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Allocating impact investments in new and existing portfolios

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Management Summary

Major income inequality in the world is causing overconsumption, pollution and depletion of the earth's natural resources on one hand, and hunger, exploitation and poverty on the other hand. To preserve the human and earth's capital, major social as well as environmental issues need to be solved. To solve these issues, financial resources are needed. Impact investing can contribute to solving these issues by attracting large amounts of capital towards social or environmental projects. Because of the limited knowledge and opportunities for private investors to invest with impact it is most interesting to investigate the possibilities to implement impact investments in investment portfolios.

The aim of this research is to study the current impact market and to explore the possibilities to implement impact investments in existing (traditional) portfolios or to compose a portfolio totally out of impact investments. The project has to lead to more insight in the possibilities to offer impact investments to private investors of the Rabobank and in general to more capital towards environmental and social issues.

The current impact market was studied by performing a literature study and by studying the largest database for impact investments (ImpactBase). Another literature study was performed to investigate the possibilities to implement impact investments in existing portfolios and to investigate the possibilities to compose a total impact portfolio. Secondly, an empirical study with five Rabobank impact funds was carried out to explore the possibilities for the Rabobank to offer total or partial impact portfolios to private investors.

In order to construct optimal portfolios with or without impact investments, the modern portfolio theory (MPT) of Markowitz (1952) was used. This theory uses the expected return and the covariance between the investments in the portfolio to calculate the optimal portfolio for the different levels of risk-aversiveness.

Compared to the mainstream market, the number of impact investing opportunities is quite limited. Most impact products are for example only available in private equity. This inhibits the possibility to compose total impact portfolios. However, the literature study shows that it is possible to implement impact investments in traditional portfolios without compromising on the return. Our empirical research shows that it is possible to implement Rabo impact funds in a traditional portfolio without compromising on the return, depending on the risk-aversion of the investor. Composing a total impact portfolio with the five Rabo funds, without lowering the risk-return ratio is also possible for certain levels of risk-aversion.

Based on the literature studies and the empirical study, two conclusions can be drawn. First, by carefully selecting the impact opportunities, impact investments can be implemented in existing portfolios of investors with different risk profiles and different social impact appetites. When the right impact opportunities are selected impact investments can be a valuable addition to existing portfolios of mainstream investors. Also Rabo funds can be a valuable addition to a traditional portfolio. When Rabo funds are added to a conservative or neutral portfolio the risk-return ratio increases compared to the traditional portfolio.

Second, a total impact portfolio is currently not possible with the available impact products in the ImpactBase. This is partly due to the lack of variety in asset classes by the available impact products. A total impact portfolio solely consisting of Rabo impact funds and attractive for mainstream investors is possible in theory. However, in practice it will be hindered by the limited number of available funds.

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1 Introduction

Although the global income inequality between countries is slowly declining since 2007 (Milanovic, 2009), the richest country in the world, Qatar, is still more than 262 times as rich as the poorest country in the world, the Democratic Republic of Congo (Pasquali, 2013). The poorest countries suffer from poverty, starvation and lack of access to basic needs, while upcoming and industrialized countries are over consuming, which causes major pollution and depleting of the earth's resources (World Wildlife Fund (WWF), 2012, 2002). To preserve the human and earth's capital, major social as well as environmental issues need to be solved. Given that the 85 richest people in the world own as much capital as the 3.5 billion poorest people in the world (Fuentes-Nieva & Galasso, 2014), there are enough resources to address these major issues. A major challenge however, is to get the resources to the right places. One of the markets that could contribute to solve this problem is the investment market. The investment market has namely the ability to attract capital for social and environmental change.

After the financial crisis the traditional view of investing, that it is all about making money in whatever way (legally) possible (Sandberg, 2008), has been broken down and the investment market is increasingly seen as a tool to leverage capital towards social and environmental projects. With the changing view on the investment market, the old binary system of investing, only maximizing either financial or social return is also slowly fading away (Bridges Ventures, 2012) and new types of investing are emerging. These new types of investing use market mechanisms for social or environmental projects.

One of these new types of investing is impact investing. Impact investments are made with the intention to achieve a social or environmental return alongside a financial return. The term impact investing was first coined by the Rockefeller Foundation in 2007 in order to enhance the standardization of the industry. Impact investments can be made in many different areas and fields of interest. Examples of impact investing are microfinance in India, sustainable agriculture in Eastern-Europe, community development finance in the US, schooling projects in Africa or clean technology investments in the Netherlands. The investments can be made in a range of forms such as equity, debt and loan guarantees (Freireich & Fulton, 2009). Currently, the impact industry is still a niche phenomenon (Martin, 2013), however the interest in using private capital for social change has exploded in the past recent years (Trilium Asset Management, 2012) and the opportunities to invest with impact are emerging among asset classes (Bridges Ventures, 2012). Estimates of the size of the impact market in the next decade vary from 500 billion USD by Monitor Institute (Freireich & Fulton 2009) to 400 billion USD – 1 trillion USD by J.P. Morgan (O' Donohoe, Leijonhufvud, & Saltuk, 2010).

There are several reasons why impact investing can contribute in a significant amount to the solutions of global issues. The key essence of making a financial return next to a social return gives impact investing the ability to attract a substantial higher amount of capital than just philanthropic investing. Impact investments can thus provide capital and solutions at a scale that purely philanthropic methods can't reach (Freireich & Fulton, 2009). Second of all, since in many countries the role of the government in society is declining and government spending is being cut down, governments have to be more careful in selecting their social investments, impact investing makes it possible for governments to achieve the same social goals with less financial resources. Furthermore, studies have shown that using a market mechanisms to address social issues is more effective than giving grants (McMullen, 2011; Wood & Martin, 2006). By using market mechanisms for impact investments, only the best investment opportunities will survive. This forces the impact investees to be more efficient and therefore they will be able to deliver higher social returns at a lower cost.

