

## TOWARDS TRIPLE IMPACT

*Toolbox for Analysing Sustainable Ventures  
in Developing Countries*



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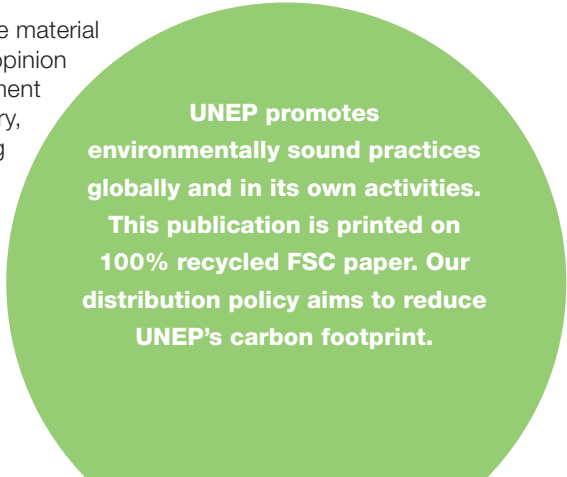
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# **Towards Triple Impact**

## **Toolbox for Analysing Sustainable Ventures in Developing Countries**

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# Executive Summary

Sustainable ventures can make a significant contribution to poverty alleviation and environmental sustainability. These business initiatives and activities improve human well-being and the environment on a profitable basis (people, planet, profit), contributing to decoupling economic growth and improvements in well-being from natural resource use.

Developing and managing sustainable ventures is a challenge. Key questions related to the identification of opportunities, the understanding of the determinants of success and the assessment of costs and benefits appear repeatedly.

This document introduces a toolbox that helps to answer such questions. It addresses initiatives that support sustainable ventures including donor programmes, award schemes, private and public investors, professional education programs and policy makers. They can use the tools to systematically identify, evaluate, advise, and promote sustainable ventures.



## Goal and approach

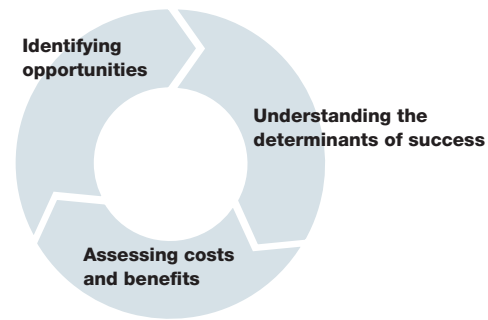
Sustainable ventures leverage opportunities to improve human well-being while contributing to environmental sustainability in ways that are scalable and replicable. They are initiatives on the micro-level, operated by businesses, but also by non-profit or public actors. Because they manage to align environmental, social and economic goals, they can make an important contribution to some of the most pressing current global challenges: the alleviation of poverty, guided by the Millennium Development Goals, and the maintenance of global environmental goods such as a sound climate and rich biodiversity. This publication highlights many examples of such ventures.

Developing and managing sustainable ventures is a challenge. Business models for these ventures are often new or need to be developed. Hence, experience with regard to their feasibility and growth potential is often lacking. Moreover, managing an initiative with more than one goal increases complexity. Systematic analysis can help to identify, evaluate, manage and promote sustainable ventures. But unlike for mainstream business ventures, tools to support such systematic analysis are currently not available. This document introduces a toolbox to analyse sustainable ventures.

The toolbox addresses initiatives that support sustainable ventures: Donor programmes, award schemes, private and public investors, professional education programs, policy makers and others. These initiatives contribute to the success of sustainable ventures through funding, facilitation, capacity building, and the creation of an enabling environment. Through their activities, they can encourage and enable more systematic approaches, e.g. through providing incentives by requesting structured information for their application procedures. The tools can be used as a basis for business plan application frameworks or loan and grant proposal requirements. They can also help to inform, train and support ventures in using an analytical approach. Communication and teaching material as well as the structure of workshops or advice and consulting programmes can build on the tools. In order to be applicable to all these different users and uses, the tools are kept flexible and generic. Support initiatives can specify and simplify them according to their own needs.

The tools respond to three questions that appear over and over again in the process of building and managing a sustainable venture:

- Where are opportunities to create value by meeting needs better and more efficiently?
- What factors determine the success of the venture?
- What are costs and benefits of the venture for the business, society and the environment?

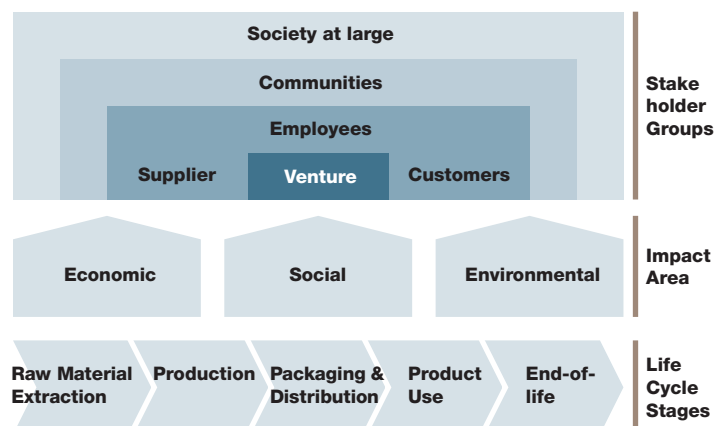


The guidance document provides frameworks to systematically address each of these questions. The figure above shows the three analytical elements of this guidance document, and how they can relate.

## Taking a systemic perspective

Sustainable ventures need to take a systemic perspective on processes of consumption and production in order to find ways to profitably maximize well-being while minimizing the strain on the environment. Poverty alleviation and environmental sustainability are intricately linked, as the poor in developing countries rely heavily on natural resources and ecosystem services and increases in well-being often go along with increased resource use. The challenge of sustainable ventures is to decouple improvements in well-being and economic development from the unsustainable use of natural resources. Because consumption and production processes are deeply intertwined and impacts can be shifted along the life cycle, between stakeholder groups and between different kinds of impacts, it is important to maintain an eye on the whole system surrounding the venture, using three perspectives throughout:

- The triple bottom line perspective considers the social, environmental and economic costs and benefits of a venture.
- The life cycle perspective considers all the steps in the consumption and production process, from raw material extraction to disposal, reuse or recycling.
- The stakeholder perspective considers the relation between the venture and the actors it impacts or is impacted by.

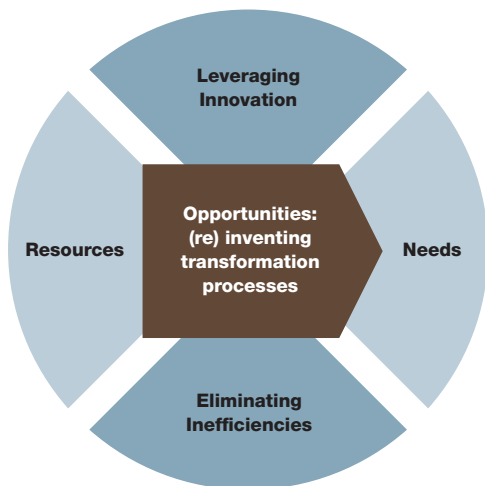


## Identifying opportunities

The chapter on Identifying Opportunities provides directions on how to scan the landscape for possibilities to align economic, social and environmental objectives. Four guiding questions can help:

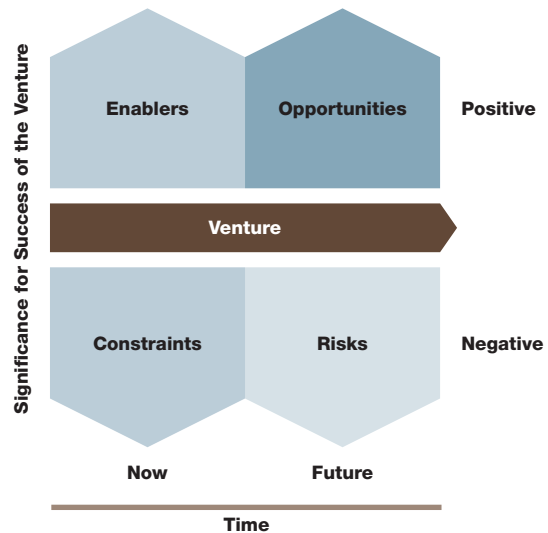
- **Needs:** Where do significant opportunities exist to improve well-being? Where do needs remain unmet? What basic opportunities are people missing?
- **Resources:** What resources exist to respond to needs and improve well-being? Are there resources that are renewable, in greater supply or even unused resources that could replace or complement the ones currently used?
- **Inefficiencies:** Where are resources wasted in the life cycle? Where could efficiency be improved to 'do more with less'?
- **Innovations:** Are there opportunities to leap-frog to more efficient ways of consumption and production? What are new technologies and approaches (regarding products, processes or business models) that could improve efficiency?

These four 'lenses' for identifying opportunities can be summarized illustratively in what we call the 'Sustainable Venture Crosshairs' (see figure).



## Understanding the determinants of success

The second chapter, on Understanding the Determinants of Success, shows how to systematically revisit the factors inside and outside the venture that will affect its development and growth. Success is determined by the current situation of a venture, the enablers and constraints it faces, but also by future changes, which could signify risks and opportunities for the venture. The figure below illustrates the four dimensions:



- **Enablers:** Who are the stakeholders that support the venture? What are the economic, environmental and social resources and capabilities that enable the venture? What are the strengths within the life cycle of the venture?
- **Constraints:** Who are the stakeholders who oppose the venture or hamper its progress? What economic, environmental or social resources and capabilities are missing and limit the development of the venture? What are the weak links in the life cycle?
- **Opportunities:** Who are the stakeholders that might positively impact the venture in the future? Could there be changes in the availability of economic, social or environmental resources and capabilities that will potentially benefit the venture? Might there be changes within the life cycle that could contribute to the success of the venture?
- **Risks:** Who are the stakeholders that might negatively impact the venture in the future? Could there be changes in the availability of economic, social or environmental resources and capabilities that will potentially harm the venture? Might there be changes within the life cycle that could damage the venture?

Understanding these factors is crucial to manage the venture for the best outcome.

### Assessing costs and benefits

The last tool, to help assessing costs and benefits, shows how to identify, measure and compare the social, environmental and economic costs and benefits of a sustainable venture. Costs and benefits fall on different groups and individuals at different stages of the life cycle of products and services and within different impact areas. To cope with this complexity, systematic fact gathering is useful to provide the basis for planning and decision-making (ex-ante) or evaluating impacts (ex-post).

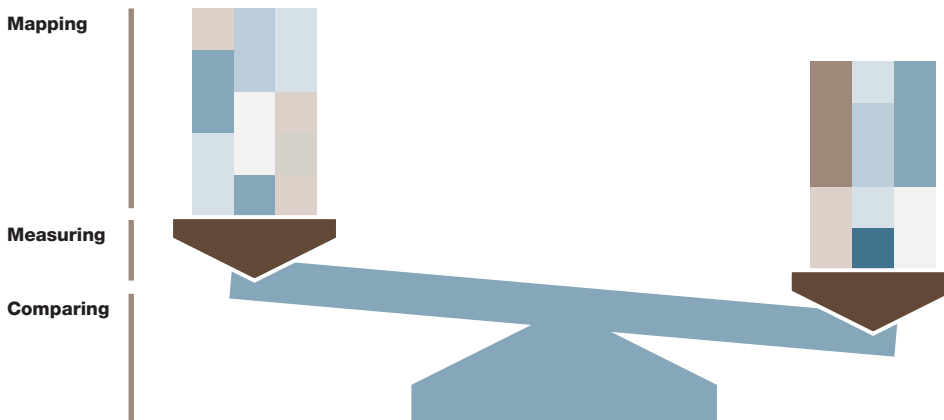
A full assessment can be structured in three stages:

- **Mapping impacts** helps ventures identify where and how their activities affect the venture and other stakeholders.
- **Measuring impacts** provides suggestions on how to define useful indicators and gather the data.
- **Comparing impacts** provides some hints on how to aggregate and integrate the gathered data to compare different ventures or courses of action.

### Applying the toolbox

Support initiatives can apply the three tools in a number of ways for their own programs. They can use them to:

- **Assess initiatives.** For example, this data can be used to decide whether a certain venture merits support or to develop highly targeted support programs.
- **Structure applications and reporting activities.** A clear structure guides ventures, reveals critical data and can lead to self-discovery of areas for improvement in the process. It also helps support initiatives to compare reports.
- **Promote and teach an analytical approach.** The frameworks can be used as a basis for capacity building programs about developing and managing as well as analysing and assessing sustainable ventures.





# Introduction

## Chapter 1: Goal and Approach

### **Developing and managing sustainable ventures is challenging:**

They are often based on new business models with little experience, they often consider social, environmental and economic impacts simultaneously, and take into account the stakeholders affected by these impacts as well as their interaction within the whole life cycle of a product. Standard business planning tools do not reflect these particular challenges. Targeted tools are not yet available. The document thus responds to these gaps and presents a set of tools for the analysis of sustainable ventures.

Sustainable ventures can benefit from systematic analysis to identify, evaluate, manage and communicate opportunities:

- The T'ikapapa initiative developed an innovative marketing concept for Peruvian native potatoes, which have been cultivated in the Andean region for over 8000 years. Identifying this forgotten and unique resource as a new business opportunity, the International Potato Institute (CIP) contributed to alleviate poverty among small scale Andean farmers while conserving Peruvian biodiversity.
- Usine Semi-Industrielle de Séchage Solair (USISS) is a small enterprise in the capital of Mali that dries meat and mango using solar drying equipment. The products are of higher quality than those dried in the open air. They are distributed in Bamako by ambulant vendors and small supermarkets. USISS generates much needed income for the owners, distributors and employees. An analysis of present enablers and constraints as well as future risks and opportunities identified areas for improvement, which can help to maintain and scale up the venture.
- Manila Water Company, a Philippine utilities company, was awarded a 25-year concession contract in 1997 to provide water and wastewater services to the East zone of Metro Manila. The concession was designed with aggressive five-year performance targets in areas including water coverage, quality of service and non-revenue water. Non-performance would be met with financial penalties. Manila Water first focused on improving existing infrastructure by eliminating water loss from leaky pipes and illegal connections. System losses were reduced from 63 percent in 1997 to 24 percent in 2007. Second, to expand the water network, the company realized that its greatest opportunity was in the areas of greatest need: low income communities. Manila Water used flexible business models in a decentralized organizational structure to adapt water services for individual communities. It now serves more than 214,000 poor households (up from only a handful in 1997). Systematic assessment of costs and benefits, based on clearly defined performance targets, helps the company to continuously pursue further improvements.

This document is about making informed decisions regarding the management and support of sustainable ventures. These decisions must consider the impact of an activity as part of a whole system. Taking such a systemic perspective helps entrepreneurs to identify opportunities for improvement, take action to increase benefits and avoid costs, mitigate risks and ensure the long-term survival and growth of the venture. It is important for support initiatives with an interest in the public good to understand the full impacts of a venture, create incentives to achieve the best outcome for all and remove barriers and risks to improve the playing field. In short, information of this kind is important to be able to use finite

resources in a way that creates most value for all, including future generations. This is precisely what sustainability is about: to increase human well-being within the limits of the carrying capacity of the earth.

Efficient use of resources is especially important for the poor. They have very limited resources at their command, but the need for improvements in well-being is large. The analytical framework and the examples presented in this document can help to find these opportunities and to increase their impact.

## 1.1 What 'Sustainable Ventures' Are Considered Here?

Sustainable ventures are initiatives on the micro-level that manage to contribute to human well-being, environmental sustainability and economic development. They are mostly led by for-profit, but also by non-profit, community or public organizations. The focus of this document is on ventures in a developing context.

Examples of business models that can positively impact the poor, the environment, and the business come from all sectors and regions. They encompass ventures that include the poor in production processes in an environmentally sustainable way, like organic farming and fair trade or carbon-neutral animal husbandry. They also include businesses that deliver products and services, such as water, sanitation, waste management, electricity, or consumer goods, to the poor as consumers in a resource efficient and environmentally friendly way. Manila Water, USISS and T'ikapapa are three examples that have been analysed in depth to inform the preparation of this guidance document.<sup>1</sup> The document also highlights many other examples to illustrate the richness of existing ideas and stimulate new ones.

The guidance document builds on the ideas developed in the field of 'Sustainable Consumption and Production' (SCP). In 1987, the Brundtland Report defined sustainable development as "development that meets the needs of the present generation without compromising the ability of future generations to meet their needs." (WCED 1987). In 2002, The Johannesburg Declaration put the need for more sustainable ways of consumption and production high up on the agenda. In its Plan of Implementation, the declaration calls for the establishment of a 10 Year Framework of Programmes to work in this direction. The 'Marrakesh Process' has been set up to support the elaboration of this Framework and coordinate the activities of national actors. This document

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**1. The case studies will be published separately in full length. This document includes only short feature stories highlighting particular aspects of the cases.**

feeds into this process. The Framework will be negotiated by countries at the 19th session of the UN Commission on Sustainable Development in 2011.

### A widely used definition of SCP states:

SCP refers to the production and use of goods and services that respond to basic needs and bring a better quality of life, while minimising the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardise the ability to meet the needs of future generations.

*Norwegian Ministry of Environment, Oslo Symposium, 1994*

In simple terms, SCP is about maximizing human well-being that can be achieved while ensuring a sustainable use of natural resources. An important contribution of the work on SCP was the understanding that sustainability required a systemic approach, which would take a whole system of consumption and production, or a whole life cycle, into account, not just isolated parts.

