwe (a region in the heart of the Netherlands where a lot of fruit is grown) into ciders and juices. The revenues from these products are used to increase the sustainability of the Betuwe fruit cultivation. Fruit growers and other supply-chain partners, as well as interested citizens, can become members of the cooperative. The Fruitmotor's output—the juices and ciders—are for sale in shops and catering establishments within and outside the region. The outcome is that fruit growers can invest annually in sustainability

thanks to the revenues from what used to be considered a waste product. The intended impact is an increase in biodiversity, enhancement of the landscape, and improvement of soil, air, and water quality (De Fruitmotor, www.defruitmotor.nl).

In the development of your business model idea and starting a new venture you are likely to have already thought about the ultimate impact you want to have. You can think of impact as the concrete translation of your Dream (Building Block #2) through a Proposition (Building Block #3). What will truly change significantly when your dream is fulfilled, and what does this mean for the design of your business model? It is important to formulate your intended impact as specifically as possible. It is also worth anticipating what you as a start-up, or as a company, may be held accountable for and within what timeframe. After all, making the impact you want often takes time. For a sustainable business model, it is necessary to determine which positive impact you aim for, whether there are possible negative impacts, and how these two interrelate. Reflecting on your impact and seeking to measure your impact right from the start will enable you to continuously monitor whether you are still on your intended track as your idea evolves or your venture grows.

11.2 Quantifying Impact

To determine the impact of your business model idea, we recommend you choose a number of relevant indicators—these will also enable you to measure and monitor your ongoing impact. We suggest you identify indicators primarily for yourself and the partners with whom you realize the business model; after all, you stand for the product or service with which you will seek to make a difference. Secondarily, identify indicators for customers, governments and other parties to show the relevance of your business model. Transparency and clarity regarding the impact of your business model will enable you to approach investors. But you also do this exercise because there are *silent* parties such as nature that you may affect—which are important to be aware of.

Extensive, but also complex sets of indicators are, for example, the EU indicators for circular economy (Eurostat, n.d.a) and the UN SDGs (Eurostat, n.d.b)—see www.ec.europa.eu/environment/sustainable-development/strategy/monitoring/index_en.htm. One widely used indicator, for example, is reducing CO_2 emissions—this can be planned, measured, and monitored.

The main point is that you translate the wide array of indicators that exist into a set of indicators that fit your business model, such as the examples for the carpet tile manufacturer Interface in Fig. 11.1. The more concrete and measurable your indicators, the easier it will be to communicate your impact with other parties.

We recommend that you use a common method like SMART to test your indicators. SMART stands for Specific, Measurable, Achievable, Relevant, and Time-bound. A brief explanation is presented below that you can find in the public domain (Wikipedia), but there are dozens of variants and elaborations in circulation if you want to know more:

Key Points

- *Specific*: Is the objective of the indicator in question unambiguous?
- *Measurable*: Under what conditions is the desired (measuring) goal achieved? The indicator must, therefore, be able to indicate (1) where you currently are and (2) what the intended goal is.
- *Achievable*: Is the indicator achievable for all relevant stakeholders, but also, for example, for the natural and biological environment?
- *Relevant*: Is the indicator relevant in relation to the goal you want to achieve? Make sure not to narrow down the goal too much so that the validity of the indicator is maintained.
- *Time-bound*: When (in time) must the identified measuring target be reached? The question is also whether the indicator shows the current situation fast enough.