Since more than 76% of the global assets under management are controlled by mainstream investors such as insurance companies, mutual funds and pension funds (TheCityUk, 2013), attracting mainstream investors is a crucial factor for the impact industry to grow to its full potential (Drexler, Noble, & Bryce, 2013; Freireich & Fulton, 2009). Mainstream investors will get involved in the market when they can implement impact investments in their portfolios without compromising on the return or when they can compose competitive total impact portfolios. Therefore this study will examine the opportunities to compose portfolios partially and completely out of impact investments. This depends on the supply of impact products and the asset allocation of the investments. To investigate these parameters, this study will focus on the current size and composition of the impact market, and on asset allocation theory. Traditional investments primarily create financial return and are thus mostly allocated based on their financial performance. Since impact investments are intended to create financial as well as social return, it would be illogical to allocate them only based on their financial performance. For this reason, this study will also investigate the possibilities to allocate impact investments according to their financial and social performance.

The two main questions in this study are:

- 1) How can impact investments be implemented in existing portfolios of investors with different risk profiles and different social impact appetites?
- 2) What are the possibilities to compose a total impact portfolio for investors with different risk profiles and different social impact appetites?

The implementation of impact investments in existing portfolios is examined by two questions.

- 1) What is written in literature about the implementation of alternative assets and microfinance investments in existing portfolios?
- 2) What are the possibilities to implement impact investments in existing portfolios with different risk profiles for clients of Rabobank Private Banking?

The first question is answered by performing a literature study on the implementation of alternative assets and microfinance investments in existing portfolios. The results show that adding alternative assets as well as microfinance investments to a traditional portfolio can enhance the risk-return ratio of the portfolio. The second question is answered by composing possible traditional portfolios in different risk profiles for clients of Rabobank Private Banking. Rabobank is one of the major banks in The Netherlands, with a lot of experience in private banking and investing in traditional and social responsible projects.

The portfolios are composed by using data from proxies of stocks, bonds and liquidities, and implement different percentages of impact investments in it. Adding impact investments to the traditional portfolio increased the risk-return ratio for the conservative and neutral risk profile, while it didn't change the risk-return ratio for the aggressive profile and decreased the ratio for the very aggressive profile.

The possibilities to compose a full impact portfolio is investigated by three questions:

- 1) What is the supply of impact products in the ImpactBase?
- 2) What are the existing methods to create impact across the whole portfolio?
- 3) What are the possibilities to compose a portfolio from impact funds of the Rabobank

ImpactBase is the largest database for impact products. Studying the supply of impact products in the ImpactBase will give a representative overview of the available impact products in the market. The study shows that, based on the offered impact products in the ImpactBase, it is not possible to compose a total impact portfolio. This is mainly due to the fact that there are no public equity funds in the database.

To widen the perspective of total impact portfolio opportunities to outside of the ImpactBase, existing methods to create impact across the whole portfolio are being studied. The Unified Investment Strategy of Jed Emerson (2002) and the Total Portfolio Activation by (Trilium Asset Management, 2012) show that it is possible to create impact across the whole portfolio. The methods show that in every asset class investments are available that deliver, to some extent, social

as well as financial return. By mixing investments with different levels of financial and social return the methods compose a competitive portfolio while creating impact.

As the impact investing market is still a young market there is not enough data available about the performances of impact investments. To still provide insight into the possibilities of composing a total impact portfolio, portfolios for different risk profiles are created from impact funds of the Rabobank. Despite the fact that these funds have no track record either, there are reliable proxies for these funds to calculate the portfolio risk and return. The results show that it is not possible to compose a full impact portfolio for the very conservative risk-profile due to the high amount of risk of impact investments. For the risk profiles conservative and neutral the risk-return ratio increased compared to the composed traditional portfolio, but the risk-return ratio decreased for the aggressive and very aggressive risk profiles.

From the study can be concluded that when investors carefully select their investments, it is possible to implement impact investments in a traditional portfolio without compromising on the return. However, composing a portfolio completely out of impact investments is possible in theory but not (yet) in practice. For the Rabobank it is possible to implement impact investments in portfolios of clients while maintaining a competitive return but composing a balanced total impact portfolio is currently not possible due to the small number of Rabo impact funds.

The structure of this study is as follows. First, investment and asset allocation theory and methods plus asset allocation in practice will be described. Second, an overview of impact investing will be provided; what is it, the size of the current market, the demand for impact products, how is impact measured and what is the prospective market size. Third, total and partial impact portfolios with Rabo Funds will be constructed. Fourth, the main findings of the study are concluded and recommendations for further research given.

2 Investing: theory and practice

2.1 Investment theory

To understand asset allocation with impact investments, an outline of modern investment theory, including portfolio theory and the efficient frontier should be provided. Followed by an explanation of strategic asset allocation theory and subsequently a description strategic asset allocation in practice.

According to Bodie, Kane, & Marcus (2010) an investment is “*the current commitment of money or other resources in the expectation of reaping future benefits*”. In finance these commitments are the purchases of assets, like stocks or bonds, and the expected future benefits are for most investors the earned returns on the investment (Goetzmann, 1997).

Most investors thus favor a high financial return, but in general higher returns can only be obtained by taking higher risks (Bodie et al., 2010). There is thus a trade-off between risk and return and since most investors are risk-averse, meaning that they want to expose themselves to minimum risk while on the other hand want to maximize the level of return, investors must therefore balance their return objectives with their risk tolerance (Jordan & Miller, 2008). Investments with virtually no risk are short-term treasury bills, the earned returns on these investments are riskless returns. Therefore the rate of return on these assets is called the risk-free rate and is often used as a benchmark (Brealey, Myers, & Allen, 2009; Jordan & Miller, 2008). Investments that entail more risk provide extra return over the risk-free rate, as reward for bearing that risk, this extra return is called the risk premium (Brealey et al., 2009; Jordan & Miller, 2008). The risk premium can be calculated with the beta (β) of an investment. The β of an investment is the asset’s relative risk compared to the market average. The β of a riskless asset is 0, while the average β of the market portfolio is 1. As the average risk premium of the whole market is 9.0%, the risk premium of an investment with a β of 1.2 should thus be: $1.2 \times 9.0\% = 10.8\%$. If the risk-free rate would be 4.5% the total expected return of an investment with a β of 1.2 should be: $4.5\% + 10.8\% = 15.3\%$. These calculations are important for making investment decisions. In the example, the investment offers a market rate of return and could thus be accepted when looking at it from a pure financial point of view. In order to make such investment decisions, the concept and calculation of investment risks and returns should be understood first. Therefore the next paragraphs will shortly explain what investment risk and return constitutes and how these variables are calculated.