SCP has also led to some concrete areas where these ideas are implemented, such as Cleaner and Safer Production, Life Cycle Management, Sustainable Product Design, Sustainable Consumption, Eco-labelling or Sustainable Procurement.<sup>2</sup> All of these areas are important for and are applied within sustainable ventures in the context of poverty. Despite its strong grounding in the ideas of SCP, the document will simply refer to sustainability as a guiding concept in order to avoid unnecessary jargon.

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2. In depth resources are available on all these specialized topics, for example:  
 UNEP website on Sustainable Procurement  
<http://www.unep.fr/scp/procurement/>  
 UNEP website on Cleaner and Safer Production  
<http://www.unep.fr/scp/sp/programme/background.htm>  
 OECD Study on Cleaner Production  
 (OECD (1995): Promoting Cleaner Production In Developing Countries.  
 The Role Of Development Co-Operation);  
 UNEP website on Ecolabelling in Africa  
[http://www.unep.org/roa/Projects\\_Programmes/African\\_Ecolabelling\\_Mechanism/index.asp](http://www.unep.org/roa/Projects_Programmes/African_Ecolabelling_Mechanism/index.asp)  
 UNEP website on Sustainable Design  
<http://www.unep.fr/scp/design/>  
 UNEP Study on Sustainable Consumption  
 (UNEP (2001): Consumption Opportunities. Strategies for Change. A Report for Decision-Makers)

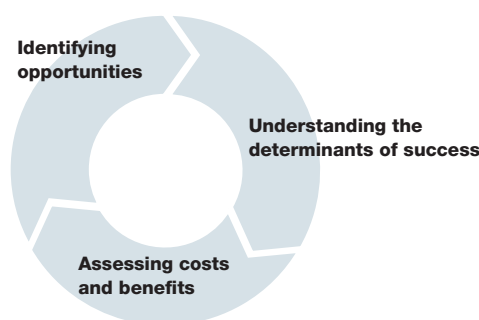
## 1.2 What Kind of Analysis Is This About?

Three questions appear over and again in the process of building and managing a sustainable venture:

- Where are opportunities to create value by meeting needs better and more efficiently?
- What factors determine the success of the venture?
- What are the costs and benefits of the venture for the business, society and the environment?

To answer these questions, decision makers need to take into account a multiplicity of information. They need to consider their own options within a whole system of dynamic relevant factors. Because these decisions are so complex, it often seems easiest to follow one's gut feeling. And yet, systematic analysis can help to generate a much clearer and thought-out basis for decision making and, as a result, better, more effective decisions. Analysis of this kind is also important for outside stakeholders, such as investors, policy makers, or customers: it creates transparency and accountability and thus helps to gain their commitment and support.

The tools in the following chapters help to take such an analytic approach. They are purposefully kept simple and generic, so as to allow each user to adapt them to their own specific needs. The figure below shows the three analytical elements of this guidance document and how they can relate:



**Figure 1: Toolbox for Analysing Sustainable Ventures**  
 Source: Authors' analysis

**Identifying Opportunities** provides directions on how to scan the landscape for opportunities;

**Understanding determinants of success** shows how to consider the constraints, enablers, risks and opportunities for maintaining and developing a venture further;

**Assess costs and benefits** shows how to identify, measure and compare the social, environmental and economic costs and benefits of a sustainable venture.



The circle also shows that these analytical tasks are closely related. A full understanding of a venture includes answers to all three areas: What is the opportunity? What influences its success? What is its real impact? Ideally, one will move from identifying an opportunity to understanding its feasibility and finally estimating the impact, moving on to the next opportunity from there. This applies as much to building new ventures as to improving and expanding on existing ones. And yet, systematic analysis will not be necessary at all stages. Users can apply the frameworks independently of each other. Sometimes, users will be interested in the impact of one particular venture, and hence will focus on 'assessing costs and benefits'. Sometimes, it is unclear to what degree positive impacts can be scaled up, and thus 'understanding the determinants of success' will be of main interest, and so forth. Accordingly, the chapters in the toolbox are also independent from each other and need not be read in sequence.

### 1.3 Who Should Read This Document and Why?

The document can directly help entrepreneurs with their analysis. Yet, it primarily targets initiatives that support sustainable ventures. These include, but are not limited to:

**Public and private investors**, such as banks or venture capital funds, that provide loans and equity to sustainable ventures;

**Awards schemes**, such as business plan competitions or fellows programs, that identify and support sustainable ventures and entrepreneurs;

**Relevant aid programmes** such as those aiming for private sector development, rural development or sustainable livelihoods;

**Public policy initiatives** on the international, national and local level to enable and encourage more sustainable ventures;

**Professional education institutions** such as those offering masters of business administration (MBAs), masters of public administration (MPAs) or executive education programmes that teach how to develop and support sustainable ventures.

These initiatives can support sustainable ventures at all stages, from idea generation via design and implementation to scale up and expansion. Apart from financial support, their main contribution is often to coach entrepreneurs and help them to

make better decisions. However, unlike initiatives that support mainstream business ventures, those initiatives cannot rely on widely established and applied analytical concepts and frameworks to guide their work. Here lies the contribution of this document: a set of tools that help to identify, evaluate, manage and communicate sustainable ventures.

The rationale for addressing this document at support initiatives is twofold:

- Entrepreneurs often have neither the incentives nor the capacities to go through a structured analytical process to develop their ventures. Support organizations can provide the incentives, guidance and training to encourage and enable more systematic development of ventures.
- Many support organizations are looking for tools to enable a more structured approach to their programs. Providing a guiding framework to them can enable the development of a standardized approach for assessing sustainable ventures. Support organizations also can reach out to their constituencies and adjust the generic frameworks to their particular circumstances.

Support initiatives can apply these frameworks in a number of ways for their own programs. They can use them to:

#### **Assess initiatives they support.**

For example, this data can be used to decide whether a certain venture merits support or to develop highly targeted support programs. Assessments can also consider the costs of no action.

#### **Structure applications and reporting activities.**

A clear structure guides ventures, reveals critical data and can lead to self-discovery of areas for improvement in the process. It also helps support initiatives to compare reports.

#### **Promote an analytical approach.**

The frameworks can be used as a basis for capacity building programs to develop, manage, analyse and assess sustainable ventures.

The tools are generic and need to be adapted to the specific needs of the initiative. This can include an application for a specific country, region or sector. Business plan competitions can build on the tool 'understand the determinants of success' and create a questionnaire that guides strategic analysis of their applicants. Public policy initiatives can use the tool 'identifying opportunities' as a basis to guide a structured sectoral or regional stakeholder dialogue to reveal promising areas of engagement. Investors with a public interest can demand cost benefit assessments that report on clearly determined outcomes for certain stakeholders, like the poor, or in certain impact areas, like climate change.

The applications are unlimited. But like in mainstream business, it is desirable to work towards a basic common standard, which will facilitate communication and coordination among all these different intermediaries and reduce reporting costs for ventures. The toolbox offers both a basis for individual adaptation and for standardization of analytical tools to guide sustainable ventures.

The final users of these (adapted) tools will often be the entrepreneurs of sustainable ventures themselves. They can use them for a number of purposes, such as:

#### **Building new business:**

Before starting a new venture, entrepreneurs need to identify a market opportunity, understand its likelihood to succeed and forecast the costs and benefits.

#### **Managing:**

Knowing and keeping track of the costs and benefits of a venture is important to achieve the goals of the business in terms of profitability and growth, but also social and environmental impact. Being aware of the factors that determine the success of a venture allows entrepreneurs to systematically build on enablers and opportunities and deal with or even avoid constraints and risks. Systematic scanning for opportunities can also enable the continuous improvement of an existing venture.

#### **Scaling up and replicating:**

To grow a venture, a good understanding of the market conditions and determinants of success is crucial.

#### **Communicating:**

Creating transparency and communicating the costs and benefits of a venture on society and the environment can help to generate acceptance from important stakeholders. Being able to provide evidence of the positive impact of a venture increases the value of a brand and reduces brand risks.

#### **Receiving funding:**

Being able to provide a clear assessment of costs and benefits as well as market conditions of one's venture facilitates access to funding from loans and equity. Funding may also be supplied at preferential conditions if effects for society and the environment are shown to be positive.

Throughout, the document is written for users that are new to the field, not experts. Three principles guide the writing. The document is designed to be:

#### **User friendly:**

Frameworks are kept very simple and are explained step by step. The language avoids jargon and uses widely understood and intuitive concepts where possible. Illustrations and examples are used throughout.

#### **Action-oriented:**

At every stage, the relevance of the analytical frameworks for real life activities and their application to concrete problems is explained and illustrated.

#### **Concrete:**

Analysis and analytical frameworks for sustainable ventures are by nature abstract; they only become concrete where they are applied to examples. This is why examples are used for each message and an effort has been made to link abstract statements with concrete concepts wherever possible.





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# Introduction

## Chapter 2: Taking a Systemic Perspective

Sustainable ventures manage to align economic, environmental and social objectives. Therefore, they play an important role in one of the great challenges of humanity today: how to afford well-being for all while maintaining a sound natural environment?

Sustainable ventures are initiatives on the micro-level. But their impact reaches beyond the individual venture and affects many stakeholders along the life cycle in different ways. To understand and influence these broadly distributed impacts, it is important to maintain the whole system of consumption and production in mind for the analysis, using three perspectives throughout:

- The triple bottom line perspective considers the social, environmental and economic costs and benefits of a venture.
- The life cycle perspective considers all the steps in the consumption and production process, from raw material extraction to disposal, reuse or recycling.
- The stakeholder perspective considers the relation between the venture and the actors it impacts or is impacted by.

## 2.1 The Challenge of Sustainability

Why are sustainable ventures important? Because poverty alleviation and environmental sustainability are closely linked. None of the two can be fully achieved without the other. And both cannot be achieved at a large scale without ensuring financial viability.

### Alleviating poverty requires environmental sustainability.

We will not be able to sufficiently increase well-being for those who remain in poverty without finding ways to use our natural resources more efficiently. We simply don't have enough resources to generate well-being for all in the way we have done it so far for the one billion people in the industrialized world. For example, most nations have fired their economic growth with energy from carbon. There is a clear positive link between economic development and the level of CO<sub>2</sub> emissions, as Figure 2 below shows. But there is not enough oil or gas around to go along this path for the developing nations.

Maintaining environmental sustainability is also crucial for poverty alleviation because the poor rely heavily on natural resources and ecosystem services. Many of them live of agriculture as their main livelihood. A degraded natural resource base is often an underlying cause for hunger, health problems, loss of livelihoods and water scarcity. For example, desertification puts the health and well-being of 1.2 billion people in more than 100 countries at risk.<sup>3</sup> There

is justified concern that the burden of environmental damage falls more heavily on the poor than on those better off. To use one example on the global level, the agricultural land threatened by climate change is mainly in the developing world. Countries like Bangladesh stand to lose a great deal more than developed countries, physically and financially, from increased storms and a rising sea level (DEFRA, 2003). The same pattern repeats itself on the national level. Extreme natural disasters like floods and tropical storms tend to have a bigger impact on the poor because they are more vulnerable: they do not have the resources to build appropriate shelters or their homes are built on land where natural barriers for landslides and floods have been destroyed (Duraiappah, 2004).

### Environmental sustainability requires alleviating poverty.

The immediate and utmost concern of poor people is their survival and the survival of their children from day to day. Therefore, they cannot afford to think about the needs of future generations. For example, well over 50% of all tropical deforestation is due to slash-and-burn agriculture by displaced landless peasants.<sup>4</sup> Due to the lack of alternatives, the poor have little choice but to compromise their long-term resource base over short-term incomes.

3. Figure from <http://www.un.org/events/desertification/2007/sgmessage.shtml>

4. <http://home.alltel.net/bsundquist1/df4.html>

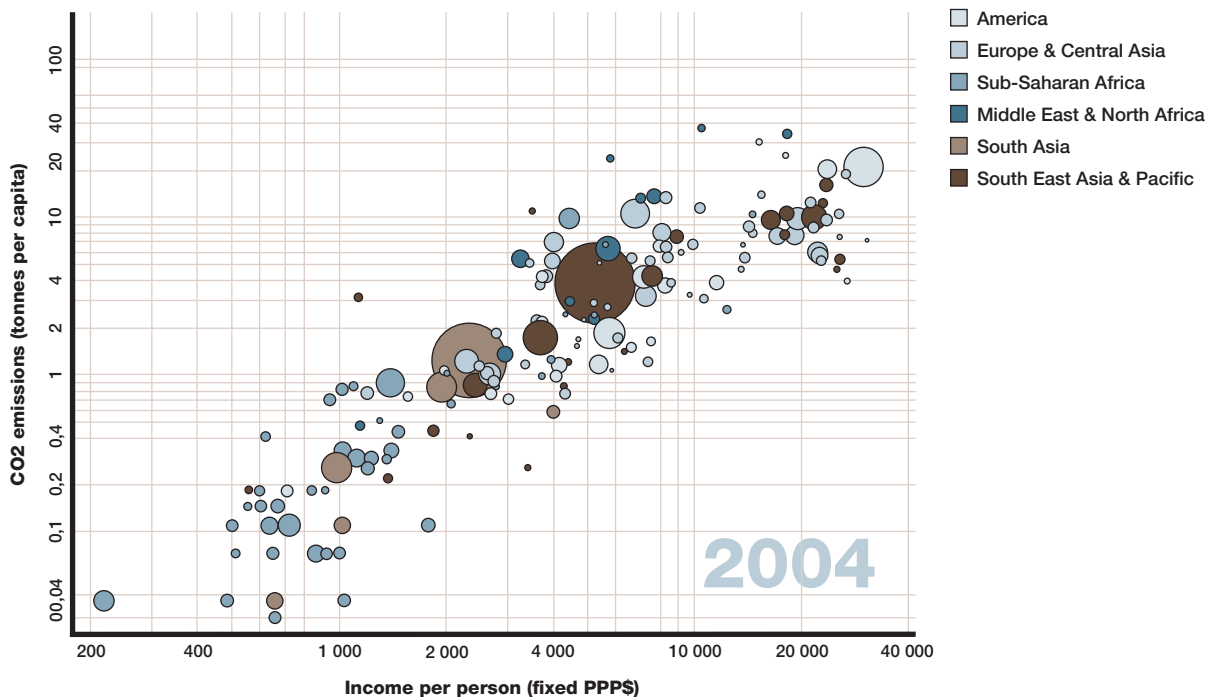


Figure 2: Income and CO<sub>2</sub> Emissions per Capita by Country (in 2004)  
Source: Gapminder, 2008

**Environmental sustainability and poverty alleviation require financial sustainability.**

Finally, we will not be able to tackle the global problems we are facing in the area of poverty alleviation and the environment if we solely rely on philanthropic or even public resources. Instead, there is a need for solutions that are financially sustainable and can therefore be scaled up and replicated to achieve large-scale impact.

**The challenge of sustainable ventures is to decouple improvements in well-being and economic development from the unsustainable use of natural resources.**

We must use fewer resources to provide more people with the food, water, energy, health, education, sanitation, entertainment and whatever else they might aspire to.

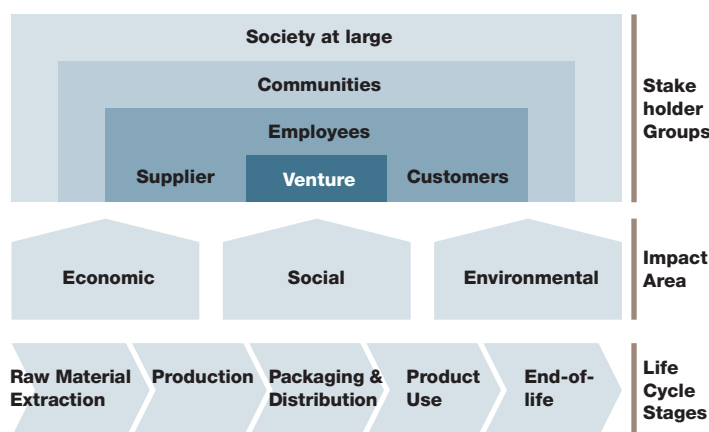
Leapfrogging can offer opportunities to access a more sustainable development path. Leapfrogging is a theory of development in which developing countries may accelerate development by skipping inferior, less efficient, more expensive or more polluting technologies and industries and move directly to more advanced ones. Ventures in developing countries can ‘leap’ to more sustainable modes of producing and consuming without having to pass through stages with unsustainable resource use. Examples include production of energy from renewable sources like wind, sunlight, or water without passing through a stage of carbon-based energy production or the implementation of clean production technologies in newly industrializing countries without passing through a stage of heavy pollution.

The challenge to find ever more resource-efficient ways of consumption and production is a continuous one, since savings in resource requirements per unit of consumption may be outstripped by increased consumption – a phenomenon known as the ‘rebound effect’. For example, the average unit of energy consumption of washing machines in the UK fell by 4.5% between 1999 and 2003, but total energy consumption of washing machines rose by 18.5%. The efficiency gains were offset by the increase in washing machines from 20.4 million to 25.4 million during this period (DEFRA, 2003).

Moreover, what appears to be a decoupling of well-being improvements and resource use can in reality be a mere shift of resource use from one group to another, from one stage of production or consumption to another or from one resource to another. Global value chains allow allocating the steps of the consumption and production process where they are performed most efficiently. As a result, resource-intensive steps are being relocated from industrialized to developing countries. For example, Europe has seen a relative decoupling in their direct resource consumption in recent

years. At the same time, progress of countries towards their development objectives has been uneven, and reduction in extreme economic poverty (people living under \$1 a day) has not been matched by progress on quality of life and environmental sustainability. Burden shifting could be one explanation for these trends. While the involvement in global value chains results in economic growth, this trend does not translate into social and environmental achievements due to the strain this resource-based growth puts on people and the environment (CSCP, 2007).