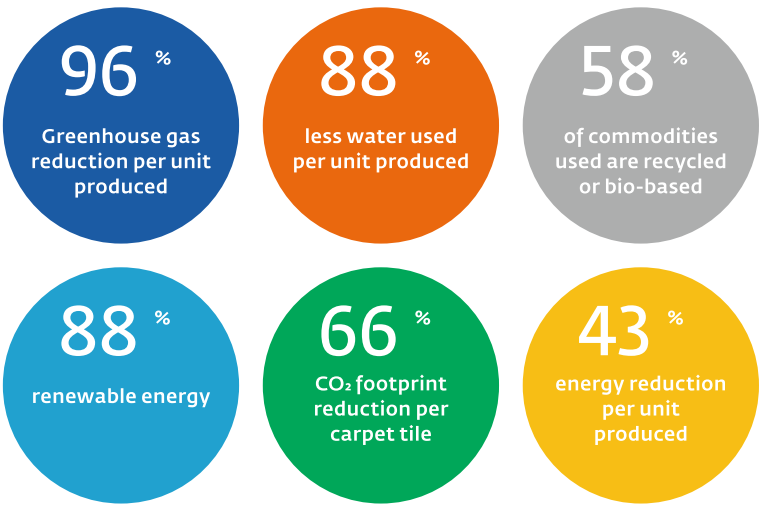

Fig. 11.1 Impact indicators—Interface

After you have defined the indicators, you determine the measurability of those indicators, as well as the method you will use to report on them. Keep a keen eye on the practical feasibility, as well as the costs involved in measuring and reporting. Also, consider when your impact will become visible and measurable. What impact can and may you be judged on in three years? In five years? In ten?

Of course, you want to have a positive impact with your business model, but it is important to also identify the possible negative impacts. You use the same indicators for this. Perhaps it will turn out that the impact is neutral: then the long-term effect of your business model will be neither positive nor negative.

If it turns out that your business model could lead to an actual negative or neutral impact, take a good look at the design of your business model. Can you reverse the expected negative impact? Can you perhaps compensate for the negative impact? If the negative impact seems insurmountable, it makes sense to go all the way back to the Design Stage of the BMT.

Example

How to Overcome a Negative Impact?

In the *Groene Woud*, the triangular area between the Dutch cities of Eindhoven, Den Bosch and Tilburg, the local government authorities have encouraged individuals and companies to plant old varieties of tall fruit trees. The trees were made available free of charge because they enhance the cultural landscape and biodiversity. After a number of years, there was an abundance of fruit. After many fruit snacks and stomach aches from the apple pies, the apples and pears were put on the roadside in a crate for others to help themselves. But even then the harvest was still too abundant, resulting in food waste as a negative impact. To address this negative consequence, an initiative was developed to enable people to use mobile juice presses at several locations in the area to create juice (which can last for up to two years before it needs to be consumed) and therefore avoid food waste (Het Groene Woud, www.hetgroenewoud.com).

It can be difficult to quantify the impact of an organization or a business model idea. A good start is to brainstorm by going through the previous building blocks to think about relevant indicators. What is the difference you want to make as an organization? Which parties can you cooperate with to achieve this? Which activities will contribute to the realization of the chosen strategy? Use the answers to these questions to choose appropriate impact indicators and start formulating your impact statement. It can still be adjusted and updated afterwards. As an organization, do you mainly want to increase

your social impact? Which social indicators apply then? How can you take a first step towards making this impact quantifiable?

Tip

It is useful to expand on your (intended) impact in a statement. For example: 'We choose a platform business model because …' or 'This business model has a social impact because it directly contributes to the social inclusion of …'.

11.3 Case Studies: Impact

Case Study: WashingGreen

WashingGreen provides a concept for the hotel industry to wash linen with LCO_2. Water is essential for the conventional laundry process. It is used as a *solvent* for the detergent and as a means of transport for removing dirt from the wash. However, the use of water is superfluous when washing with LCO_2. This means a reduction in water consumption of 100%. This process simultaneously reduces energy consumption and the CO_2 footprint, and thus the operational costs.

Case Study: Litterati App

Picking up litter is what Dirk Groot of the Zwerfinator does (see zwerfinator.nl). That does not sound very exciting, because everyone can do it. But the different and smart thing in this case is that Groot maps all the waste he collects in the Litterati app. Everyone can see where companies or stores leave their waste. Groot confronts companies with this data and asks for a solution. For example, he collected a particularly large amount of plastic wrappers from Antaflu cough drops and shared this discovery with the producer. And it worked. From 2020 the company will wrap the drops in paper (www.voordewereldvanmorgen.nl an initiative of the ASN Bank).

Case Study: Jumbo Supermarket

Founded in 1921, Jumbo has grown into the second largest supermarket chain in the Netherlands and has also opened its first stores in Belgium. In 2021 they

Fig. 11.2 Impact reduction—Jumbo Supermarket

have a market share of 21%, 687 branches, and over 60,000 employees. Being a company of this size brings serious responsibilities when it comes to packaging. To address this they have developed a companywide reduction programme to reduce their waste and plastic footprint. Their aim is to reach a 20% reduction in packaging waste by 2025 through using 20% less packaging material, 100% recyclable packaging (which is often also reusable), plastic packaging consisting of an average of 35% recycled and/or bio-based plastics, less fossil materials, and cardboard or paper packaging made of recycled material as much as possible, or else 100% FSC-certified, as well as offering more sustainable choices. Figure 11.2 shows how Jumbo addresses the various packaging areas.