The rate of return (ROR), is a measure of capital gained or lost on the investment, expressed in percentages. The ROR can be calculated over a single period, or as an average over multiple time periods (historical returns). Assuming there are no dividends paid, the ROR is calculated with:

$$Rt = \frac{[Pt+1 - Pt]}{Pt} \quad (1)$$

Where Rt is the Rate of Return (ROR) at time t and Pt is the price of the investment at time t . When dividends are paid, the ROR is calculated as

$$Rt = \frac{[Pt+1 - Pt + Dt]}{Pt} \quad (2)$$

Where Rt is the ROR at time t , Pt the price of the investment at time t , and Dt the dividend paid at time t .

To measure the ROR over multiple periods of time there are two methods. The arithmetic and the geometric method. With the arithmetic method the ROR of all the periods, e.g. 5 years, is summed up and divided by 5 to get the average ROR of 1 year. The geometric ROR is calculated differently, with the following formula

$$R_{average} = [(1 + R1)(1 + R2)]^{\frac{1}{t}} - 1 \quad (3)$$

Where $R_{average}$ is the average geometric return, $R1$ the rate of return in year 1, $R2$ the rate of return in year 2 and t is the number of periods (years) where over the return is calculated. The calculated geometric average return is more accurate to the actual gained ROR, therefore this method will be used to calculate average returns.

Next to ROR, the risk of the investments is also needed to calculate the expected return. Risk can be determined by calculating the standard deviation of historical returns. The standard deviation of returns represents the average spread in returns over the years. The spread in returns shows the volatility of the investment and thus the risk. The calculation for the standard deviation is shown in equation 4.

$$\sigma a = \sqrt{\frac{1}{m-1} \sum_{k=1}^m (ak - \bar{a})^2} \quad (4)$$

Where σ is the standard deviation of return a , m is the number of return samples, ak is the return at time k and \bar{a} is the average return. The standard deviation of the returns can be used to determine the β of an investment. As mentioned earlier, β measures the volatility of the investment compared

to the market volatility. The difference in volatility can be described as the β of the investment. Equation 5 shows how the β of an investment can be calculated.

$$\beta = \frac{(R_m - R_f)}{(R_i - R_f)} \quad (5)$$

Where β_n is the risk of the investment, compared to the market, R_m is the market rate of return, R_f is the risk free rate of return and R_i is the investment rate of return. With risk and return known, the expected return can be calculated as depicted in equation 6.

$$R_e = \sigma * R_{average} \quad (6)$$

Where R_e is expected return, σ is the standard deviation of returns and $R_{average}$ the average geometric returns over the measured time period.

2.2 Asset allocation theory

As mentioned in the previous sector, most investors are risk-averse. Therefore investors look for opportunities to reduce risk while maintaining as much as possible return. One of these opportunities is to combine investments in portfolios. By combining assets that are not perfectly correlated, risk is diversified and the total risk of the portfolio is lowered. In this way higher risk-adjusted returns can be achieved (Frontier Investment Management, 2008).

One of the most used strategies to combine assets in a portfolio, is asset allocation. Asset allocation is a strategy that aims to balance portfolio risk and return by allocating the assets based on the investor's goals and risk aversion. With *strategic* asset allocation, the target allocations for the various assets are set in advance, based on the investor's risk profile, and only rebalanced periodically when needed.

Present asset allocation strategies are based on the modern portfolio theory (MPT) of (Markowitz, 1952, 1959). Markowitz developed MPT in 1952 and was the first in modern economics to acknowledge the importance of diversification in investing. The goal of the theory is to allocate the assets in such a way that the expected portfolio return is maximized for a given amount of risk or to minimize the portfolio risk for a given level of expected return. When of these two goals is reached, the optimal asset allocation is achieved. The mean variance optimization model (MVO), generated from the MPT, is a quantitative tool which enables the investor to optimally allocate the assets by considering the trade-off between the mean (expected return) and variance (measure of risk).

This report will focus on one investment period, therefore the single period MVO will be used. In single period MVO, the portfolio allocation is made for a single period with the goal to maximize the expected portfolio return for a given level of risk.

In order to determine the optimal portfolio allocation, the total portfolio risk and return should be known for every possible combination of assets. To calculate the portfolio risk and return, three input variables are required for every asset in the portfolio; expected return, standard deviation and the correlation with other assets. The calculations for the standard deviation and expected return for individual investments are already described in the previous section, this section will thus focus on how to calculate the portfolio risk and return.

The portfolio return can be calculated by summing up the weighted combination of the asset's individual returns, see equation 7.

$$R_p = w_1R_1 + w_2R_2 + \dots + w_nR_n \quad (7)$$

Where R_p is the portfolio return, w stands for the weight of the investments in the portfolio, and R stands for the return of the individual investment.

The total portfolio standard deviation (risk) is somewhat harder to calculate. The risk of a portfolio depends on the weights of the assets in the portfolio, the standard deviation for each asset, and the covariance of the assets. The standard deviation of each asset can be calculated as described in equation 4, the covariance of the assets can be calculated by performing equation 8.

$$\text{Covariance } a, b = \sum \frac{(R_a - \text{Avg } R_a)(R_b - \text{Avg } R_b)}{N \text{ periods}} \quad (8)$$

In this equation the covariance between two investments, a and b , is calculated. R is return on the investment, $\text{Avg } R$ is average return of the investment and $N \text{ periods}$ represents the number of periods measured. With the covariance the risk of the portfolio can be calculated as shown below (9).

$$\sigma_{\text{portfolio}} = \sqrt{w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + 2(w_1w_2\text{Cov}_{1,2})} \quad (9)$$

Where $\sigma_{\text{portfolio}}$ is the standard deviation of the portfolio, w_1 the weight of investment 1, σ_1 the standard deviation of investment 1, w_2 the weight of investment 2, σ_2 the standard deviation of investment 2 and $\text{Cov}_{1,2}$ as the covariance between investment 1 and 2.