Burden shifting can lead to a redistribution of costs and benefits between different stakeholders along the life cycle. This can also go along with a shift in the kinds of costs and benefits. Financial costs are shifted to costs on health and safety, or environmental benefits are given up for the sake of social benefits. To design and manage a sustainable venture, it is important to keep the whole system of consumption and production in mind. This systemic view is characterised by three perspectives, on the triple bottom line, on the life cycle and on the stakeholders.



**Figure 3: Three Perspectives of Analysing a Sustainable Venture**





© D.light Design

### **D.light Design: Leapfrogging from Kerosene Lamps to LED light**

One in four people do not have access to electricity. In order to be able to work, cook or study at night, people living off the grid have to look for alternative solutions. These are often costly and threaten people's health and the environment. It is estimated that people who live off the grid spend around 15 percent of their income on alternative solutions like kerosene lamps. But kerosene produces high amounts of CO<sub>2</sub> and is

often the cause for indoor fires. The social enterprise D.light Design wants to replace every kerosene lantern in the world with safer, brighter, and more affordable lighting. It developed an energy-efficient product line based on the cutting-edge LED technology. LED lamps are several times more energy efficient than kerosene lamps. The lamps are currently being distributed in India. They are available in a solar powered version or with a battery that can be used and recharged in villages where there is an electrical power source.

*Source: D.light Design, 2008*

## 2.2 Triple Bottom Line

'Triple bottom line' is a widely used concept to describe that for a sustainable venture, what counts is not only the financial result or 'bottom line', but also and equally important the social and environmental result. This perspective is most important when assessing the costs and benefits of a venture. It also plays a role when ventures are identified and the determinants of success are assessed, because only where effects on people, planet and profit are kept in mind can they be balanced and improved.

### Social Progress and Human Well-Being

Human well-being is best understood as the opportunities one has to live a life one values. Poverty, in that sense, is the deprivation of even the basic opportunities to choose a life. This concept of well-being, or 'human development', is based

on the work of Nobel laureate Amartya Sen (e.g., Sen, 1999) and is widely used to guide poverty alleviation. He highlights the multidimensional nature of poverty. Lack of income and financial wealth is only one aspect of being poor. Poor people often suffer from hunger, malnutrition and bad health, they may lack shelter and security, be deprived of access to education, feel vulnerable and voiceless (Narayan et al., 2000). Sustainable ventures can help to meet basic needs, but also to provide people with new opportunities.

The eight Millennium Development Goals (MDGs)<sup>5</sup> are a framework to guide global action for poverty alleviation. Sustainable ventures can contribute to all of these goals.

5. <http://www.un.org/millenniumgoals/>

**Table 1: Possible Impact of Sustainable Ventures on MDGs**

Impact Area	Examples
<b>Poverty</b> 1. Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> <li>• Generate sources of income</li> <li>• Maintain and improve productivity of ecosystems and the diversity of services that they provide</li> <li>• Reduce vulnerability to environmental risk, such as natural disasters, flooding, droughts and climate change</li> </ul>
<b>Education and Gender</b> 2. Achieve universal primary education 3. Promote gender equality and empower women	<ul style="list-style-type: none"> <li>• Improve access to electricity for schools and private study</li> <li>• Relieve women and children from burdensome tasks like collecting firewood or water</li> </ul>
<b>Health</b> 4. Reduce child mortality 5. Improve maternal health 6. Combat HIV/AIDS, malaria and major diseases	<ul style="list-style-type: none"> <li>• Improve medical care for mothers and children with better medical equipment</li> <li>• Reduce the spread of malaria and other preventable diseases with bed-nets and better water and sanitation</li> </ul>
<b>Environment</b> 7. Ensure environmental sustainability	<ul style="list-style-type: none"> <li>• Improve the living conditions of slum dwellers, e.g. through improved housing, infrastructure and sanitation</li> <li>• Increase access to safe water and sanitation</li> </ul>
<b>Partnership for Development</b> 8. Develop a global partnership for development	<ul style="list-style-type: none"> <li>• Apply new technologies and create employment through partnerships with the private sector</li> </ul>

### Environmental Sustainability

Unsustainable consumption and production leads to three main types of negative environmental impacts (UNEP, 2001):

- Resource depletion – exhaustion of finite resources.
- Pollution – overloading of the environment’s capacity to disperse and process pollutants.
- Biodiversity and ecosystem service reduction – elimination of valuable ecosystem and species diversity.

Sustainable ventures can contribute to improvements in all three areas:

**Table 2: Impact Areas on Environmental Sustainability**

Impact Area	Examples
<b>Improve resource efficiency</b>	<ul style="list-style-type: none"> <li>Improve raw material productivity</li> <li>Improve energy efficiency</li> <li>Reduce waste</li> <li>Increase reuse and recycling of waste</li> </ul>
<b>Reduce use of toxic and hazardous material</b>	<ul style="list-style-type: none"> <li>Improve efficiency of use</li> <li>Replace with less harmful substances</li> </ul>
<b>Maintain and improve ecosystem services and biodiversity</b>	<ul style="list-style-type: none"> <li>Ensure continued provisioning of food and water</li> <li>Maintain regulating capacity, e.g. of climate and disease</li> <li>Maintain supporting services, such as nutrient cycles and crop pollination</li> <li>Build on cultural services, such as spiritual and recreational benefits</li> <li>Preserve genetical and species diversity</li> </ul>

### Economic Development

For the venture, economic impacts go beyond the pure short-term profits of an activity to consider the long-term economic potential. Sustainable ventures can develop new markets for sustainable products and better position themselves as producers for export markets. More efficient use of resources enables businesses to achieve cost savings for acquiring, processing and disposing of materials. Other stakeholders are also impacted in the economic sphere. Employees, business partners and customers can improve their income, communities and societies can improve their economic infrastructure, and the government may benefit from taxes.

**Table 3: Impact Areas on Economic Development**

Impact Area	Examples
<b>Improve profits</b>	<ul style="list-style-type: none"> <li>Increase customer demand and loyalty</li> <li>Increase willingness to pay</li> <li>Reduce material inputs</li> <li>Reduce operating costs</li> <li>Increase workflow efficiency</li> </ul>
<b>Increase income</b>	<ul style="list-style-type: none"> <li>Improve access to markets for own products</li> <li>Create access to employment</li> <li>Enable savings from better product-price performance products for consumers</li> </ul>
<b>Improve economic infrastructure</b>	<ul style="list-style-type: none"> <li>Generating know how and building capacity</li> <li>Build physical infrastructure</li> </ul>
<b>Generate taxes</b>	<ul style="list-style-type: none"> <li>Generate taxes for municipal, regional and national level</li> </ul>

## Sadia's Program for Sustainable Swine Production (3S program)

Established in Brazil, Sadia is one of the world's largest food processing companies. Assessing its swine production with a triple bottom line perspective, the company identified opportunities to improve effects on people, planet and profit.

### Environmental:

The 3S Program provides more than 3,500 swine producers with biodigesters. With these appliances, swine waste is fermented by bacteria in closed reservoirs, avoiding methane emission. In the process, the methane gas is converted into CO<sub>2</sub>, which is 21 times less intense in terms of greenhouse gas effects than methane. Such sequestration of greenhouse gases generates carbon credits under the Kyoto Protocol Clean Development Mechanism (CDM) that can be traded with other companies and countries in need of carbon offsets. In May 2006, Sadia sold the first 290,000 tons of carbon savings.

### Economic:

Through trading carbon credits, increased profitability of swine production can be accomplished, which benefits both the farmer and Sadia. For Sadia, the sale of carbon credits generates enough revenue to cover the cost of the

biodigesters. The 3S Program thus represents an opportunity to raise the suppliers' loyalty and develop a better partnership at zero costs. As low profitability of small farms has increased exodus to the cities, Sadia aims to increase farmers profits with the program and thus encourage them to stay in business. Gases captured from the biodigester can be used as energy, significantly saving operational costs. In addition, new business opportunities are created for the farmers, who can use the by-product from the fermentation process as food for fish breeding or as crop fertilizer that substitute chemical inputs and thus improve soil quality.

### Social:

The 3S Program also improves human well-being. The community surrounding the production appreciates the control of smells as well as health improvements due to improved quality of water and reduced soil pollution. The cleaner waste treatment also increases self-esteem of farmers, as they no longer have to deal with odor, rats and insects attracted by the waste. In addition, the 3S program is expected to help spread environmental education among swine producers and the surrounding community informing them e.g. on better use of natural resources and health related effects.

Source: UNDP, 2008

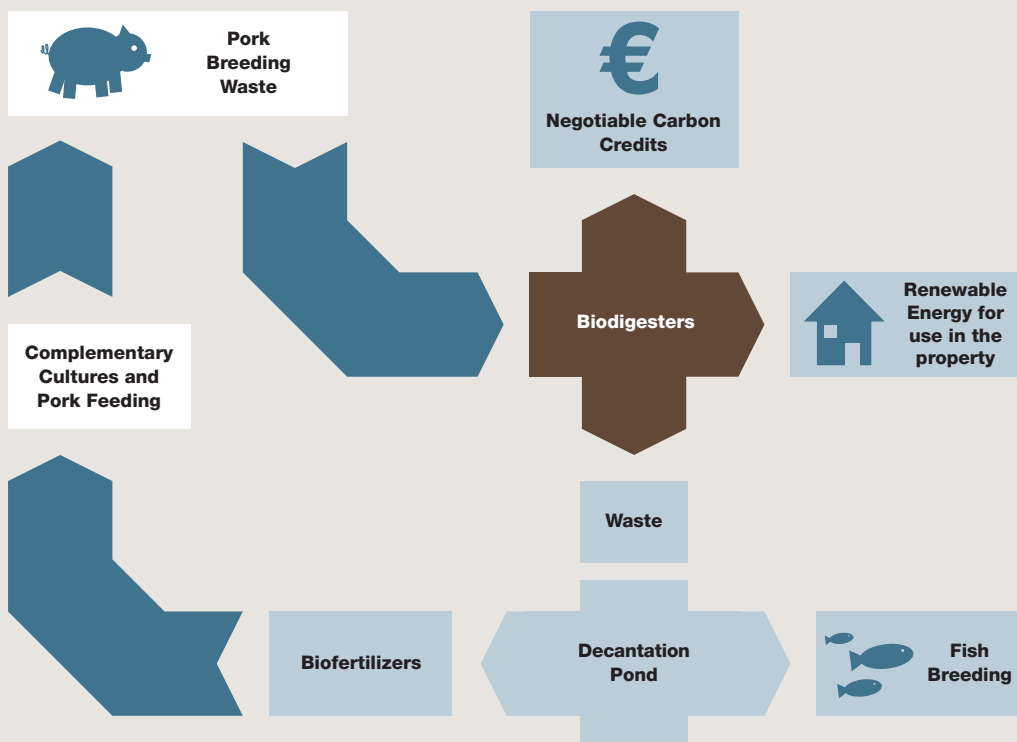


Figure 4: Sadia's 3S Sustainable Swine Program



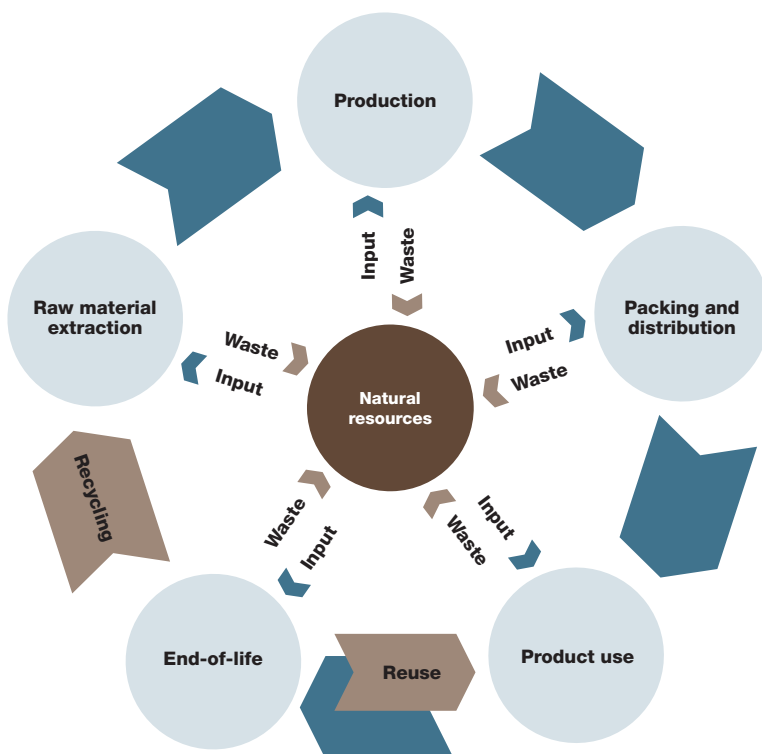
## 2.3 Life Cycle

Because consumption and production processes are deeply intertwined, and because the complexity of interaction is increasing with ever more disaggregated and globalized value chains, looking at one stage of the consumption and production process is not enough to increase sustainability. Instead, it is necessary to consider the whole life cycle of a product or service. A life cycle begins with extracting raw materials that are then produced, packaged, transported, used, and eventually recycled, reused, or disposed (see the illustration of the life cycle in Figure 5 below).

A life cycle approach allows understanding how choices influence what happens at each of the points in the cycle so as to balance trade-offs and positively impact the economy, the environment, and society. This way of thinking helps recognizing how individual choices and actions are one part of a whole system. Overall, life cycle thinking can promote a more sustainable rate of consumption and production and a more efficient use of our limited financial and natural resources. It enables increased value generation by optimizing output and deriving more benefit from the time, money, and materials we use (UNEP, 2004).

For a business venture, the life cycle of a product is largely reflected in its value chain. Value creation ultimately happens when the product is used. Getting to this stage requires a whole chain of activities from raw material extraction to production and distribution. The stage after the use of a product is often not considered part of the value chain, since traditionally the product was disposed without any value addition. Thus, the social costs from disposal mostly remained unaccounted for. This is changing, as more companies become aware that incorporating the end-of-life stage into their value generation via recycling and reuse can yield savings. A venture can be situated at any stage of the life cycle or incorporate various stages into its value generating activities. All ventures also interact with other participants of the value chain, such as suppliers, distributors, vendors and customers.

The life cycle perspective always considers all stages of the life of a product or service, whereas not all may be considered part of the value chain. Maintaining a life cycle perspective is useful to ensure that all impacts of a sustainable venture are properly reflected in the analysis.

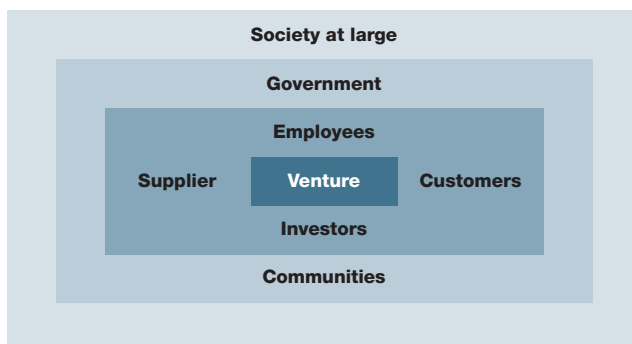


**Figure 5: Stages of a Product Life Cycle**  
Source: Adapted from UNEP, 2005

## 2.4 Stakeholders

A stakeholder is a party that is affected by or can affect a venture's action (Freeman, 1984). Any venture has a multitude of stakeholders, ranging from its immediate business partners, its customers, employees, suppliers and investors, via those with a more distant relationship, such as communities and governments, to society at large on the national and global level.

These different stakeholder groups are impacted to varying degrees by costs and benefits caused by the venture and its life cycle. But they also contribute resources and opportunities to the ventures, and, on the other hand, hold resources back if they cannot or don't want to support the venture. From the perspective of the venture, it is important to understand the relationships with its stakeholders to be able to create strong alliances based on mutual benefit. For a support initiative it is crucial to understand how a venture interacts with its stakeholders, especially if it is interested in maximizing the public good or the benefit for certain groups of stakeholders, such as the poor.



**Figure 6: Stakeholders of a Venture**

Source: Authors' analysis

The perspectives on the life cycle of the venture, its triple bottom line and its stakeholders ensures an understanding of a venture as part of a bigger system. This perspective is crucial to enable sustainable outcomes because it reveals situations where costs are simply shifted around in the system as well as opportunities to increase efficiency (in the sense of making some people better off without making others worse off).

# Toolbox



- 1. Identifying opportunities**
- 2. Understanding the determinants of success**
- 3. Assessing costs and benefits**

The toolbox introduces the three tools to analyse sustainable ventures. The triple bottom line perspective is maintained throughout, paying equal attention to all life cycle stages as well as the stakeholders affected.

To ensure an outcome that is widely accepted and useful, the following four principles should be applied for designing and conducting an analysis:

**Completeness:**

Taking all relevant issues into account.

**Participation:**

Using participatory methods (e.g. stakeholder interviews) in the different steps of the analysis to assure that the most important issues are covered and relevant opinions are heard.

**Transparency:**

Describing not only results, but also the process that led to these.

**Plan for usability:**

Consider the target groups for the results and how they will utilise the information produced for planning the analysis to improve the usefulness of results for decision-making in ventures or support initiatives.

# Toolbox

## Chapter 3: Identifying Opportunities



- 1. Identifying opportunities**
- 2. Understanding the determinants of success**
- 3. Assessing costs and benefits**

Opportunities to reduce poverty and increase the well-being of people while at the same time conserving natural resources in a financially sustainable way do exist. And yet, these opportunities are not always obvious or easy to find. In order to uncover them, it is useful to ‘scan’ one’s area of interest – be it water conservation, access to energy or clean water, income generation, technology transfer or new business generation.