'Jumbo is fighting packaging waste by packaging less and better and by minimizing our waste flows' (www.jumbo.com).

Case Study: Eendenkroos

It was decided that a selection of ecological indicators for the process of growing duckweed would be used based on the *ReCiPe* model from the *Life Cycle Analysis* method, because they are specifically suitable for measuring and formulating ecological impact (National Institute for Public Health and the Environment, 2019). The selected indicators are the degradation of tropospheric ozone (the greenhouse gas emissions CO_2, methane, and nitrogen), human toxicity (health risks), water and land use and terrestrial ecotoxicity (decrease in biodiversity), and fossil/renewable fuels (energy consumption). These indicators are applied to the following points in the production process:

the recycling of CO_2 and the use of manure from local farmers as a nutrient for duckweed, and the transport of manure and duckweed from the growing location. They are also used to gain insight into the desired ecological results: the use of duckweed as a substitute for soy in animal feed.

Case Study: Bread Bags

How simple can it be? You all know them: the plastic bags you put your bread in at the supermarket. Marie-José de Zeeuw from IJsselstein devised an alternative with her citizens' initiative *BROOD-nodig* (Dutch for *much needed*): a bread bag made of cotton, which will last for a long time. In this way, she wants to put an end to single-use plastic packaging. Already after two years around 5,000 bags have been distributed among 80 shops and 30 municipalities. De Zeeuw says that her initiative will save around 500,000 plastic bread bags per year (www.voordewereldvanmorgen.nl, an initiative of ASN Bank).

Case Study: Mealworms

The core activity of our business model is the cultivation of mealworms as an addition to animal feed. As a result, we contribute to the reduction of CO_2 emissions (because of less feed) and less deforestation due to soy cultivation. More than 90% of the soy that we eat is *hidden* in meat, eggs, and dairy. We also create new jobs by stimulating mealworm farms. In addition, we satisfy a growing protein requirement through the cultivation of mealworms. The world population will grow from 7 to 9 billion in the coming decades. The protein requirement in the world is even expected to increase by 60–90%. Based on the number of tons of mealworms sold and the nutritional value they have, we specifically want to calculate how much soy has actually been replaced. Through our activities, we expect to contribute to 7 of the 17 SDGs set by the UN: (2) No starvation, (3) Good health and wellbeing, (9) Innovation, (12) Responsible consumption and production, (13) Climate action, (15) Living in rural areas, and (17) Partnership to achieve goals.

Case Study: Krijg de Kleertjes

Every parent knows how fast children grow and that it is almost impossible to keep buying clothes that fit. That is why four mothers set up *Krijg de Kleertjes*: a network in which parents can exchange children's clothing—not only physically, for example at someone's home, but also online. In this way,

parents do not have to buy expensive new clothes again and again. That saves a few pennies, but it is also a lot better for the environment. At the end of 2017, *Krijg de Kleertjes* calculated that after five years the network had reused an estimated 10,000 kilograms of clothing, saving enough CO_2 to drive around the globe 12 times (www.voordewereldvanmorgen.nl, an initiative of ASN Bank).

Case Study: Bea the Bee

This case revolves around the recycling of plastic waste in order to develop education packages about DIY insect hotels which are sold to schools. To determine the impact of insect hotels and the education package, we have chosen the following indicators: (1) The weight of plastic recycled, (2) The number of insect hotels sold, (3) The number of people (children, parents, local residents) reached with this message. The education package has an impact on children and stimulates them to actively look for naturally occurring materials that they can fill their DIY insect hotel with. The educational materials that are supplied with the hotel, and the possibility of putting theory into practice immediately, creates awareness among children of both the plastic problem and how they can contribute to fighting the decline of insects. Ultimately, we would like to know the number of bees and insects that will benefit from the insect hotels, but we are unsure whether measurement is actually feasible.