When the total portfolio risk and the total portfolio return is calculated for every possible combination of assets, one will find a set of portfolios which provide the lowest level of risk for each level of return, and the highest level of return for each level of risk. Those portfolios are called efficient portfolios, when these portfolios are plotted on a graph, an efficient frontier is formed (Figure 1).

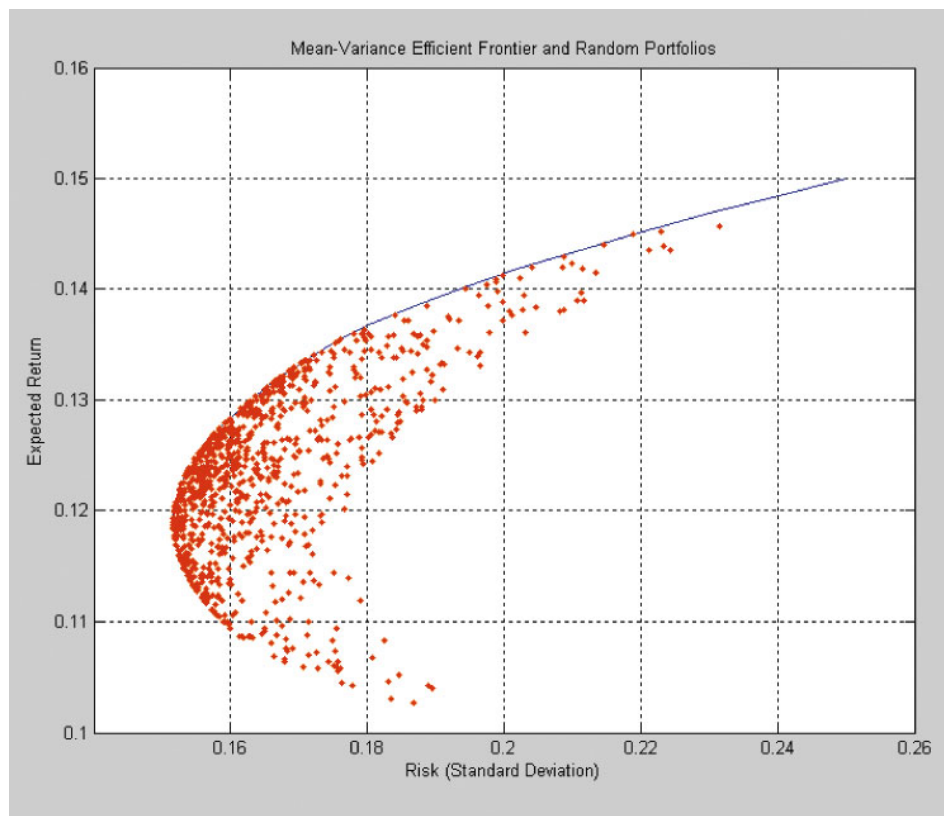


Figure 1 Efficient frontier Source: (Amu & Millegård, 2009)

Most academics and professional investors agree on the importance of strategic asset allocation and according to some it is the most important decision in the investment process (Ibbotson, 2006). Brinson, Hood and Beebower (1986) for example found that 93.6% percent of performance variation is due to strategic asset allocation decisions. This means that almost all variation in the portfolio returns can be explained by the asset allocation strategy of the portfolio. Results from a more extensive study of Brinson, Singer and Beebower (1991) showed similar results: strategic asset allocation explained on average 91.5% of the performance variation of 82 large pension funds over a ten year period. Ibbotson and (Ibbotson & Kaplan, 2000) confirmed that about 90% of the variation in performance of a fund is due to asset allocation strategy and in addition they calculated that 40% of the difference in performance between funds is a result of the allocation strategy.

Although asset allocation is seen as the most important investment decision by most investors, there is also criticism on portfolio diversification models. Implementing a portfolio policy as described above requires one to estimate the parameters of the model, and estimating parameters involves estimation errors. These estimation errors can cause an inefficient allocation of the assets (Chopra & Ziemba, 1993). Due to the estimation errors, the policies constructed with the sample mean and variance perform poorly out-of-sample (Kolusheva, 2008). Demiguel, Garlappi and Uppal (2004) found that the simple asset-allocation rule of $1/N$ performs often better out of sample than the policies from the static models, like MVO, of optimal asset allocation. Furthermore, the study of Demiguel, Garlappi and Uppal (2009) shows that the estimation window needed for the sample-based mean-variance strategy and its extensions to outperform the $1/N$ benchmark is around 3000 months for a portfolio with 25 assets and about 6000 months for a portfolio with 50 assets. This shows that the MVO model is far from perfect and is susceptible for errors. Despite the criticism, the mean-variance portfolio model is still used often by investors and institutions because of its practical advantages.

2.3 Traditional Portfolio allocation

Stocks, government bonds and cash are the most commonly used asset classes in portfolio allocation. This is confirmed by multiple studies, for example the study of (Brinson et al., 1991) showed that the average portfolio composition of 82 pension funds over the period 1977 - 1987 consisted of 53% public equity, 24.5% bonds, 12.1% cash and 10.5% of other assets (composition of the asset class other is unknown). The most extensive research to the market portfolio was done by (Doeswijk, Lam, & Swinkels, 2014). The authors studied the composition of the global market portfolio for the period 1959 – 2011. Over this period, equities represented on average 52.3% of the portfolio, government bonds 29.5%, non-government bonds 15% and real estate complements the portfolio with 3.2% of the total assets.

2.4 Portfolios with alternative assets

In addition to the traditional asset classes, there are many other asset classes that provide options to diversify a portfolio. It has already been argued by (Ibbotson, 2006) that adding commodities to the portfolio increases the risk-return characteristics of the efficient frontier and (Karavas, 2000) stated that also alternative investments, like hedge-funds, commodities, private-equity and private debt, add to diversification benefits. Bekkers, Doeswijk and Lam (2009) performed a study in which was attempted to compose the optimal portfolio, according to the mean- variance theory, with ten assets. Next to the traditional assets, private equity, real estate, hedge funds, commodities, high

yield, credits and inflation linked bonds were included in the portfolio. The authors concluded that real estate, commodities and high yield add most value to the traditional mix of assets and that a portfolio including all assets gives an economically significant extra return for free.