### **For support initiatives, this tool is useful to:**

- Look for areas of engagement, for example by identifying areas of great need, and provide incentives to address them through targeted programs (such as award schemes with a certain theme or targeted public funding)
- Search for sustainable ventures that already offer solutions but may not be on the ‘radar screen’ of support initiatives yet

### **For entrepreneurs, it can be used to:**

- Find new business opportunities
- Improve the performance and reach of an existing business



### 3.1 Dimensions

Consumption and production is a process of transforming resources to meet needs. How well needs can be met with the resources available depends on the quality of the transformation process. Where needs are not met appropriately through the process or where the use of resources is unsustainable, the transformation process needs to be adapted. The two basic ways of adapting are: making the existing process more efficient by eliminating inefficiencies, i.e. areas where resources are wasted; and altering the transformation process altogether by leveraging innovation. Innovation in technology and product design, but also in the (re-)design of business processes and business models, often allows eliminating inefficiencies where this hasn't been possible before.

Opportunities can be identified for new ventures, but they can also be found within existing ventures. To identify these opportunities within a myriad of existing or potential activities, it is useful to take a close look at each of the four elements of the transformation process:

#### Needs:

Where do significant opportunities exist to improve well-being? Where do needs remain unmet? What basic opportunities are people missing?

#### Resources:

What resources exist to respond to needs and improve well-being? Are there resources that are renewable, in greater supply or even unused resources that could replace or complement the ones currently used?

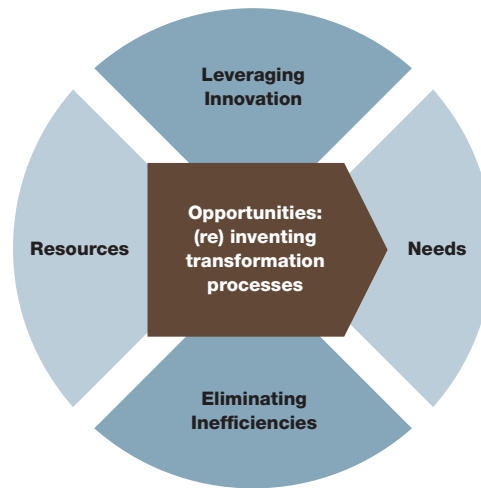
#### Inefficiencies:

Where are resources wasted in the life cycle? Where could efficiency be improved to 'do more with less'?

#### Innovations:

Are there opportunities to leap-frog to more efficient ways of consumption and production? What are new technologies and approaches (regarding products, processes or business models) that could improve efficiency?

These four 'lenses' for identifying opportunities can be summarized in what we call the 'Sustainable Venture Crosshairs':



**Figure 7: Sustainable Ventures Crosshairs**  
Source: Authors' analysis

Opportunities can be identified in each of the four lenses of the crosshairs:

#### Needs

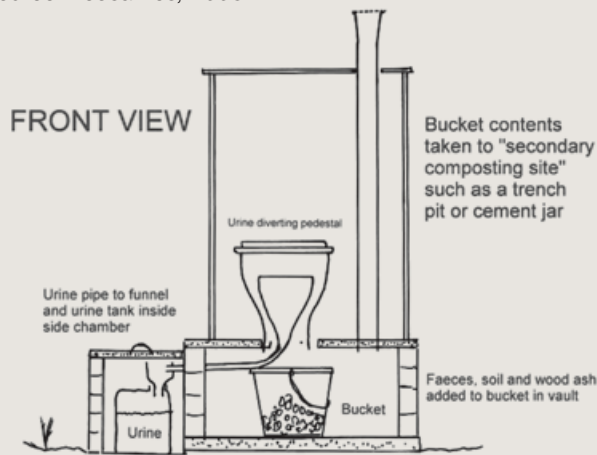
Human needs are diverse and range from the very basic needs to needs for being able to work and produce to social, creative, cultural and expressive needs. Poor people find many of their even basic needs unmet. More than a billion people lack access to clean water, 2.6 billion lack adequate sanitation. Many more people don't have access to products and services that would make them more productive: 1.6 billion lack electricity and 5.4 billion lack access to the Internet. These figures show the enormous opportunity of increasing human well-being by better meeting the needs of the poor.

While the challenges are global, ventures need to act on the local level and within their own area of expertise. They can start by asking which stakeholders in the life cycle have needs that the venture could respond to. Are there potential customers who are not being served with the venture's current offering? Could people from local communities gain income by being incorporated into the value chain? Are there farmers who need the water that is currently being used in one's production? Needs can arise on the social, economic and environmental level.

### Urine-separating toilet

Billions of people still lack access to proper sanitation. Unhygienic latrines are a major contributor to the spread of communicable diseases. Urine-diverting toilets could offer a solution to the many people who need better sanitation. These constructions offer a safe and sanitary way to deal with faeces, can be permanently sited as opposed to pit latrines, and don't require water. The basic setup of these toilets is such that urine is collected in a separate container. The dry conditions in the toilet kill most pathogens and parasites, including roundworm eggs, helping to reduce the incidence of disease. The treated human waste can be used as fertilizer, improving yields and reducing the need for chemical fertilizer. Urine diversion toilets are easy to build and have the potential to contribute significantly to MDG 7's target of halving the proportion of people without sustainable access to proper sanitation.

Source: *Ecosanres, 2008*



### Resources

Meeting needs requires the use of resources. Poverty is often characterized as a lack of resources. While it is certainly true that poor people often lack access to resources, they also lack ways to use their resources productively. In areas of structural poverty, people often don't have the know how, financial mechanisms, physical infrastructure, legal protection or other enabling conditions available to use the resources they have for their greatest benefit. Here lies an opportunity for sustainable ventures since they can activate these resources, be it land, labor, or local production, through their own business processes.

A venture could ask whether there are economic, social or environmental resources that could easily improve its output or impact among its stakeholders along the life cycle. For example, an energy business could see whether there are renewable resources, such as biofuel, that could be used for energy production instead of oil or gas. It could then see whether it could activate farmers to produce the necessary crops on unused land.



### Natura – discovering unique local resources

Natura, a Brazilian cosmetics company, started in 2000 with a strategy of using raw material extracted from the Brazilian vegetal biodiversity as a platform for its products. The Brazilian forest is rich in biodiversity and offers unique plants with exceptional qualities for cosmetics production. These plants were the basis for Natura Ekos Line, a very successful set of cosmetic products. In order to scale local production while guaranteeing sustainable extraction, the company built a new business model. It established relationships with rural communities that extract raw material from Brazilian vegetal biodiversity as suppliers. In Pará, three communities – Campo Limpo, Boa Vista e Cotijuba – were contracted in 2003 to produce piprioca, a kind of grass which roots yield a rare delicate fragrance. Business increased so much that in 2006 Natura built a new industrial plant to produce soap in the region.

Source: *UNDP, 2008*

### Inefficiencies

In some stages of the life cycle, more resources are used than are actually required. Eliminating these inefficiencies increases the productivity of resources. Because markets are often not functioning well due to the lack of enabling conditions, inefficiencies are fairly widespread in a developing context. Competition is scarce and often existing dominant players are protected through legislation. All this reduces the pressure on companies to improve their processes and eliminate waste.

Sometimes inefficiencies are quite obvious: water spills and leaks, soil erodes, waste piles up, staff is idle, financial capital does not deliver a return or is lost. Often, however, inefficiencies are not so easy to see. Clear metrics and knowledge of alternatives are required to know whether a generator could produce more electricity from the amount of straw fired into it or whether workers could have a greater output. Toyota has introduced the 'no waste' paradigm where all processes are continually reviewed by all process participants for inefficiencies, and even 30 years after the system has been introduced, inefficiencies are still being identified. Existing ventures can create a similar process by providing all stakeholders with incentives to report inefficiencies and suggest improvements. A new venture can gain an advantage over established competitors if it manages to eliminate an efficiency and thus to create relatively more value.

### Waste Treatment – BETL

Waste from industrial production is often simply disregarded as part of the value chain and sometimes considered a cost where fee-based waste management systems are in place. As yet, much of what is trashed as waste can actually be reused as a resource. More and more, smart waste management systems build on this inefficiency in the production system to create value. In Tanzania, Biomass Energy Tanzania Ltd. (BETL) collects biomass waste of the local industry that provides the waste for fuel substitution to local industries. Its main customer, Tanga Cement Company Limited (TCCL) has replaced 15% of the 44,000 tons of heavy fuels oil it used for energy production with unused renewable biomass. This led to cost savings for TCCL and numerous environmental benefits, including the decrease of greenhouse gas emissions estimated at 86,000 tons CO<sub>2</sub> during the loan period of 3 years. Furthermore, BETL creates value by working with women for the collection and transport of biomass. A woman who e.g. collects bags of charcoal dust in urban areas for the waste contractor used by BETL earns 25% more than the minimum wage in Tanzania. Sources: Napier-Moore, 2004; REED, 2005; AREED, 2008



**Biomass waste supplied by BETL being loaded to supply energy in cement production.**

### Innovation

Innovation allows to (re-)invent transformation processes and increase efficiency. Innovations also happen in the social, economic and environmental sphere. Scientific and technological advances are important enablers of innovation. Better seeds and agricultural inputs have increased the yield that can be achieved from a certain amount of land, more heat-resistant vaccines have allowed to reach more people and protect them from illness, technologies for producing energy from sun, wind and water have enabled access to electricity for many. But innovation does not always rely on technology. Low-tech products, process redesign and new business models

can have similar impact. Innovative agricultural practices can increase the yield while reducing inputs, innovative marketing concepts for traditional products can increase their sale, micro-franchise models of distributing medicines and providing medical advice provide access to health care to millions.

Innovations often take longer to reach developing contexts than other places. Factors such as lack of investment capital or lack of resources in the education and research system slow the spill-over of know how from one place to the other. Ventures can therefore benefit from research into existing innovations in their field. Innovations regarding products or processes can be found by attending international fairs, conferences or reviewing the relevant literature. Innovations regarding business models can be discovered by closely observing successful ventures even in other sectors or regions.

### Amanz' Abantu uses smart cards innovation for water distribution

Amanz' Abantu Services (Pty) Ltd. was established as a private South African company in 1997 with the aim of providing water supply and sanitation services for peri-urban and rural populations in the Eastern Cape, where one-quarter of the population lacked potable water. The company's water schemes pipe water from a river or other water source, and purify the water (where required) through treatment and filtration. A main barrier was to ensure that users would receive their 20 litres of free, government-funded water and be able to buy additional water. Innovation could be leveraged to solve this problem by introducing smart card technology. The smart cards are charged at local stores. Users then simply put the card into a slot in the standpipe and a hose shoots clean drinking water into a bucket. Before, villagers – mainly rural women – would walk up to several hours to obtain water from the nearest river or other source, putting themselves and their families at risk for water-borne diseases. The introduction of a safe water supply within 200 meters of their home has transformed their lives. Some villagers have also benefited from employment and capacity building in the construction of the water system. Source: UNDP, 2008

Looking at one's area of interest through these different lenses helps to systematically identify areas for improvement. It is a way to ask new questions about well-known situations. But how does one get from a good question to an opportunity? The Crosshairs can also be of help here. Starting at one point in the picture, one can fill in the other areas step by step.

## 3.2 Application

The Sustainable Ventures Crosshairs can support individual analysis. It can also be used to guide a participatory approach, where stakeholders identify opportunities together.

Individual analysis can proceed in different ways. What method to use can also depend on the maturity of the venture. Entrepreneurs looking for new opportunities can use it as a brainstorming tool, thinking through different target groups, life cycle stages, or browsing for innovations. For established ventures, the tool can guide systematic business development and continuous improvement processes. Goals can be defined for meeting needs and using resources – and these goals can then guide the (re-)invention of business processes. In this way, the crosshairs becomes a management tool.

Often, existing analysis can be used to inform the search process. Many studies exist regarding each of these four dimensions in sectors and countries. For example, the annual assessment regarding the achievement of the Millennium Development Goals that is conducted in many countries can reveal needs of certain stakeholder groups. Assessments by donors on value chains often identify inefficiencies and missing links. Innovations with regard to business models in the context of poverty are collected on a number of websites, via award schemes etc. (see 3.3 Resources).

Employees, suppliers, customers and other stakeholders can be incorporated in the process by providing channels to uncover hidden resources, point out inefficiencies and contribute innovative ideas. Other actors outside the venture can also play a role in pointing out opportunities. Policy makers can highlight unmet needs or unsustainable use of resources and provide incentives, through subsidies, regulation or taxation, to improve the relevant transformation processes. NGOs, communities and stakeholder advocacy groups can also show areas for improvement and work with ventures to address them. Researchers and scientists can communicate innovations that have the potential to improve transformation processes. And business and industry associations can help to share innovative ideas and know how about eliminating inefficiencies.

Structured stakeholder engagement processes can help a venture to make the best use of the capabilities of these different stakeholders. The crosshairs can serve as a framework to guide the stakeholder discussions and brainstorm ideas for how to better meet the needs of the poor via innovative and efficient means.

### **GrupeNueva's Employee Idea Competition**

In mid-2003, the Latin-American holding GrupoNueva launched the contest "Everybody wins: Imagine unimaginable businesses". Employees were asked to submit new business ideas for low-income markets. This contest was aligned with GrupoNueva's corporate value of encouraging employees to become proponents in the group's efforts toward sustainable development.

A total of 246 business proposals which targeted five low-income segments identified by the company were received. Out of these, twelve were selected for pilot projects. After one year, the progress of the projects was evaluated in financial and social terms. A small-scale irrigation project from Amanco Guatemala, a producer of water management systems, was selected as the winner given its outstanding results.

Amanco's project was to supply drip irrigation systems to small farmers in Guatemala. The business model offered integrated irrigation services including capacity building and access to credit. This could be implemented through partnerships with NGOs, commercial dealers and development banks. Between 2004 and 2005, 273 small farmers had benefited from Amanco's project in Guatemala, generating sales of US\$ 238,529. For 2006, a 42% increase was expected. The gross sales margin was 31%. Small producers were able to harvest twice as much (from two up to four times a year), with savings of 33% in terms of labour costs, yield increases of over 22% and water efficiencies of 50%.

*Source: UNDP, 2008*



### 3.3 Resources

Sustainable ventures can often be replicated or adapted from one location to another. The resources listed here offer repositories of existing sustainable ventures, which can serve as inspiration and benchmark for those looking for new opportunities:

Name	Description	Website
<b>Ashoka</b>	Support for social entrepreneurs	<a href="http://www.ashoka.org">www.ashoka.org</a>
<b>Acumen</b>	Venture capital for social entrepreneurs	<a href="http://www.acumen.org">www.acumen.org</a>
<b>Business in Development (BID) Challenge</b>	Business plan competition for inclusive business models	<a href="http://www.bidnetwork.org/set-44898-en.html">www.bidnetwork.org/set-44898-en.html</a>
<b>Design that matters</b>	Design for social enterprises in developing countries	<a href="http://www.designthatmatters.org">www.designthatmatters.org</a>
<b>Echoing Green</b>	Support for social entrepreneurs	<a href="http://www.echoinggreen.org">www.echoinggreen.org</a>
<b>MIT IDEAS</b>	MIT social business plan competition	<a href="http://web.mit.edu/ideas/www/index.htm">web.mit.edu/ideas/www/index.htm</a>
<b>New Profit Inc.</b>	Support for social entrepreneurs	<a href="http://www.newprofit.com">www.newprofit.com</a>
<b>NextBillion</b>	Blog with news on innovative sustainable ventures	<a href="http://www.nextbillion.net">www.nextbillion.net</a>
<b>Omidyar Network</b>	Support for social entrepreneurs	<a href="http://www.omidyar.net">www.omidyar.net</a>
<b>SEED Initiative</b>	Business plan competition for sustainable ventures	<a href="http://www.seedinit.org">www.seedinit.org</a>
<b>Shell Foundation</b>	Support programmes for the development of sustainable ventures	<a href="http://www.shellfoundation.org">www.shellfoundation.org</a>
<b>Schwab Foundation for Social Entrepreneurship</b>	Support for social entrepreneurs	<a href="http://www.schwabfound.org">www.schwabfound.org</a>
<b>UNDP Growing Inclusive Markets</b>	Case study database with business models for poverty alleviation	<a href="http://www.growinginclusivemarkets.org">www.growinginclusivemarkets.org</a>
<b>UNIDO/UNEP National Cleaner Production Centres</b>	Technical support for cleaner production	<a href="http://www.unep.fr/scp/cp/network/ncpc.htm">www.unep.fr/scp/cp/network/ncpc.htm</a>
<b>WBCSD</b>	Case studies of medium and large businesses	<a href="http://www.wbcd.org">www.wbcd.org</a> > case studies
<b>World Bank Development Marketplace</b>	Competition for sustainable ventures	<a href="http://www.developmentmarketplace.org">www.developmentmarketplace.org</a>
<b>World Challenge</b>	Competition for social ventures by BBC, Newsweek and Shell	<a href="http://www.theworldchallenge.co.uk">www.theworldchallenge.co.uk</a>

### 3.4 Case Study: T'ikapapa

Huancavelica, Apurímac and Ayacucho are amongst the poorest regions in Peru. And potato farmers are amongst the poorest people in these regions. A project of the International Potato Center (Centro Internacional de la Papa – CIP) aimed at breaking the cycle of poverty by providing poor potato farmers with better income opportunities. What resources did these people have available to build upon? Well, certainly potatoes.