11.4 Assessment and Impact Reporting

Indicators are increasingly linked to measuring and reporting methods, which are frequently internationally established. These methods often present their own sets of sometimes complex indicators that one is often required to use. This means that there may already be an assessment or reporting method that you can (or perhaps even must) use, whether in part or in full. The (compulsory) application of established reporting methods could mean that conflicts arise between indicators that you have chosen yourself and indicators in the assessment and reporting methods that, for example, are used by a government. This context makes it all the more important to investigate what you could be held to account for in your own business model well in advance. Some examples of commonly used assessment and reporting methods are shown in Table 11.1. These may help you determine whether you can use any existing reporting methods.

Table 11.1 Examples of impact assessments and reporting methods

Measurement methods	Instruments
Impact	**Life Cycle Analysis** www.rivm.nl/en/life-cycle-assessment-lca/recipe www.pre-sustainability.com/ www.youtube.com/watch?v=cYOC8_jJcII
	Social Return on Investment www.socialvalueuk.org www.avance-impact.nl/nl/publicaties www.avance-impact.nl/av2015/content/uploads/2016/02/Impact_First_longread-definitief-bijgewerkte_afbeelding.pdf
Reporting methods	**Global Reporting Initiative** www.globalreporting.org
	Reporting 3.0 reporting3.org
	ISO 26000 mvonederland.nl/iso-26000/wat-is-iso-26000
Integrated Reporting	integratedreporting.org/

Applying these methods individually or in combination with each other remains challenging in practice. After all, novel and sustainable business models are developed within the existing, highly monetized society. Your new or modified business model will, therefore, always face financial requirements, and associated accounting and reporting systems. Not infrequently, this means that your efforts to create other values with your business model are eventually evaluated from a linear accounting perspective. Here we strongly advocate for the use of multiple indicators (not just financial indicators) so that you are not forced to monetize by definition. We are talking about clean air, promoting biodiversity, or, at a higher abstraction level, striving for a restorative and regenerative economy, not to mention promoting happiness.

11.5 Keep It Simple

We have come to the end of a challenging chapter addressing an important building block: Impact. While it is relatively easy in the process of selecting indicators to keep refining by adding things, before you know it you will have created a maze of indicators and sub-indicators. The question remains as to whether you or your team actually understand precisely

what those indicators measure, whether measurements are feasible in practice, and how these indicators are related. Identifying proper and useful indicators and measuring and monitoring them is easier said than done. For those of you who want to explore the complexity of indicators in greater detail, we refer you to the European Commission's Sustainable Development Indicators: www.ec.europa.eu/environment/sustainable-development/strategy/monitoring/index_en.htm.

Whatever you do, stick to the motto *Keep it simple*. Fewer indicators is more, as long as they cover the key impacts you want to demonstrate. For additional orientation, also look at how other companies or projects have dealt with this question. Then develop your own indicator dashboard, and first and foremost test it. So this is an additional external test after Building Block #8—External Test, and may cause you to revisit earlier steps and building blocks in the Design and Definition Stages. So be it—the BMT is intentionally an iterative process.

References

De Fruitmotor. (n.d.). *De Fruitmotor.* Retrieved on 19 May 2019 from: www.defruitmotor.nl/.

Eurostat. (n.d.a). *Indicators Eurostat: Which indicators are used to monitor the progress towards a circular economy?* Retrieved on 19 May 2019 from: ec.europa.eu/eurostat/web/circular-economy/indicators.

Eurostat. (n.d.b). *Indicators Eurostat: SDG indicators: Goal by goal*. Retrieved on 19 May 2019 from: ec.europa.eu/eurostat/web/sdi/indicators.

Het Groene Woud. (n.d.). *Sappig – Puur, (h)eerlijk sap…uit Het Groene Woud | Het groene woud.* Retrieved on 19 May 2019: from www.hetgroenewoud.com/initiatieven/sappig—het-groene-woud-vruchtensapp.

Het Groene Woud-ei. (n.d.). *Home – Het Groene Woud-ei*. Retrieved on 19 May 2019 from: www.groenewoudei.nl.

National Institute for Public Health and the Environment. (2019, June 16). *LCIA: Het ReCiPe model*. www.rivm.nl/en/life-cycle-assessment-lca/recipe.