2.5 World market portfolio

Another way to determine the optimal portfolio is to calculate the world market portfolio. Doeswijk et al. (2014) calculated the world market portfolio for 2011 (figure 2). The world market portfolio shows the average diversification and relative value of all assets according to the world population. Although the optimal portfolio can be different per situation, Doeswijk et al. (2014) state that the world market portfolio could be interpreted as a benchmark or as the optimal portfolio for an average investor.

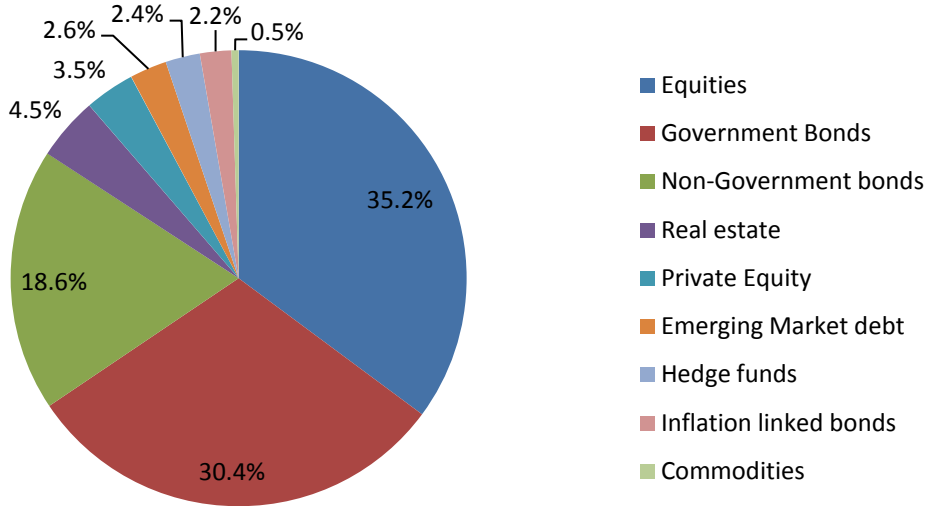


Figure 2 Global Market Portfolio 2011 Source: (Doeswijk et al., 2014)

3 Impact investing

Since most investors are focused on gaining a financial return, financial risk and return are the most used parameters when making investment decisions. The composition of a portfolio is thus often solely based on the portfolio risk and expected return. This pure financial approach of investing has contributed to the exponential welfare growth in certain parts of the world. However, due to neglecting the environmental and societal effects of the investment decisions, it has also contributed to pollution, depletion of natural resources and exploitation of people in upcoming industrial countries. These negative side effects encouraged the emergence of new types of investing such as impact investing. Due to the increasing awareness of environmental and social issues (Gardyn, 2003), impact investing has rapidly increased in popularity since its introduction in 2007. In this chapter the definition and evolution of impact investing will be covered along with the current status and challenges of the impact investing market.

3.1 Definition of impact investing

Freireich & Fulton (2009) define impact investing in the report for the Monitor Institute as: “actively placing capital in businesses and funds that generate social and/or environmental good and a range of returns, from principal to above market, to the investor”. This definition makes clear that impact investments can be made in any industry and in a range of financial returns. Another common used definition of impact investing is: “investments intended to create positive impact beyond financial return” (O’ Donohoe et al., 2010). This definition is in line with the definition of the Monitor Institute. The intention to create impact is an important aspect in the definition of impact investing, since accidental generated positive impact is not sufficient, according to Bridges Ventures (2012).

Harji and Jackson (2012) complement the above named definitions by stating that there must not only be intention to create impact, but “there should also be tangible, measurable evidence of social or environmental impact”. Additional to the intention of creating impact, impact should thus be assessed and measured in order for the investment to be defined as impact investment. The most commonly used definition of impact investment, by Saltuk, Bouri, Mudaliar and Pease (2013), summarizes all these previous definitions in the following way; “Impact investments are investments made into companies, organizations, and funds with the intention to generate measurable social and environmental impact alongside a financial return. They can be made in both emerging and developed markets, and target a range of returns from below market to market rate, depending upon the circumstances”.

As above named definitions show, the term impact investing is not an unambiguous term. There are many different opinions relating to how impact investing should be defined. Figure 3 shows some leading organizations in the impact investing industry and which descriptions they use to describe impact investing.



Figure 3 Describing impact investing around the world source: (Harji & Jackson, 2012)

The inability to define one clear definition creates confusion and is preventing the sector from acceleration (Simon & Barmeier, 2010).

In traditional investing the goal is either to maximize financial risk-adjusted return, or to maximize social return, by giving grants (Goetzmann, 1997). By moving away from this traditional idea of investing, a lot more investment opportunities are created. The added value of impact investing compared to this traditional investing is that impact investments can be made in a whole range of social and financial returns and thus offer social investment opportunities for a wide audience. The various returns generated with impact investing are shown in Figure 4. The balance in expected social and financial return depends on the intentions of the investor. This is shown in Figure 4 by the distinction between Impact First investors and Finance First investors. Impact First investors seek to optimize environmental or social returns with a financial floor and Financial First investors seek to optimize financial returns with a floor for environmental or social impact (Freireich & Fulton, 2009).