The Peruvian native potato has been cultivated in the Andean region for over 8000 years. It typically grows between 2000 and 4000 metres altitude and is better adapted to the conditions there than other breeds. Around 3800 varieties of potatoes grow in the Andean region. They differ in color and size, flavour and cooking qualities. Some are brightly coloured inside and outside, strangely shaped, tasty and packed with vitamins. The yellow varieties have a high content of vitamin C and the purple ones contain substances that prevent cancer.

Until recently, these unique potato varieties of Peru were only sold on the local markets at low prices. The aim of the T'ikapapa (“potato blossom”) initiative founded by the CIP and its partners was to use this unique resource and generate higher value from it. But why had the special qualities of the native potato not been appreciated so far? Firstly, there was no demand or ‘need’ because consumers with a high ability to pay did not know about the potatoes. Secondly, processes from farm to market were inefficient and in no shape to guarantee consistency of quality and supply. The initiative addressed both issues.

A new and innovative marketing concept was developed to promote potato biodiversity conservation and bring the native potatoes to the national and international market. Through innovative partnerships with e.g. research institutions, service providers and retailers, processes, storage and quality of production were improved, marketing costs were kept low and the farmers gained access to new distribution channels for their product. The concept particularly addressed the gourmet niche, which was expected to value the unique characteristics of the native potato. Most gourmet consumers in upscale markets only had access to half a dozen varieties of potatoes. Marketing communication activities educated them on varieties and health benefits of native potatoes, which had up to then been perceived as ‘food for the poor’. The high end consumers proved willing to pay a premium price – which in the end benefits the farmers and their partners.

Source: CIP (2008)



© FoodCulturalMuseum

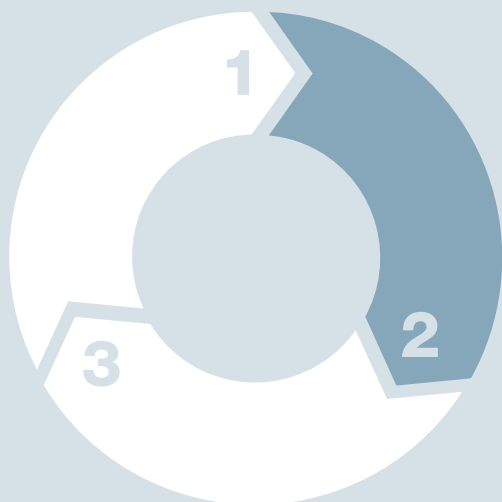




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# Toolbox

## Chapter 4: Understanding the Determinants of Success



1. Identifying opportunities
2. Understanding the determinants of success
3. Assessing costs and benefits

Understanding the factors that determine the success of a venture is crucial to assure its survival and increase its scale and outreach. The potential of a venture to sustain or improve its impact depends as much on its current situation as on future changes, and both need to be managed with foresight.

**Understanding the determinants of success for a venture is important for support initiatives:**

- to understand whether a venture has the potential to gain scale
- to provide advice to ventures based on the analysis
- to gain support for the removal of barriers on the macro level

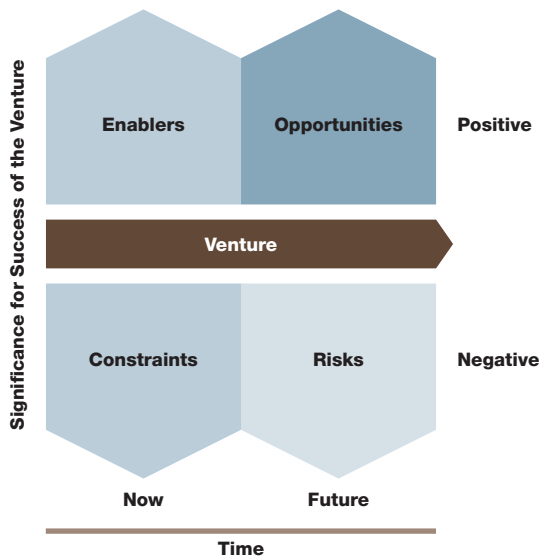
**It is important to entrepreneurs:**

- Before starting a new venture, to assess how likely it is to succeed or decide between alternative approaches.
- For existing ventures, to continually review their positioning and manage for sustainability and growth.



## 4.1 Dimensions

Success is determined by the current situation of a venture, the enablers and constraints it faces. It is also determined by future changes, which could signify risks and opportunities for the venture. The figure below illustrates the four dimensions of the determinants of success.



**Figure 8: Four Dimensions of Determinants for Success**  
Source: Authors' analysis

Constraints and enablers, risks and opportunities can be identified by applying the three basic perspectives: stakeholders, life cycle and triple bottom line. Guiding questions for the identification and assessment of these determinants are:

### **Enablers:**

Who are the stakeholders that support the venture? What are the economic, environmental and social resources and capabilities that enable the venture? What are the strengths within the life cycle of the venture?

### **Constraints:**

Who are the stakeholders who oppose the venture or hamper its progress? What are economic, environmental or social resources and capabilities that are missing and limit the development of the venture? What are the weak links in the life cycle?

### **Opportunities:**

Who are the stakeholders that might positively impact the venture in the future? Could there be changes in the availability of economic, social or environmental resources and capabilities that will potentially benefit the venture? Might there be changes within the life cycle that could contribute to the success of the venture?

### **Risks:**

Who are the stakeholders that might negatively impact the venture in the future? Could there be changes in the availability of economic, social or environmental resources and capabilities that will potentially harm the venture? Might there be changes within the life cycle that could damage of the venture?

## Enablers

Enablers are the foundations of a venture. They are the things that make it possible for the venture to succeed, and can range from access to finance to contacts in export markets. Each venture has its own set of enablers. Sustainable ventures often stand out for their spirited and visionary entrepreneurs that guide them. Ventures in a developing context can typically benefit from abundant labour supply and natural resources. For example, sustainable tourism is enabled by unspoilt natural habitats; community-based businesses can benefit from strong social networks and so forth.

### **Social Conditions as an External Enabler:**

#### **D.light Design**

Growing awareness for particular societal problems can contribute to a higher acceptance and support for the goals of social entrepreneurs. In the case of D.light Design, a company that provides innovative lighting to the poor, the growing attention for the problem of insufficient lighting solutions helped them to achieve appreciation and support for their own venture. The company reports that projects like “Lighting Africa” by the World Bank or the “Light up the World Project” contributed to a growing recognition that for-profit solutions and innovations are effective and necessary to achieve widespread access to light.

*Source: D.light Design, 2008, Interview with Angela Cheung, D.light Design*

## Constraints

Ventures in a developing context face many constraints. The most widespread are probably governance issues, lack of know how and access to finance. Both missing and excessive regulation can hold ventures back, but with a responsive government, both issues can be resolved. However, public administration often does not have the capacity to respond to the needs of ventures or to enforce regulation efficiently. Many ventures suffer from long procedures due to red tape and legal insecurity. Finding qualified staff can also be a challenge, especially for ventures who need to ensure high and consistent quality standards. Many of the well-educated people prefer to work abroad or for public and non-profit institutions, where salaries can be higher than in the private sector. Credit and equity funding is generally scarce for ventures, but even more so for sustainable ventures. Because they are often innovative and perceived as risky, these ventures find it difficult to get low-cost funding. Moreover, sustainable ventures produce benefits beyond their immediate private returns. Today, mechanisms to reward these social and environmental benefits are still limited, but more and more of them are being developed. One example are social investment funds like Acumen.

### **Financial Resources as an Internal Constraint:**

#### **Acumen and A and Z Textile Mills**

A to Z Textile Mills produces insecticide treated bed-nets in Tanzania. Besides preventing malaria infections for the individual user, malaria prevention also saves the government health expenditures and contributes to halting the spread of malaria. But these added social benefits were not part of A and Z's profit and loss and so it could not convince conventional investors to provide funding for scaling up the business. Acumen, a venture capital fund that invests in sustainable ventures, saw the opportunity and provided the required funding. It also supported the success of the venture by facilitating partnerships with ExxonMobil and UNICEF, among others. A to Z now produces 8 million nets a year; it employs about 5,000 people (up from 1,000 before its ‘discovery’ by Acumen Fund), 90 percent of whom are unskilled women.

*Source: UNDP, 2008*

## Opportunities

Opportunities are potential changes to the current situation that would contribute to the success of the venture. Changes in the stakeholder landscape can often benefit sustainable ventures. Opportunities can arise when new partners enter the field or when new funding becomes available. In addition, changes in regulation on the national and international level as well as changes in political priorities and social awareness can signify possibilities for growth for a venture.

### **Political Conditions as an Opportunity: CDM and BSH**

The threat of climate change demands ever more political attention. The Kyoto Protocol represents a global framework convention for the reduction of greenhouse gas emissions. The Clean Development Mechanism (CDM) forms part of this convention. It allows governments, organizations or individuals living in industrialized countries to achieve some of their emissions reduction in developing countries, e.g. by providing financing or technology for such initiatives. The home appliance manufacturer BSH Bosch Siemens Hausgeräte GmbH, for example, intends to make use of carbon dioxide (CO<sub>2</sub>) certificate trading by having a fridge replacement campaign recognized under the CDM. The revenue earned through the certification of the CO<sub>2</sub> savings and their respective sale will enable the company to offer energy-efficient fridges to poor communities at a reduced price. In the Brazilian favelas, hundreds of thousands of old fridges are used. These obsolete appliances are prone to leaking, allowing climate-damaging gases to escape, and consume enormous amounts of electricity.

The project is currently operated as a pilot. At this stage, it has already replaced more than 50,000 fridges in 2007. It could significantly be scaled up if accepted by the CDM, benefiting a variety of parties involved. Of course, the company would benefit from increased sales as well as reputational effects. In addition, energy utilities are presented with an interesting alternative to investing in new power plants. By buying the refrigerators from BSH, they could meet their statutory duty to invest part of their sales revenue in improving energy efficiency in Brazil. The favela-dwellers receive appliances with significantly improved cooling performance and considerably reduced operating costs. Also further environmental degradation is prevented. The new fridges save around 800 Kilowatt hours of electricity a year. With Brazil's energy mix, this is equivalent to some two to three tonnes of carbon dioxide per fridge over the course of ten years. In addition, the old fridges are collected and disposed of in an environmentally sound manner.

*Source: BSH, 2008*

## Risks

Risks are potential changes that would harm the venture. Since any venture depends crucially on the partners in the life cycle of its product or service, changes in performance of these partners can signify major risks. What if the supplier of raw material decides to sell elsewhere or can't keep up the supply? What if vendors decide to change for the competition? Because markets in developing countries are often not very mature, ventures may not be able to simply replace one business partner with another. Also, political instability is still an issue in many developing countries, even though the situation has been improving in many places.

### **Human Resources as Internal Risk: TSSFA**

Sustainable ventures are often driven by visionary entrepreneurs. As the venture grows, the entrepreneur will be less and less able to take care of all the different decisions within the organization. Where no adequate management staff is available, the further growth of the venture will be at risk. Building the required management skills to enable growth of a venture is hence crucial to its success.

For the past twenty years, Fabio Rosa has been developing and providing affordable on grid as well as off grid solutions to the rural poor via his for-profit venture The Sun Shines for All (TSSFA). Much of its success to date has been based on Rosa and his small team's strong ability to oversee and manage each aspect of the project. When TSSFA expands, it will have to develop a more decentralized system. As such, the success of the project will depend on the reliability and management skills of the people with whom it works.

*Source: Mugica and London, 2004*

## 4.2 Application

Understanding the determinants of success is important to manage a venture, building on enablers, working on removing constraints, leveraging opportunities and mitigating risks. Proactive management of these issues is the key to successful development of a venture.

Once constraints and enablers are identified, analysis helps to find the bottlenecks and potential resources to open those up. 'Bottlenecks' are the steps in the life cycle process that limit the capacity of the overall process to better achieve its goal. Identifying these critical links can help to design highly effective interventions to spur growth and increase impact. Strategies for addressing bottlenecks can make use of the identified enablers. Analysis is especially important to allow for foresighted management. As a venture develops, it needs to assemble more and different resources and capabilities. For example, the demand for skilled workers will often grow over time. Seeing that the available human resources are limited can enable the venture to invest in training early on or to identify suitable workers in other sectors or countries it could hire. In this way, bottlenecks can be avoided.

The success of a venture depends as much on changes in the future as on the conditions in the present. These changes can signify risks and opportunities for a venture. While the situation today can be assessed with relative certainty, changes in the future are always uncertain. But at least some probability can typically be attached to an event. The more likely an event and the greater the impact on the venture, the more important will it be to actively prepare the venture for it.

Identifying the risks and opportunities of a venture is the first step to manage them. Risk management means for the most part preparedness: knowing what to do and when. Thinking through these challenges will help to bring the resources, processes and organization in place to respond adequately should the risk turn into certainty. Managing opportunities works just the same way: one needs to be ready to capture the opportunity when it materializes.



### 4.3 Resources

Some initiatives have provided guidance documents to conduct strategic analysis similar to the one suggested here:

Name	Description	Website
<b>REED Toolkit: A Handbook for Energy Entrepreneurs</b>	Guide for entrepreneurs including feasibility analysis	<a href="http://www.ared.org/training/toolkit/index.htm">www.ared.org/training/toolkit/index.htm</a>
<b>BID Small Business Guide</b>	Links to tools for business planning, including feasibility analysis	<a href="http://www.bidnetwork.org/set-38387-en.html">www.bidnetwork.org/set-38387-en.html</a>
<b>Profiting from Cleaner Production</b>	Series of guidance documents targeted at different audiences (e.g. executives, trainers)	<a href="http://www.financingcp.org/resources.html">www.financingcp.org/resources.html</a>

Lack of finance is one of the main constraints for sustainable ventures. A number of organizations are providing targeted funding to these initiatives, for example:

Name	Description	Website
<b>Calvert Group</b>	Sustainable and responsible mutual fund	<a href="http://www.calvertgroup.com">www.calvertgroup.com</a>
<b>GroFin</b>	Business development and finance company with a focus on Africa	<a href="http://www.grofin.com">www.grofin.com</a>
<b>Kreditanstalt für Wiederaufbau (KfW)</b>	Bank financing investments and services in developing countries	<a href="http://www.kfw-entwicklungsbank.de/EN_Home/index.jsp">www.kfw-entwicklungsbank.de/EN_Home/index.jsp</a>
<b>Ökobank</b>	Bank financing sustainable ventures	<a href="http://www.oekobank.de">www.oekobank.de</a>
<b>Rural Energy Enterprise Development (REED)</b>	Enterprise development and seed financing for clean energy entrepreneurs in developing countries.	<a href="http://www.uneptie.org/energy/projects/REED/REED_index.htm">www.uneptie.org/energy/projects/REED/REED_index.htm</a>
<b>Triodos Bank</b>	Bank financing sustainable ventures	<a href="http://www.triodos.co.uk">www.triodos.co.uk</a>

## 4.4 Case Study: USISS

USISS is a small enterprise in Bamako, the capital of Mali, which dries meat and mango for the local market. USISS' mango production serves as an example to illustrate the analysis of determinants of success.

USISS builds its competitive advantage on a number of key enablers: mangos are a raw material that exists in abundance in Mali. The total production of mango in Mali is estimated around 200,000 tons per year. During the four months of mango harvest, the production is higher than national consumption, leading to low prices. With the variable quality of the produced mango and the challenges for transport, export of fresh mango is limited to only a minor fraction of the production (<3%). Substantial amounts of mango are left to rot, so there is a real need for conserving and processing the fruit. Traditional open-air sun drying techniques cannot preserve the fruit for long, but USISS' drying equipment enables it to produce high-quality dried mango that can be stored for a number of months. In this way, USISS benefits from the sunny climate in Mali. The customers value the good quality and taste of USISS dried mango and state that it is better than other products on the market. Based on these enablers, USISS currently sells 410 kg of dried mango per year at a price of US\$12 per kg. This results in yearly revenues of around US\$5000 and a gross margin of around US\$2000 (footnote 6). As a small collaborative enterprise, relying on its own resources and without the need to hire much additional labour, USISS is well adapted to the entrepreneurial customs and culture in Mali and able to survive under uncertain and unstable conditions.



**Present director of USISS with the double solar tunnel dryer (drying racks against the wall of the handling room). Source: USISS**

6. This is without taking into account a loan for equipment the enterprise had to repay.

7. In fact, the solar drying technology is not yet mature in its development.

Solar drying as applied by USISS is still an infant industry with unexploited potential. There are opportunities to improve production and expand sales. Technically the drying equipment could be improved and made less expensive using cheaper and local materials. Furthermore, targeted marketing initiatives could boost local demand, making dried mango become a common snack like in South Africa, where it is widely available in supermarkets, fruit stores and even at petrol stations. Internationally the demand for dried mango is still small, but growing. With current health trends, dried fruit could gain popularity as a snack. Additional market demand could come from its rising popularity as an ingredient for cereals, yoghurts, chocolate and muesli snack bars. Based on preliminary market assessment, Van der Pol and Verkuijl estimate the potential total market for dried mango at more than US\$13 million:

**Table 4: Estimated Market Size for Dried Mango (in US\$1000)**  
Source: Van der Pol and Verkuijl, (forthcoming)

	Local Market	Regional Market	International Market
<b>USISS sales</b>	5	—	—
<b>Mali sales</b>	15	—	—
<b>Actual market</b>	30	300	3,000
<b>Potential market</b>	100	3,000	10,000

Looking for growth, the company faces a number of constraints. Firstly, the current local demand is limited, since fresh mango exists in abundance in Mali during the harvest period. Packaging is another issue: the current poly-ethylene bags have no moisture barrier, thus reducing the shelf life and appearance of the product. Thirdly, scaling-up the mango drying would directly create more capacity during the rest of the year, which would have to be used profitably (e.g. by expanding the product range offered). USISS' production costs are relatively high, due to the cost of the solar drying equipment<sup>7</sup>, the high rent for the production site in the centre of Bamako and the relatively high salaries in the capital.