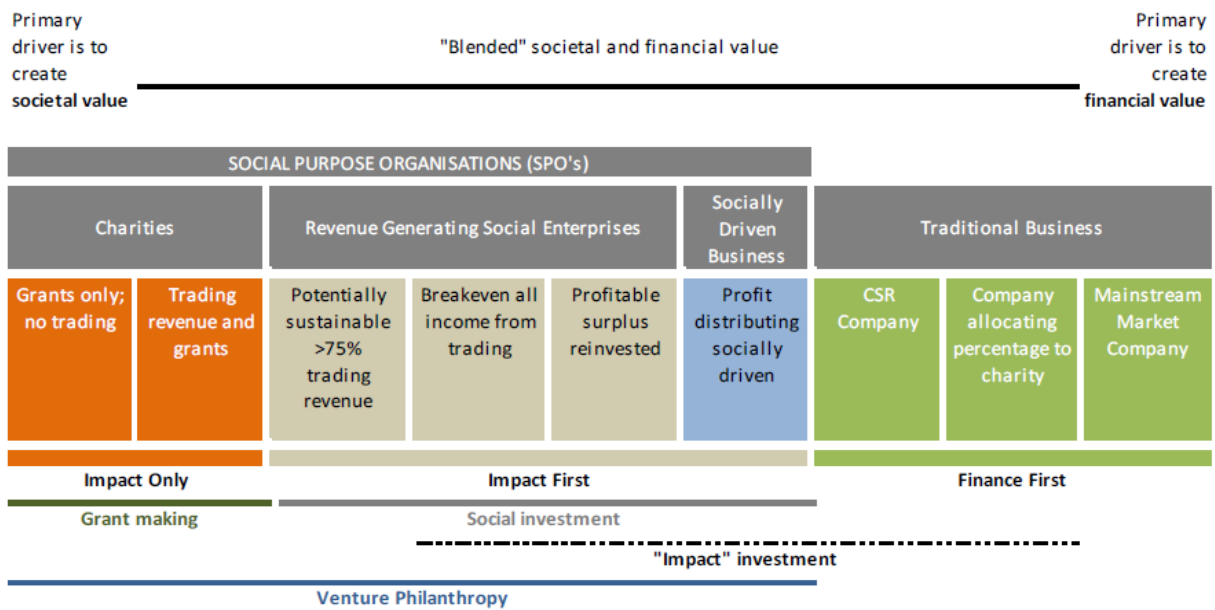


Figure 4 The Investment spectrum Source: (Rangan, Appleby, & Moon, 2011)

Impact investing should not be confused with Socially Responsible Investing (SRI). The two most mentioned differences between impact investing and SRI are that impact investing aims to actively create positive impact while SRI just focuses on negative screening (O' Donohoe et al., 2010; Simon & Barmeier, 2010) and that impact investing generates impact that is actually measured (Harji & Jackson, 2012). Although these differences do correspond to older definitions of SRI (Hamilton, Jo, & Statman, 1993), according to Domini (2011) the differences do not relate to the current view and activities of SRI. The current definition of SRI is much broader, as defined by Domini (2011); SRI is selecting investments by applying standards that include impacts on people and the planet, active ownership, engagement and investing into highly impactful entities such as micro-credit funds and start-ups in positive change fields. Also Evenett and Richter (2011) argues that the activities and definition of SRI have changed over the years and that SRI has departed from its historic roots in negative screening by embracing positive thematic investment, encouraging engagement, and by promoting the integration of environmental and sustainable investment criteria into mainstream investment criteria.

Despite the overlap, Evenett and Richter (2011) also states that there is still a significant difference between impact investing and SRI. According to Evenett and Richter (2011) SRI is a method to evaluate and deal with existing investment opportunities while impact investing is a way to create impact by using new methods, financial structures and investments.

The impact industry has grown rapidly in the past few years and is now even considered by some (Evenett & Richter, 2011; O' Donohoe et al., 2010) as a separate asset class. In the report of O' Donohoe et al. (2010) the authors argue that impact investing is a separate asset class and claim that nowadays the term asset class is used different than before. In their view, an asset class has the following characteristics; (1) a unique set of investment/risk management skills, (2) organizational structures to accommodate this skill set, (3) industry organizations, associations and education, and (4) development of standardized metrics, benchmarks, and/or ratings. These characteristics do not match with the characteristics for an asset class as described by the CFA¹ and the definition of Greer (1997); "a set of assets that bear some fundamental economic similarities to each other, and that have characteristics that make them distinct from other assets that are not part of that class".

Bridges Ventures (2012) show that impact investments can be made in any industry and in any existing asset class with different risks. Economic characteristics will thus differ across impact investments. Due to this fact Harji and Jackson (2012) and Simon and Barmeier (2010) also disagree with the statement that impact investing is a separate asset class.

3.2 Evolution of Impact Investing

The term impact investing is a new term and although the concept of investing to create social as well as financial return has only recently gained more attention, the concept is not new. Impact investing is considered as a form of social investing and has evolved from other types of social investing such as SRI, Mission Related Investing (MRI), Program-Related Investing (PRI) and Ethical investing. Some types of social investing already date from centuries ago. For example, microfinance was being practiced by the Irish Loan Funds in the early 18th century (Hollis & Sweetman, 1997) and Spooner wrote in 1846 about the benefits of small credits for entrepreneurs and farmers as a way to get out of poverty.

Many of the social responsible investments were driven by religious principles in those days. Religious investors avoided investing in enterprises that profit from products designed to kill or enslave fellow human beings (Schueth, 2003). The Religious Society of Friends, also known as Quakers, is seen as the origin of social responsible investing in the modern world. Quakers prohibited members to invest in slave trade. Following on this, many religious motivated responsible investors avoided to invest in "sin" products, like tobacco, alcohol and pornography. The modern roots of

¹A homogeneous set of assets which are mutually exclusive and have a low correlation to other asset classes, make up a significant part of the worldwide investible wealth and have enough capacity to absorb a significant part of an investor's portfolio.

impact investing can be found in the 1960s. During the 1960s, there were several events that raised the interest for social responsible investing. The number of social responsible investors increased again strongly in the 1980s, fueled by the apartheid issue in South-Africa. By then, most social responsible investments were still not suitable for mainstream investors and were only supported by philanthropists or foundations. This changed when in the early 1990s commercial microfinance was being developed and entered the mainstream market some ten years later (Galema, Lensink, & Spierdijk, 2011). Since then more and more investment opportunities are offered that are suitable for the mainstream market by offering a market return while generating environmental or social impact.

The financial crisis of 2008 highlighted the limitations of traditional investment models and led to a broader concept of risk, in which environmental, social and governance (ESG) factors, were included into investment decisions (Harji & Jackson, 2012). The financial crisis accelerated the invention of new investment methods, like impact investing. The beginning of impact investing was in 2007, when the Rockefeller Foundation convened a meeting at its Bellagio Center in Italy. In this meeting the term impact investing was invented and the concept discussed. In 2008, the Rockefeller Foundation approved USD 38 million for building a market and infrastructure for the new Impact Investing industry (Harji & Jackson, 2012). Since then the market has been developing and growing each year. At this moment the market has developed from the “uncoordinated innovation” stage to the stage of “marketplace building” (Figure 5). The expectation is that, if more mainstream players enter the market, the industry could move from building the market place to the stage of “Capturing the value of the marketplace” during the next five to ten years (Freireich & Fulton, 2009).