At the same time, USISS' production facilities are not equipped to scale up production to the degree that is required by international buyers. International markets require reliable delivery of quantity and quality – conditions which are hard to fulfill in Mali. Furthermore, export markets are barred through other non-tariff constraints. Specifications of importers have to be satisfied and regulation is not in place to support the export of dry fruit from Mali to the European Union or other importing regions. Export requires bureaucratic procedures, time and money.

Finally, the general and financial management capacity, which is sufficient for the small enterprise USISS presently is, would constitute a constraint for growth. Past decisions on loans for equipment showed to be economically ineffective for the enterprise. A general constraint for growth is that entrepreneurial culture in Mali favours small and informal businesses.

Risks could arise from national competitors who have lower production costs, e.g. through external donor support. For example, the Swiss Association for International Cooperation HELVETAS supports women groups in rural areas to export dried mango to the international market. HELVETAS buys gas driers for them, which allows them to continue drying in the rainy season, when mangoes are still available. Presently, these producers sell at a relatively low price on the international market, but if they would enter the market in Bamako, USISS probably would have to reduce prices and see its margin shrink.

A risk especially mentioned by the USISS staff is the need to hire supplementary staff to scale up. With low and uncertain margins, the salaries and social obligations for external staff would be a high risk factor and could become an extra burden to the enterprise if sales drop.

What strategy for growth should USISS pursue based on this assessment? Going on its own after the international market does not appear to be a viable option. Instead, USISS would do better to expand on the local market. Here, it can build on an existing appreciation from its customer base. As it delivers especially to Bamako, USISS should try to maintain its quality leadership and build on its network of vendors. It will not be enough to simply increase output. Targeted marketing activities, preferably in collaboration with the vendors, are needed to increase the recognition of the product. Potential initiatives could include giving away free trial bags to customers or improving the packaging, which is currently not very attractive. To improve quality further, USISS could further develop its quality management during production and packaging. With these activities, USISS could maintain its position inside Mali and increase its sales of dried mango.

In view of the short mango season, capacity growth in mango leads to a demand for diversification. The enterprise could consider to dry other products than mango and meat. For example, the national and regional markets for dried fish are very important. In Bamako, up to 50 000 tons of dried fish are sold, all dried in the open air exposed to dust and flies. Improved technology as applied by USISS could yield better hygienic quality and eliminate the use of pesticides on the product.



Aiming at international markets, USISS could consider to join forces with other processors (like the women groups supported by HELVETAS) in order to participate in the large scale transactions required in international trading and to benefit from donor support enabling these transactions.

Finally, to capture these opportunities, the enterprise would need to improve its managerial capacities, especially with respect to the financial management, e.g. through participation of staff in coaching and training programs.  
*Source: Van der Pol, F.; Verkuil, H. (forthcoming)*

# Toolbox

## Chapter 5: Assessing Costs and Benefits

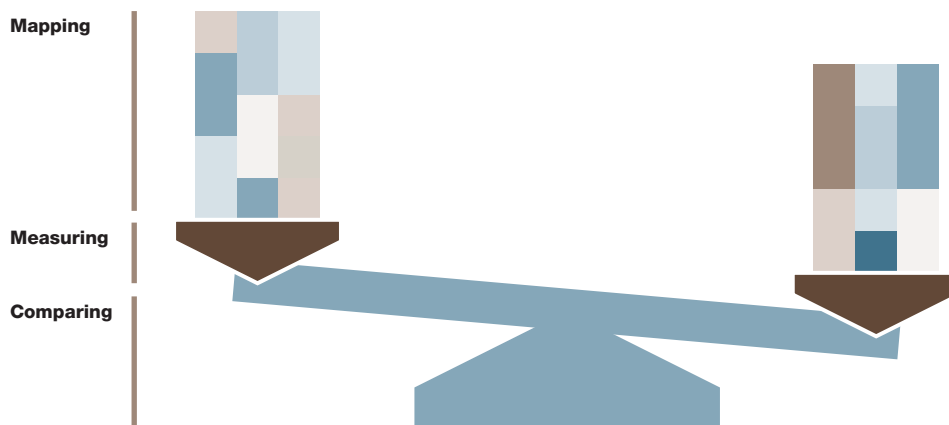


1. Identifying opportunities
2. Understanding the determinants of success
- 3. Assessing costs and benefits**

Every sustainable venture causes economic, social and environmental costs and benefits – at different stages of the product or service life cycle, and for different stakeholders. A systematic analysis to better identify, measure and compare these costs and benefits can help to understand a venture in terms of:

- its internal performance and the potential for survival and growth;
- its overall impact on society, also compared to other ventures;
- the implications of key decisions, e.g. technology choices;
- options to adapt the model of the venture to maximise benefits and minimise costs.

For support initiatives, clearly identified costs and benefits can help to inform their support decisions and create lasting commitment. In the long run, it helps organizations to follow up and show what impact the ventures they supported actually had on society.



**Figure 9: Three Steps of Cost Benefit Assessment**  
Source: Authors' analysis

An assessment of costs and benefits does not eliminate the need to decide, but it provides facts on which an informed decision can be based. Firstly, it can provide some clarity for planning and decision making on future (ex-ante) or evaluating the success of past sustainable ventures (ex-post). Secondly, it can clearly display the implications of different options and show how they change the situation from the status quo and a situation of 'non-action'. Thirdly, clearly stating and assessing the economic, social and environmental costs and benefits of a venture can also increase transparency and create legitimacy and public support for the venture.

This chapter proposes three steps for assessing costs and benefits:

**Mapping impacts:** environmental, economic and social costs and benefits that arise for different stakeholders need to be identified.

**Measuring impacts:** those impacts that are critical for decision making must be evaluated with qualitative or quantitative data.

**Comparing impacts:** where analysis serves to inform decision making between different ventures or different courses of action (including no action), impacts need to be made comparable in terms of the dimensions and timing of impacts, the stakeholders affected, and the levels of uncertainty.

Traditional assessments of costs and benefits might only consider the economic impacts that fall on the venture itself. Why should a venture take a broader perspective, incorporating all societal impacts? Firstly, because it will enable the venture to improve its overall performance, which could not only benefit its reputation, acceptance and support, but also its financial bottom line. Secondly, this information is crucial for stakeholders with a public interest, who might decide to support or not support the venture based on the assessment.



## 5.1 Mapping Impacts

Due to the complexity of the costs and benefits that sustainable ventures create, any analysis will probably require a focus on the most salient and significant issues. The first step towards identifying these relevant issues is to get an overview of the various impacts of the venture. This mapping of impacts takes the three perspectives of a systemic approach into account:

- The life cycle of products and services: What costs and benefits arise within the key life cycle steps for the key products and services a venture is involved in?
- Stakeholder groups: Who are the main stakeholders that are affected by the activities in these life cycle steps and how are they affected?
- Triple bottom line impacts: What are the economic, social and environmental costs and benefits falling on the different stakeholder groups in the life cycle?

The mapping can be performed by means of a table that incorporates all three perspectives, as shown below:

**Table 5: Mapping Costs and Benefits in the Three Dimensions**

Life cycle step	Stakeholder affected	Economic		Social		Environmental	
		Costs	Benefits	Costs	Benefits	Costs	Benefits
<b>Raw Material Extraction</b>							
<b>Production</b>							
<b>Packaging and Distribution</b>							
<b>Product Use</b>							
<b>End-of-life</b>							
<b>Bottom-Line</b>							

## Triple Bottom Line

Sustainable ventures have economic, social and environmental impacts – both intended and unintended ones. The assessment should strive to go beyond market indicators to incorporate external effects of its activities, e.g. health impacts on the local community or the full social and environmental costs of energy used rather than (often subsidised) market costs. The following table provides a quick overview on some key issues in the three fields:

**Table 6: Selected Economic, Social and Environmental Impacts**

	Economic		Social		Environmental	
	Costs	Benefits	Costs	Benefits	Costs	Benefits
<b>Examples</b>	Income and employment, tax revenue, social security payments, infrastructure investments, ...		Health, education, human capital, access to essential services, social capital, gender equality, good governance, ...		Resource efficiency, ecosystem services, pollution (air, water, soil), toxicity, deforestation, land degradation, impact on biodiversity, waste generation, recycling, ...	

## Life Cycle

Even the products and services of relatively simple ventures can already have quite complex life cycles. And rarely does a venture incorporate all the stages of the life cycle in its own operations. Usually, (business) partners take over some steps in the cycle. The impact caused by these partners should also be incorporated into a cost benefit assessment, because it can be influenced by the venture. Sometimes, costs and benefits a venture has in the stages before (e.g. raw material extraction) or after (e.g. end-of-life) its own activity can greatly exceed the impacts it has under its own control.

Data on costs and benefits can also be a starting point for joint improvement activities within a supply chain. A venture might collaborate with suppliers that face high costs in a certain area to reduce these – not only improving its overall societal contribution, but also securing cheaper and more stable supplies. High societal costs might also become a liability for the venture itself – if national legislation evolves or is enforced more strictly, or if natural resources run out. Reducing these costs together with the suppliers contributes to its long-term competitiveness. Identifying costs and benefits related to the ‘end-of-life’ stage can help a venture to better utilise these resources and reduce social and environmental costs related to waste disposal.

8. See the example of Nestlé and Baby Milk formula described on <http://news.bbc.co.uk/2/hi/africa/2667401.stm>, <http://www.babymilk.nestle.com/>, and <http://www.babymilkaction.org/pages/boycott.html>

9. WHO homepage: <http://www.who.int/mediacentre/factsheets/fs292/en/index.html>

The costs and benefits at the use stage are crucial for the success of a venture. A venture that creates substantial benefits for customers can capture some of the value created and build a sustainable business model around it. Where heavy costs arise for consumers, on the other hand, a business model may not be viable. For example, health problems caused by baby formula forced producers to withdraw their products after public protests about the costs inflicted on consumers became too strong.<sup>8</sup>

### Anasset Creates Benefits at the Use Stage

Many low-income households in Ghana traditionally use firewood and charcoal for cooking, which are expensive, time consuming to collect and unhealthy due to negative effects on indoor air quality. The World Health Organization WHO estimates that every year as many as 1.6 million people – mostly women and children – die from indoor air pollution caused in large part by open fires used for the preparation of food.<sup>9</sup> Anasset, a Ghana-based liquefied petroleum gas (LPG) company, provides an alternative fuel source to more than 15.000 households in rural areas that suffer from low electrification. The improved accessibility of LPG leads not only to time- and energy-savings for the households, but also to better health due to improved indoor air quality. The improved accessibility of LPG also leads to environmental benefits: the greenhouse gas offsets of Anasset in a period of five years are estimated at around 41.700 tCO<sub>2</sub>e. Source: Napier-Moore, 2004; Energy+Cures, 2008; AREED, 2008

## Stakeholders

The groups of stakeholders that can be affected range from the venture itself, its consumers, employees and suppliers via communities to the environment and society at large. From an enterprise perspective, the closer costs and benefits are to the owner of the venture, the more relevant they become for immediate business success. Inflicting heavy costs on employees (e.g. through accidents) or consumers (e.g. through toxic residues in products) can seriously harm any venture. But impacts even on remote groups can undermine business success. Engaging with these 'fringe' stakeholders to reduce costs and increase benefits can not only help to improve overall business performance – but can also be a significant source of learning and innovation.

### **KPTL creates benefits for farmers in the supply chain**

Kalpataru Power Transmission Limited (KPTL), a biomass plant in the Indian State of Rajasthan, one of the poorer regions in India, uses mustard crop residues to generate electricity. Several thousands of small-scale farmers that live in this arid region, where only mustard grows well, are supplying the plant with the solid biofuel. The additional income the farmers earn significantly contributes to poverty alleviation. The farmers are paid on delivery to the collection centres, which were set up because farmers do not have own means of transport. Besides creating income for farmers through the purchase of fuels, the plant is engaged in capacity building among local farmers. It is estimated that the project creates a potential of approximately 150,000 man-days of work per year through jobs in biomass supply and plant operation. Additionally, the overall emissions reductions are estimated at around 32.000 tonnes of CO<sub>2</sub> per year.

*Source: KPTL, 2008*

Beyond those impacts directly affecting stakeholders, ventures can have significant indirect impacts. For example, ventures may build capital and infrastructure that is also to the benefit of other stakeholders – be it physical (roads, electricity nets), human (experience, technical know-how) or social (community and neighbourhood relations). Some activities build institutions and networks that are of long-term benefit for the communities involved.

The definition of relevant stakeholder groups can reflect the attention one wants to pay to distributional effects. For example income earned by members of the local (poor) community will probably have a different relevance than income earned by a team of international development consultants. These would thus be two different stakeholder groups (even if both could be called 'employees'). Similarly, exposure to pollutants may affect children differently than

adults; they may thus be counted in a different group. This exposure might also differ according to income level, considering that rich people can engage in defensive expenditure, e.g. by relocating their home.

Some impacts cannot be allocated directly to a specific stakeholder group but affect the global society. Climate change, for example, affects everybody (if not to the same degree). For an individual venture, getting financial rewards for "global" issues can be challenging. It will often only be successful when governments develop and implement appropriate policy instruments. The Clean Development Mechanism (CDM) provides an example of how 'global' costs can be made relevant for ventures all over the world.

## 5.2 Measuring Impacts

In order to understand the magnitude of impacts and to track their development over time, it is important to measure them. In designing the analysis, decisions need to be made regarding what to measure, how to measure it and how to keep track of the measures.

### **What to measure – Prioritization**

In most cases, it will be too costly and time consuming to measure all the different impact of a venture. As a thorough mapping would show, even small ventures have a myriad of impacts along their life cycle and on the different stakeholders. Measurement should focus on these impacts that will inform decision making, e.g. due to their

- magnitude
- significance as enabler, costs, risks, or opportunities
- relevance for strategic priorities
- public interest (e.g. for reporting to government)

To increase transparency, the reasons for including or excluding certain impact categories can be documented.

### **How to measure – Indicators**

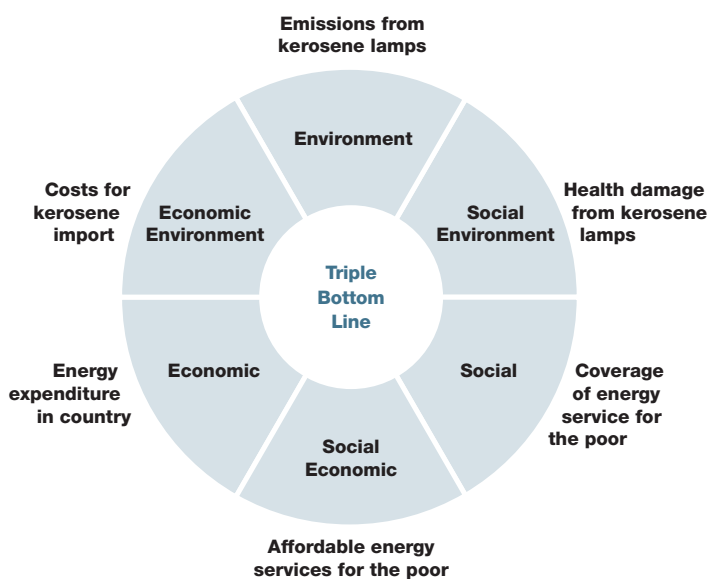
Measurement must be based on well-defined indicators. The indicators should be chosen with care, because they will influence not only the assessment process, but also the actions that are taken to achieve certain goals and manage impacts. Furthermore, the choice of indicators should consider the cost of assessment and the usability of the data for other stakeholders. Criteria can also be developed through participatory approaches, i.e. involving the people affected by the ventures through qualitative preliminary studies and workshops.

### Finding Key Assessment Criteria Together with Experts and Stakeholders: COSA

The COSA (Committee on Sustainability Assessment) project is currently developing a multi-criteria assessment tool to measure and understand the costs and benefits of undertaking sustainable practices in the coffee sector. To identify key criteria for the analysis, a one-year international consultation with fifty experts and representatives of the coffee industry and the area of sustainable development was established to gain in-depth knowledge of the sector and its impacts. To complement the process, an extensive literature review was conducted.

Source: COSA, 2007

Where certain desirable activities have multiple correlating benefits, it may be useful to design indicators that combine these impacts. This can facilitate the realization of synergies and the identification of effective interventions. The figure 11 shows selected indicators spanning different categories for the example of a kerosene-lamp substitution project.



**Figure 10: Integrating Indicators Spanning Economic, Social and Environmental Issues with Sample Indicators for a Kerosene-Substitution Project in the Lighting Sector**

Source: Authors' analysis

In order to communicate the impacts of a venture to outside stakeholders, it is useful to rely on already established indicators. Examples include the Millennium Development Goals, the Global Reporting Initiative, or existing indicator lists for social and environmental Life Cycle Assessment (LCA). Another option is to link up to measures used in national development plans, e.g. Poverty Reduction Strategy Papers (PRSPs), MDG strategies or sectoral and local policy plans. In the case of greenhouse gas emissions, measuring according

to an official agenda becomes highly relevant to obtain economic benefits from sale of certificates.

Products and services are procured from many different sources and it is hardly feasible for a venture to assess all the related costs directly. In this case, environmental impacts can still be calculated using conversion factors. These conversion factors provide information about the costs and benefits that are typically related to the items procured. Three methodologies that could be applied in this context are:

- The ecological footprint, which shows the 'space' required for supplying the products and services.
- The total material requirement is calculated 'from cradle to grave' with 'material intensity factors' that show resource flows induced by products and materials.
- The Greenhouse Gas Protocol provides methodologies and tools for businesses to calculate their greenhouse gas emissions, including supply chain tools and sector-specific sheets.

### How to keep track – Dashboards and Scorecards

Knowing the costs and benefits of a venture enables it to manage them purposefully. A venture can set certain goals for benefits it would like to increase or costs it would like to reduce or simply monitor a certain impact to ensure that it remains within an acceptable range. To do this, it requires tracking systems. This is particularly important where multiple impacts are to be tracked and where control over these impacts is distributed within the organization. Standard management tools to keep track of various indicators are dashboards and scorecards. These are reporting systems with clearly established baselines, targets, responsibilities and reporting schedules. The 'balanced scorecard' is a way to translate strategic priorities into actionable goals (Kaplan, Norton 1992). This approach could be especially relevant for sustainable ventures that consider social and environmental benefits as part of their mission.



### 5.3 Comparing Impacts

Cost benefit assessments are often conducted to decide between alternative courses of action: between investing in alternative ventures, between starting up a venture with different kinds of approaches, or between developing the venture in another direction. In order to take such a decision, it is not enough to know the impacts of each option. One must also be able to compare them. For a standard private financial cost benefit assessment, there are standard tools to achieve such a basis for comparison. The Net Present Value, for example, allows comparing alternatives with different cash flows over time. Comparing impacts of a full cost benefit analysis that considers impacts on stakeholders along the life cycle in different impact areas is more complicated. Depending on the kind of alternatives and the rationale of decision making, it is necessary to make them comparable in terms of their:

- Kinds of impacts
- Affected stakeholders
- Timing of impacts
- Uncertainty of impacts

Tools are briefly introduced for each of these tasks below. All of these tools are fairly technical and explaining them in detail goes beyond the capacity of this guide. More in depth treatment and guidance is available from the referenced resources at the end of the chapter.

#### Comparing Different Kinds of Impacts

It is not always easy to compare impacts in different areas. Should the venture reduce chemical use if this leads to increased energy consumption? Should it contribute more to education and capacity building if this comes at the cost of reduced incomes of suppliers in the local community? The answers ultimately rely on personal judgements. To make these judgements transparent, one can attach explicit weights to these impacts that express their relative importance. Based on these weights, impacts can then be further integrated to intermediate indicators or to a single measure.

Weighing impacts means expressing the relative importance of different kinds of impacts. In this way, a ranking between different alternatives can be established. What weight to attach to impacts depends on the judgements of those involved in the decision making process. Dialogues with external and internal stakeholder can play a useful role in establishing widely accepted weights.

The goal of integration is to reduce the number of indicators one needs to consider by integrating several impact measures into one indicator. Impact data is converted to monetary values or other intermediary indicators as far as 'credible and useful'.

Aggregation can happen on multiple levels; on each level, the number of indicators is reduced further.<sup>12</sup> Full integration would yield a single monetary indicator, where all costs and benefits are converted into one monetary value. Various approaches for this conversion exist.<sup>13</sup> However, full monetization typically requires costly and time-consuming research. Small ventures will rarely be able to afford such efforts. Besides, different conversion approaches can yield very different outcomes.

In addition to the methodological challenges, a single monetary indicator is often not very useful to guide further decision making, since it conceals the very information on the impacts one has gathered to influence the decision. On the other hand, being able to communicate the full Net Present Value (NPV) of a venture can have a powerful effect. In all cases, weighted or integrated results should be presented together with the underlying, original data to allow sound, un-biased and informed decision-making.

10. <http://www.who.int/healthinfo/boddaly/en/>

11. [http://glossary.eea.europa.eu/EEAGlossary/C/carbon\\_dioxide\\_equivalent](http://glossary.eea.europa.eu/EEAGlossary/C/carbon_dioxide_equivalent)

12. As advocated by DEFRA, <http://www.defra.gov.uk/Environment/economics/rtgea/10.htm>

13. For details on the various methodologies, see Pearce, Atkinson and Mourato (2006) or Zerbe and Bellas (2006).

**Table 7: Example Intermediary Indicators for Integration**

Source: Authors' analysis

	Economic	Social	Environmental
<b>Examples for intermediate indicators</b>	ROI – Return on Investment (for financial costs and benefits)	DALY – Disability adjusted life years (for health impacts) <sup>10</sup>	CO2-equivalents (for greenhouse gases) <sup>11</sup>

**Table 8: Advantages and Disadvantages of Monetization**  
 Source: Authors' analysis

Using a single, monetary indicator leads to the following...	
Advantages	Disadvantages
Trade-offs captured in an integrated indicator	Methodological uncertainties of aggregation
Reduced complexity in result display	Simplification and loss of 'fine grained' information contained in indicators
Easy comparison of alternatives	No information on spatial and temporal distribution of impacts
Integration and comparison with economic frameworks possible (e.g. GDP)	No information on distributional effects between different groups
	Process often not transparent

**Comparing Impacts on Different Stakeholders**

The costs and benefits of a venture fall on different kinds of stakeholders. When comparing alternatives, these distributional effects can also play a role. Especially where ventures are supposed to benefit special groups, such as

poor, marginalised or traditionally disadvantaged groups, it is important to make this priority explicit in the comparison. The same amount of monetary or non-monetary costs and benefits can have a very different impact on people depending on their overall income level and vulnerability. Accounting for these distributional effects can also improve political feasibility, as ventures that produce benefits for the rich and costs for the poor are often hard to justify as 'sustainable' (even if overall benefits outweigh costs). In such cases, due attention should be given to appropriately consider distributional effects and equity.

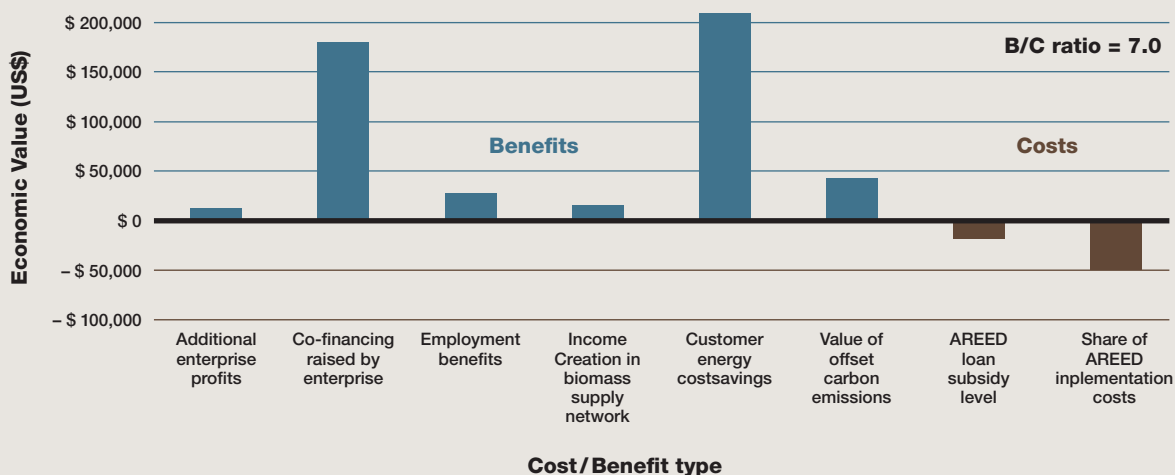
Like with different kinds of impacts, the relative priorities between affected stakeholders can be expressed in weights and then further aggregated to recalculate overall impact (Pearce, Atkinson and Mourato 2006, p. 221, Kriström 2005). Assigning weights to the impacts on different kinds of stakeholders is a means to make the importance attached to distributional effects explicit. These weights can be defined in a discussion with the stakeholders. The definition of weights can also start from certain desired states of distribution and equity. Based on such judgements, one can then calculate what weights would need to be assigned to the gains of a particular societal group in order for an alternative to be preferred over another. It can then be discussed whether the weight required to get to this 'tipping point' adequately reflects social and individual priorities. Based on such relative weights, the net benefit of the relevant alternatives can be recalculated, leading again to a single indicator.

**REED: Aggregation**

The assessment of selected REED projects included those impacts into the study that could readily and meaningfully be monetised. The analysis is presented as a disaggregated

chart (see example below) that displays the major costs and benefits accruing to the different stakeholders. Each chart also includes the 'B/C ratio' for the enterprise, its total benefits divided by total costs.

**Figure 11: REED Aggregation Table**  
 Source: Napier-Moore, 2004







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### Comparing Different Timings of Impacts

Alternative options typically result in different impacts at different times. To calculate what these alternative options are worth today, one discounts the impacts in the future by a certain discount factor. ‘Discounting’ implies assigning a lower weight to future costs and benefits than to current ones, converting them into their ‘present value’.

The discount rate expresses the importance attached to future impacts: somebody who cares little about the future will attach a high discount factor to future impacts, somebody who cares a lot about the future and even about future generations will value future impacts almost as much as present ones and therefore choose a low discount factor. High discount rates have been claimed to be incompatible with principles of sustainability and intergenerational equity, while zero-discount rates result in ‘impoverishing’ the current generation (Pearce, Atkinson and Mourato 2006, p. 184). The table below provides an example for how the choice of the discount rate effects the final value calculated for a project, from about 300.000 to over 13.7 million Euro.

The choice of the discount rate also depends on the focus of analysis. Managers who compare different courses of action or investors who compare different investment opportunities often look at the return of other investments over time as a benchmark. The discount rate then expresses the ‘opportunity cost’ of choosing one alternative and forgoing another. Public actors, on the other hand, would determine the discount rate based on political priorities or generally applied reference points.

### Comparing Uncertain Impacts

When assessing the costs and benefits of future activities, much of the assessment relies on assumptions. Whether the assumed costs and benefits will materialize is uncertain. To reflect this uncertainty in the decision making process, it is useful to work with different assumptions and see how they affect the forecasted result. Two approaches are sensitivity and scenario analysis. Both can be used to compare the estimated outcome of alternatives, but also to analyze the robustness of estimated outcomes of a single option.

Scenario analysis responds to the question ‘what if...?’. It shows how different assumptions about factors that affect the success of the venture play out in results of the venture. Scenarios might compare different regulatory changes, different market developments, varying availability of input factors and so forth. In a second step, probabilities can be attached to the different scenarios to reflect how likely the changes are estimated to be. Comparing alternative courses of action by using different scenarios provides some clarity about the contingency of results. Scenarios can further be used in negotiation processes, especially in situations involving stakeholder with different interests or world-views.

Sensitivity analysis is used to find out what the critical assumptions are for a forecast. Different assumptions, e.g. the discount rate, are changed to observe the consequences for the results of an analysis. A strong change in the results shows that the assumption is critical and must be treated with care. In a complex sensitivity analysis, different parameters can be changed simultaneously to see how they influence, cancel out or aggravate each other.

**Table 9: The ‘Net Present Value’ of a Reforestation Project in Lubrín, Spain, Calculated with Different Discount Rates (Sáez and Requena 2007)**

Discount rate	Net financial cost	Net environmental benefit	Net present value
5%	-10,258,177 €	10,561,814 €	303,637 €
3%	-11,704,032 €	16,494,672 €	4,790,643 €
1%	-18,474,235 €	32,262,304 €	13,788,068 €



## 5.4 Resources

Relying on standard tools, methodologies and databases can greatly reduce the costs and resources required for analysing costs and benefits, improve the validity of the selected approach and make the analysis transparent and more credible to outsiders. The following collection provides a first overview on tools, methodologies and databases available:

Name	Description	Website
<b>COSA Framework</b>	Initiative to develop a multi-criteria cost benefit analysis of sustainable practices in coffee production	<a href="http://www.iisd.org/standards/cosa.asp">www.iisd.org/standards/cosa.asp</a>
<b>Pearce, Atkinson and Mourato (2006)</b>	An OECD publication summarising the status quo in cost benefit analysis, including tools for calculating monetary equivalents	<a href="http://www.oecd.org/dataoecd/37/53/36190261.pdf">www.oecd.org/dataoecd/37/53/36190261.pdf</a>
<b>NCEDR CBA Modules</b>	Basic introduction into principles and techniques behind cost benefit analysis, e.g. different discounting techniques	<a href="http://sunsite.utk.edu/ncedr/tools/othertools/costbenefit/lead.htm">sunsite.utk.edu/ncedr/tools/othertools/costbenefit/lead.htm</a>
<b>UNEP / SETAC Life-cycle Initiative</b>	Collection of tools and instruments for analysis and management of life cycle wide impacts. Upcoming work includes a 'Code of Practice' regarding social aspects in life cycle analysis	<a href="http://lcinitiative.unep.fr">http://lcinitiative.unep.fr</a>
<b>MIPS Online</b>	Methodology, conversion factors and spread-sheet for calculating life cycle wide resource consumption for products and services (i.e., Material Input Per Service unit values)	<a href="http://www.mips-online.info">www.mips-online.info</a>
<b>Ecological Footprint Network</b>	Methodology and cases for calculating the 'ecological footprint' of a business or activity	<a href="http://www.footprintnetwork.org">www.footprintnetwork.org</a>
<b>Greenhouse Gas Protocol</b>	Methodologies and tools for businesses and projects to calculate their greenhouse gas emissions, including supply chain tools and sector-specific sheets	<a href="http://www.ghgprotocol.org">www.ghgprotocol.org</a>
<b>Global Reporting Initiative (GRI)</b>	Standard for triple-bottom-line reporting by businesses, including special tools for SMEs	<a href="http://www.globalreporting.org/WhoAreYou/SME">www.globalreporting.org/WhoAreYou/SME</a>



## 5.5 Case Study: Manila Water Company

Before the water and sanitation system of Metropolitan Manila was privatized under a concession contract, the government-run water utility was unable to adequately meet the area's demand for safe water supply. It was heavily indebted, and thus lacked capital to improve the infrastructure; it was also inefficiently managed and overstaffed. Various studies indicated that Metro Manila would soon face serious water supply shortages if nothing was done to correct operational inefficiencies and years of under-investment in the infrastructure.

Manila Water won the bid for the East zone concession of the water and wastewater network in 1997. Privatization of water is always a contentious and polarizing topic, raising many complex political, social, and economic issues. Opponents of water privatization frequently claim access to water as a basic human right and public good to be provided by public bodies. In contrast, supporters claim that subsidies have failed to reduce inequality in access and that the private sector may provide water more efficiently. Thus, the privatization took place under the watchful eye of the media and civil society, who represented concerns about the environment as well as access to water and wastewater services for the poor.

Learning from successful and unsuccessful privatizations elsewhere, the government designed the concession contract with financial, social and environmental performance indicators in mind. The 25-year concession was thus coupled with requirements to increase operating and resource efficiency, challenging service coverage targets and pro-poor elements. Non-performance would be met with financial penalties.

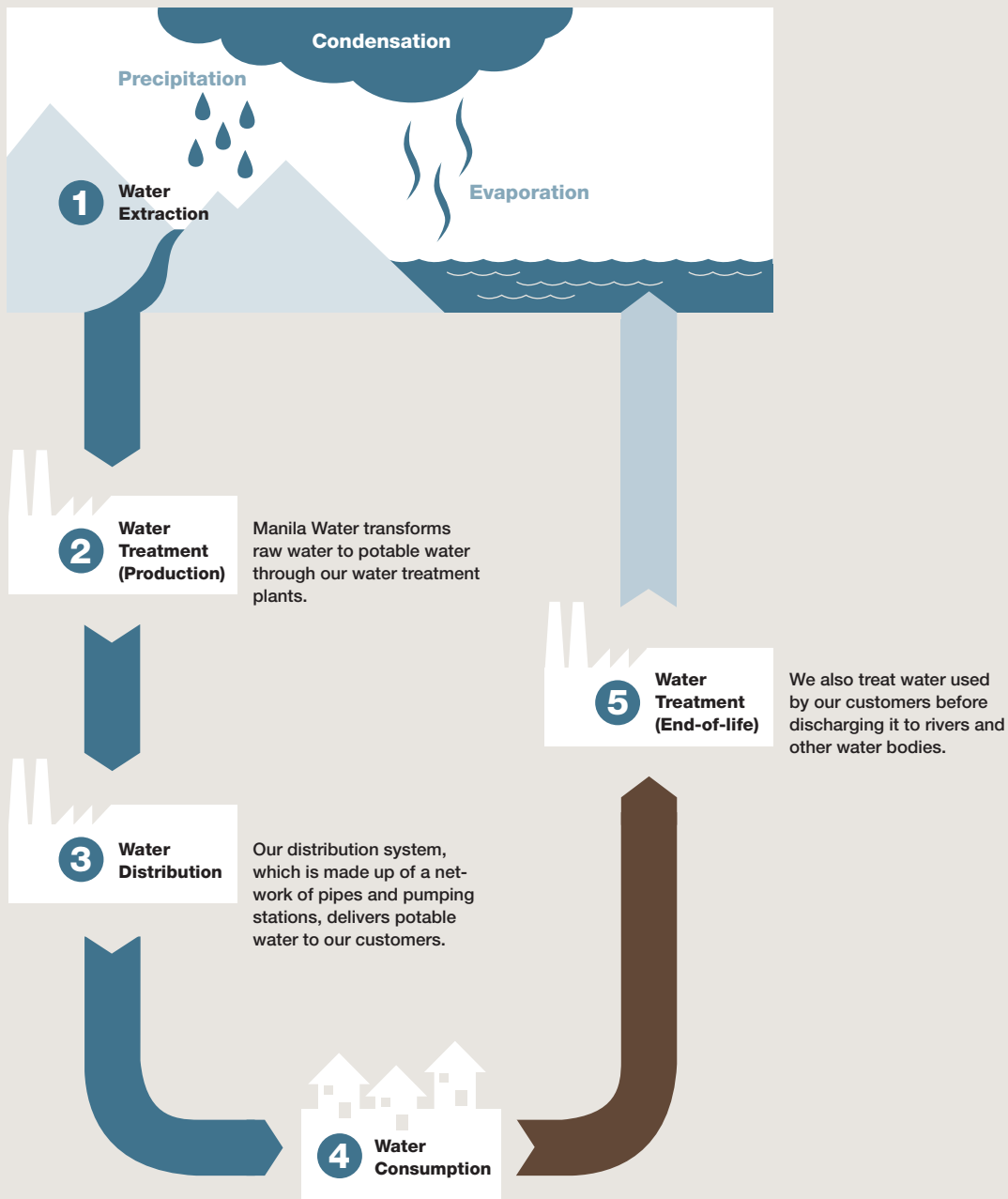
The company explicitly strives to achieve environmental and social goals alongside its economic goals. In other words, it grounds corporate strategy in triple bottom line outcomes. Analysing decisions with social, environmental, economic and profitability in mind is embedded in the corporate culture.