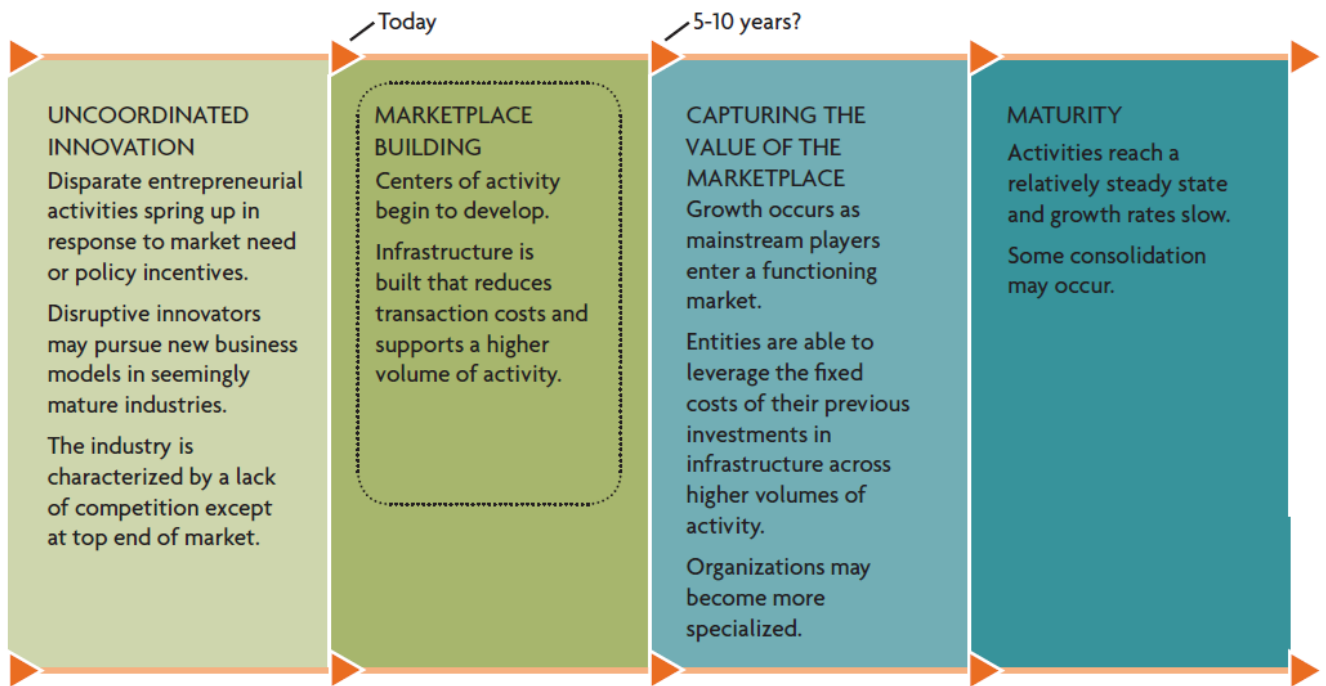


Figure 5 Phases of the impact industry evolution Source: (Freireich & Fulton, 2009)

3.3 Size of the impact market

Since the market of impact investing is still in its infancy, it is hard to make an estimate of the total market size. The most detailed and accurate information on the existing impact investment products is provided by ImpactBase. ImpactBase is a database for impact investing funds and was originally initiated by Imprint Capital Advisors and RSF Social Finance in 2009. Since early 2010 the database is in hands of the Global Impact Investors Network (GIIN). The ImpactBase is intended to connect fund managers and impact investors on a single platform. Managers of impact funds can register their funds, including vital information, in this database. When the fund is registered, the information is available for all subscribed (impact) investors. At this moment over 1000 investors and 258 funds are registered. All the funds together have a total committed capital of USD 15 billion and a targeted capital of USD 24 billion².

The information on the impact funds in ImpactBase is provided by the fund managers and is currently not being verified by a third party. Therefore there is no guarantee that it is actually correct. There

² ImpactBase update June 2013

In total there are twelve different currencies used by the funds on ImpactBase. The USD is used for 78% of the funds, so to be able to analyze the fund data, all data is calculated in USD with the exchange rate of June 4th 2013.

are also substantial differences in the level of information the funds provide. Some funds report extensively on all different aspects, while others hardly report on any indicators.

3.3.1 Supply of impact products

In the rest of this section the existing impact funds with respect to their size, regional focus, target return, status and asset class will be analyzed.

3.3.1.1 Target and committed capital

The difference between the smallest target fund size and the largest target fund size is quite big. The smallest fund targets USD 0.5 million, and the largest USD 1.5 billion. The average target fund size is USD 112.8 million. The median is much lower with USD 60 million. There are 25 funds that do not have a specific target fund size or did not indicate it. Due to this lack of information, it is possible that the highest reported target fund size is smaller than the highest reported amount of committed capital, which is USD 3 billion. The smallest amount of committed capital is USD 200k and the average is USD 77.9 million. The high average is mainly caused by the two largest funds who together provide one-third of the total committed capital. For this reason, the median is with USD 25.1 million also much lower. To get a complete image of the impact investing market yearly reports of J.P. Morgan and the GIIN, about the impact investing market will also be studied and analyzed.

3.3.1.2 Regional Focus

North-America has the biggest market for impact investment. Twenty-seven per cent of all the funds are targeted at North-America, as shown in Figure 6. Many of these “funds” are actually community banks, focusing on affordable housing for low-income households. The second largest group targets Africa (17%). These funds are mainly focused on agriculture and access to basic services. The target regions Asia, Latin-America and globally each represent 16% of the market. The majority of funds that target Asia are microfinance funds. This is understandable, given that India has a large microfinance market. Funds that invest globally, mainly focus on emerging markets all over the world. Again, the majority of these funds are microfinance funds. The smallest part of the funds are focused on Europe and Oceania with respectively 6% and 2% of all funds. Within Europe, Eastern-Europe is the most popular region, while Southern-Europe is only targeted by one fund.