### Mapping impact

The lifecycle of Manila Water's operations is embedded in the natural water cycle of ecosystems - immediately demonstrating the importance of, and dependence on, the natural environment. Essentially, Manila Water's lifecycle has five stages:

1. Water Extraction
2. Water Treatment (production)
3. Water Distribution
4. Water Consumption
5. Wastewater Treatment (End-of-life)





**Figure 12: The Water Cycle and Manila Water's Operations**  
 Source: Manila Water, 2007

Manila Water has a vast number of impacts on its stakeholders. When the impacts were mapped for this analysis, the aim was to identify the most significant ones along the whole lifecycle<sup>14</sup>. The analysis was then structured by three impact areas, showing exactly which economic, social and environmental costs and benefits fell on the different stakeholder groups. The key stakeholder groups affected by company activities were mapped for this analysis and listed below. Manila Water regularly uses stakeholder mapping to proactively apply a stakeholder approach to management, to identify for example, the groups most important for regular engagement. The identified stakeholders in the case of Manila Water<sup>15</sup> include:

- 1. Company**
- 2. Shareholders**
- 3. Employees**
- 4. Suppliers**
- 5. Poor suppliers**
- 6. Customers**
- 7. Poor customers<sup>16</sup>**
- 8. Local community**
- 9. Government**
- 10. Society**

In principle, every impact can be categorized as either positive (benefit) or negative (cost). However, the effect on the relevant stakeholder was not necessarily known until the impact was measured. The company recognizes the difficulty to measure non-financial issues. Still, approaching them as core business issues is regarded not only as valuable risk management, but also a tool to identify real business opportunities.

### Measuring impact

Where possible, quantitative data was gathered for each impact; this helps gain a clearer picture of the respective cost or benefit incurred by the company on its stakeholders. Table 10 is a data-populated version of the mapped impacts<sup>17</sup>. The colour-coded table only shows the highlights from the more significant impacts in terms of sustainable development outcomes.

### Comparing impacts

The data in Table 10 was not fully integrated in this case.<sup>18</sup> Although the data includes numerous units of measurement, it is still illustrative of the significant costs and benefits of Manila Water on its stakeholders. It is apparent from the colour coding, that there are more benefits than costs. However, this is not to say that all impacts are equal; in some cases one negative impact could be enough to irreparably damage a company, outweighing the sum of all benefits. Closer examination of the data clearly shows

that the benefits of Manila Water's venture – especially in providing improved access to clean water for the poor – outweighed the costs. Key findings from the cost benefit analysis are listed in Table 10.

### Conclusion

As Manila Water continues to expand in the East zone to meet its growth targets, it is searching for innovative ways to reach far-flung low-income communities and to continue to benefit the poor. At the same time, the company is increasingly focused on reducing its impact on the environment. It is looking at better watershed management, better wastewater services, and lowering its greenhouse gas emissions. In the future, systematic analysis on a triple bottom line can help the company to further identify opportunities to enhance its financial profitability and at the same time benefit disadvantaged groups like the poor while minimizing the strain on the environment.

*Source: Manila Water Company*



© Manila Water Company

14. It is important to note that some impacts can be felt independent of a lifecycle stage. As it is equally important to map them, they can be included into the analysis as an independent category (compare Table 10).

15. Manila Water uses triple bottom line data to report to its stakeholders. The company publishes an annual sustainability report (GRI compliant), available online: <http://www.manilawater.com/sustainable-development/sustainability-report>.

16. In this case, poor customers are treated as a stakeholder group distinct from other customers since this analysis is specifically concerned about impacts on the poor. Poor suppliers are also treated separately.

17. Compare Comeault 2008 for complete tables of mapped and measured impacts.

18. To make all impacts comparable with a single monetary indicator would not have been meaningful since large assumptions would be required to monetize, for example, watershed management or improved quality of service.

**Table 10: Mapping and Measuring Impacts of Manila Water's Venture – Key Findings**

Lifecycle Stage	Stakeholder	Costs and Benefits			Key Finding
		Economic	Social	Environmental	
Independent	Company	<b>Capital expenditure invested in infrastructure</b> <ul style="list-style-type: none"> <li>• PhP 28 billion since 1997</li> </ul>			Improvements to service required a lot of capital.
	Employees	<b>Livelihood:</b> <ul style="list-style-type: none"> <li>• 1,561 Manila Water employees (2007)</li> </ul>	<b>Health and safety:</b> <ul style="list-style-type: none"> <li>• 95% average safety performance at sites (2007)</li> <li>• no time lost from work-related accidents</li> <li>• 541 person-days of health and safety training (2007)</li> <li>• Potential for skills-building and career development:</li> <li>• 7,980 person-days of training (2007)</li> <li>• 275 employees, or 17% of Manila Water population promoted in 2007</li> </ul>		Benefit felt by current employees (good safety record, adequate training and career growth opportunities); however, it started with 2,200 employees inherited from the government utility, a number of whom were made redundant early on.
	(Poor) Suppliers	<b>Employment opportunities from supply chain</b> <ul style="list-style-type: none"> <li>• 10,000 indirect jobs within concession area</li> <li>• PhP 22 million generated as income in jobs through Manila Water Sustainable Livelihoods Program</li> </ul>	<b>Health and safety</b> <ul style="list-style-type: none"> <li>• 175 person-days training on occupational health and safety</li> </ul>		Manila Water works closely with suppliers to build strong relationships while generating thousands of jobs through its supply chain. The company offers assistance with access to financing. It also offers health and safety training to suppliers.
	Local community		<b>Indigenous rights</b> <ul style="list-style-type: none"> <li>• Some opposition to proposed new water sources (Laiban Dam)</li> </ul>		Unquantifiable at present, local communities surrounding a proposed new water source are opposed to its development.
		<b>Debt load</b> <ul style="list-style-type: none"> <li>• Relieved from US\$880 million in 1997</li> </ul>			Relieved of its massive debt load, the government utility has become much more effective in its new regulatory role.
		<b>Tax revenue</b> <ul style="list-style-type: none"> <li>• Manila Water paid PhP 892 million in 2007</li> </ul>			From 2007, concessionaires pay business taxes representing significant income for government coffers.
Water Extraction	Society			<b>Volume of water used</b> <ul style="list-style-type: none"> <li>• 1386 million litres of water withdrawn per day</li> </ul>	Water is a renewable resource, and ultimately all water extracted by Manila Water is put back into the water cycle, however, the extraction of millions of litres per day does have an impact on the ecosystem.
Distribution	Company	<b>Non-revenue water</b> <ul style="list-style-type: none"> <li>• 63% in 1997; 24% in 2007</li> </ul>		<b>Water-leakage</b> <ul style="list-style-type: none"> <li>• 24% of 1386 million litres per day = 333 mld</li> </ul>	Although Manila Water has drastically reduced the amount of non-revenue water since 1997, it still loses 24% of treated water each day through pipe leakages.

Lifecycle Stage	Stakeholder	Costs and Benefits			Key Finding
		Economic	Social	Environmental	
Consumption	Customers	<b>Tariffs</b> <ul style="list-style-type: none"> <li>• PhP 395 for 30 cubic metres of water (based on January 1, 2008 tariffs for residential customers; most customers are in the 30 cubic metres bracket)</li> </ul>			By 2003, Manila Water tariffs were still lower than water tariffs in 1997. They are also lower than those of other water providers in Metro Manila
	Customers		<b>Health and safety</b> <ul style="list-style-type: none"> <li>• Incidence of waterborne disease was 1.1 cases per 1000 population (1999), down to 0.05 cases per 1000 population (2007)</li> <li>• Water quality 100% compliant with bacteriological quality testing (2007)</li> </ul>		Government studies indicate improved public health since 1997, especially in incidence of waterborne illness. Manila Water has an excellent record of water quality.
	Customers		<b>Quality of service</b> <ul style="list-style-type: none"> <li>• 986,000 household connections (2007); 5.6 million customers</li> <li>• 99% households with 24 hour service</li> <li>• 1,040 million litres of water delivered to customers daily</li> </ul>		<p>Water: Significant improvement in service coverage and quality has been felt by customers in the East zone.</p> <p>Wastewater: Sewage coverage remains a challenge. However, Manila Water has increased household sewer connections from six to 12 percent since 1997. At the same time, the company offers desludging of septic tanks to its customers as part of its services paid through monthly tariffs, aiming to desludge each customer once every seven years.</p>
	Poor customers	<b>Tariffs</b> <ul style="list-style-type: none"> <li>• First 10 cubic metres of water is cheapest, increasing scale as consumption rises</li> <li>• lower tariffs compared to alternative water providers</li> </ul>			Manila Water tariffs are lower than those of alternative water providers operating in low-income areas. In some cases, alternative water providers purchase water from Manila Waters and resell it (at a premium) in areas without piped water service.
	Poor customers		<b>Quality of service</b> <ul style="list-style-type: none"> <li>• 214,000 low-income household connections (2007); 1.3 million customers</li> </ul>		Manila Water has made significant improvements in providing 24-hour piped water to slum households.
	Local community			<b>Pollution</b> <ul style="list-style-type: none"> <li>• 20,810,000 cu.m. sewage treated (2007)</li> <li>• 74,855 cu.m. septage treated (2007)</li> </ul>	Significant improvements to wastewater services in the East zone result in less pollution introduced to Metro Manila waterways and soil.

Benefit
Cost
Mixed



# Conclusion

## Chapter 6: Applying the Toolbox



The toolbox introduces tools that help to systematically analyse sustainable ventures. Users can decide to focus on parts of the toolbox and adjust it to their specific situation and focus. Some ideas for how support initiatives can implement the toolbox are provided in this chapter.

Support initiatives can use the toolbox individually for their own programmes.

- Award Schemes for sustainable ventures like SEED or the BID Challenge could structure their application forms based on the toolbox. Doing so could help to analyse if all impacts areas are taken into account, if relevant stakeholders are addressed and life cycle stages considered. They can also build on the information gathered in the application process and coach the winning ventures based on the frameworks. In particular, a close look at the determinants of success can help to identify promising proposals and to develop sound plans for management and scaling up.
- Public and private investors, such as banks or venture capital funds with a focus on sustainability, can base their selection on business plans developed with the toolbox. The detailed information on triple bottom line costs and benefits along the life cycle and on different stakeholder groups provides a good basis to assess and compare impacts of different ventures.
- Donors and other development organizations recognize more and more the importance of market-based approaches and local ownership. They also see the need to address poverty and environmental sustainability through self-financing models. The toolbox can be applied to identify and support sustainable ventures. For example, the tool to 'identify opportunities' could be used to guide a structured dialogue with stakeholders in a certain sector or region to discuss possibilities for engagement.
- Professional education and training programs respond more and more to the growing interest in and need for sustainable ventures. Leading business schools like Kellogg and Columbia have created special programs on social enterprise for their MBA students. Business schools in developing countries, public policy schools and executive education centres implement similar programs. The toolbox can be used to train professionals in the analysis of sustainable ventures, who can contribute to a broader outreach and application of the ideas and frameworks it contains.

### **Business loans and development service: AREED**

AREED provides early-stage loans and enterprise development services to entrepreneurs, helping to build successful businesses that supply clean energy technologies and services to rural and peri-urban African customers. AREED services include training and hands-on business development assistance. Via local NGOs, AREED supports entrepreneurs from the initial business idea to implementation and scaling up. Entrepreneurs are led through structured business planning that can identify an opportunity, assess its market potential and estimate the (financial) costs and benefits of the venture. For the enterprises with the best commercial potential, AREED also provides early-stage investment and assistance to secure additional finance. Ventures that are funded by AREED have an excellent success rate. Default is close to zero. Some ventures have even managed to access funding from commercial banks, despite their niche positioning in renewable energy. Lawrence Agbemabiese, AREED programme coordinator, believes:

“The success of REED is due to the thorough check of the commercial potential of the project. REED is one of the few programmes in that space that follows this model, and it is the only programme where the money in the fund has increased over time. Now others are copying our approach.”  
*Source: AREED, interview with Lawrence Agbemabiese*



- Public policy initiatives at the local, regional and national level can set framework conditions for sustainable ventures through regulation, taxes, subsidies and the provision of other enabling conditions. The tool for ‘understanding the determinants of success’ can guide a dialogue with entrepreneurs to identify policy actions that enable the development and growth of sustainable ventures, e.g. through investments in infrastructure or improved regulation. Where subsidies or tax breaks are used to encourage certain business activities, the cost benefit assessment can be a good tool to monitor the actual impact of the projects that benefit from the support.

This document is a first step toward the development of a standardized approach for analyzing sustainable ventures. In a next phase, support initiatives could work together to improve and elaborate on this first proposal in order to get to a common approach. Working with similar or at least compatible tools would not only enable synergies between the various initiatives but also ease the work of entrepreneurs. Just as for conventional business planning tools, they could rely on one standard for reporting about their venture and could use the same analysis to work with different support initiatives. This would facilitate application processes and provide incentives to gather the data from the start, since it would be requested over and over again.

Support initiatives could also collaborate based on their specific tasks and interests, for example:

- Investors and award schemes could join forces to develop a standardized ‘sustainable venture plan’. Like a business plan, it would prompt all the important information about the estimated impact and the determinants of success of a venture. Based on such a common framework, these support initiatives could then provide questionnaires, guidebooks, trainings, software and online tools that would facilitate the planning for the applicant.
- Donors could work together and with national governments to develop an approach for identifying and evaluating promising sustainable ventures. This could include standardized workshop modules and stakeholder dialogue moderation.
- Education and training programs could start a working group to develop course material for teaching an analytical approach to sustainable ventures that could be used for education of existing entrepreneurs in executive education programs as well as future managers in MBAs and MPAs. The material could include case studies and case study projects for students.

Not everything needs to be created from scratch.

A lot of useful material is already around and many good initiatives exist, as the references to relevant initiatives throughout the document show. Starting an exchange about a common approach can also help to increase the reach and impact of each of these existing resources. It could increase transparency between the initiatives and for the entrepreneurs about what is available where. Relevant knowledge from related fields such as sustainable consumption and production, value chain approaches, private sector development, social enterprise etc. can be integrated under a bigger umbrella and thus become more accessible. For example, National Cleaner Production Centres (NCPCs) already exist in fourteen countries. These centres could help others to identify sustainable ventures and offer capacity building and training to entrepreneurs.

To support the further development of this initial toolbox to analyze sustainable ventures, the feedback, ideas and initiative of all readers of the document is much appreciated.





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## About the UNEP Division of Technology, Industry and Economics

The UNEP Division of Technology, Industry and Economics (DTIE) helps governments, local authorities and decision-makers in business and industry to develop and implement policies and practices focusing on sustainable development.

The Division works to promote:

- > sustainable consumption and production,
- > the efficient use of renewable energy,
- > adequate management of chemicals,
- > the integration of environmental costs in development policies.

### **The Office of the Director, located in Paris, coordinates activities through:**

- > **The International Environmental Technology Centre** - IETC (Osaka, Shiga), which implements integrated waste, water and disaster management programmes, focusing in particular on Asia.
- > **Sustainable Production and Consumption** (Paris), which promotes sustainable consumption and production patterns as a contribution to human development through global markets.
- > **Chemicals** (Geneva), which catalyzes global actions to bring about the sound management of chemicals and the improvement of chemical safety worldwide.
- > **Energy** (Paris), which fosters energy and transport policies for sustainable development and encourages investment in renewable energy and energy efficiency.
- > **OzonAction** (Paris), which supports the phase-out of ozone depleting substances in developing countries and countries with economies in transition to ensure implementation of the Montreal Protocol.
- > **Economics and Trade** (Geneva), which helps countries to integrate environmental considerations into economic and trade policies, and works with the finance sector to incorporate sustainable development policies.

*UNEP DTIE activities focus on raising awareness, improving the transfer of knowledge and information, fostering technological cooperation and partnerships, and implementing international conventions and agreements.*

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***Sustainable ventures can make a significant contribution to poverty alleviation and environmental sustainability. These business initiatives and activities improve human well-being and the environment on a profitable basis (people, planet, profit), contributing to decoupling economic growth and improvements in well-being from natural resource use.***

***Developing and managing sustainable ventures is a challenge. Key questions related to the identification of opportunities, the understanding of the determinants of success and the assessment of costs and benefits appear repeatedly.***

***This document introduces a toolbox that helps to answer such questions. It addresses initiatives that support sustainable ventures including donor programmes, award schemes, private and public investors, professional education programs and policy makers. They can use the tools to systematically identify, evaluate, advise, and promote sustainable ventures.***