3.3.1.3 Impact investments across asset classes

In the GIIN annual report of 2010 the authors argue that impact investing is an asset class of its own, Greer (1997) defines an asset class as “a set of assets that bear some fundamental economic similarities to each other, and that have characteristics that make them distinct from other assets that are not part of that class. Hence to be defined as a separate asset class, impact investments

should be subject to the same market forces and should have similar risk, return and volatility profiles. This study will show later that impact investments do have very diverse risks, returns and volatility profiles and that impact investments fall within the whole range of existing asset classes.

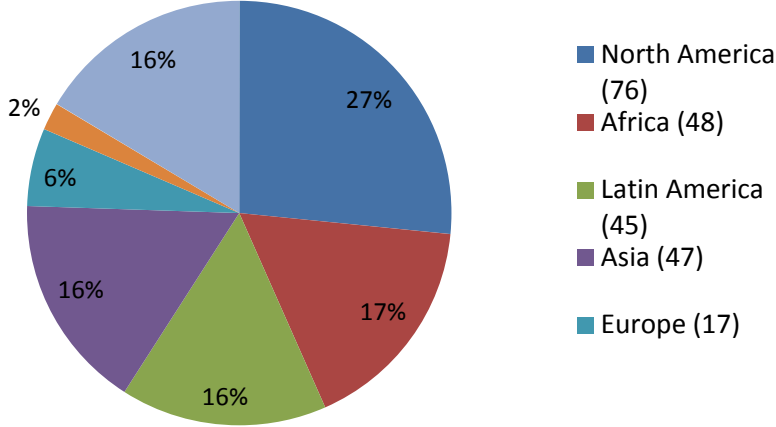


Figure 6 Geographical distribution of Impact funds in ImpactBase Source: ImpactBase, June 2013

The distribution of impact products across different asset classes is shown in Figure 7. The most investments fall within private equity/venture capital investments (56%). With great distance, fixed income is the second most common asset class with 24%. The fixed income products are largely microfinance. This is in line with the findings of Saltuk et al. (2013), who report that 83% of the reviewed impact investing transactions were made in private equity and 66% as private debt transactions. Real assets, including real estate, infrastructure, agriculture and timberland, represent 18% of the investments. These type of funds often focus on making the assets more sustainable or on the development of sustainable products.

Finally, the two remaining asset classes, hedge funds and mezzanine finance, each only represent 1% of the total investments. The asset class public equity is not represented in figure 7, since there are no funds that offer public equity investments in the ImpactBase. Saltuk, Bouri and Leung (2011) also found a remarkably low number of transactions in public equity. Only 2 out of more than 2000 reviewed deals were in public equity. Although the use of public equity for impact investment has been growing, the market is still dominated by private investments. The downside of this is that the impact market is less transparent.

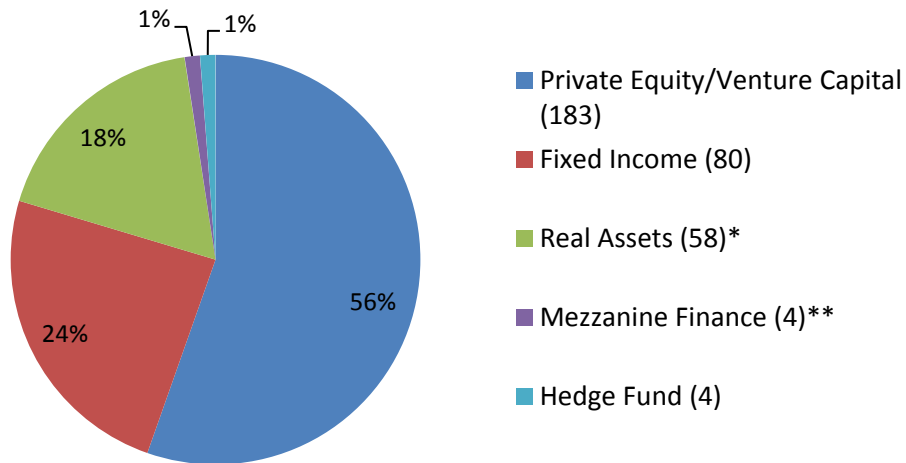


Figure 7³ Proportions of investments in different asset classes in ImpactBase Source: ImpactBase, June 2013

Box 1 – Fund of Funds

In addition to direct impact investment funds, who invest directly into companies or projects, there are also fund of funds subscribed to ImpactBase. These funds invest in other impact funds which on their turn invest with impact. Fund of funds are shown as a separate asset class on ImpactBase, but according to Greer (1997), they can't be defined as such. For this reason they are included, in this study, in the asset class of the funds they invest in. In all six cases, this was private equity. There are 6 fund of funds listed in the ImpactBase, with an overall target fund size of USD 934 million. Which is a rather substantial amount, considering the number of such funds. All six funds are still open for investments and just two are post their first close. The funds indicate that they invest globally. They focus on access to finance as an impact theme. Returns from fund of funds are often lowered by the multiple management fees, but the average management fee of the fund of funds in the ImpactBase is 1.06%, which is lower than the average management fee of all the funds in the ImpactBase.

³ The distribution here differs from the one typically reported by GIIN, the difference lies in the treatment of fund of funds, which we don't show as a separate asset class here. Fund of funds are represented as separate asset class in the ImpactBase. In this report we have chosen to integrate them into the respective asset classes of the funds they invest in. See more information on fund of funds in Box 1.

* Real Assets is defined by impactbase as: "Fund that invests in physical or identifiable assets such as metals, land, equipment, patents, etc.

** Mezzanine Finance is defined by impactbase as: "Mezzanine debts are debts that incorporate equity-based options, such as warrants, with a lower-priority debt."

3.3.1.4 Target Returns

The philosophy of impact being integrated in the mainstream investment products is evident in the number of funds that promise risk-adjusted market rate returns. Given that 77% of the funds promise a market rate of return (Figure 8), these funds are targeted at finance-first investors, who seek attractive financial returns alongside positive societal impact. The rest of the funds, 23%, have target returns below market rate. The funds that offer zero return and promise preservation of capital are more directed at impact-first or philanthropy investors

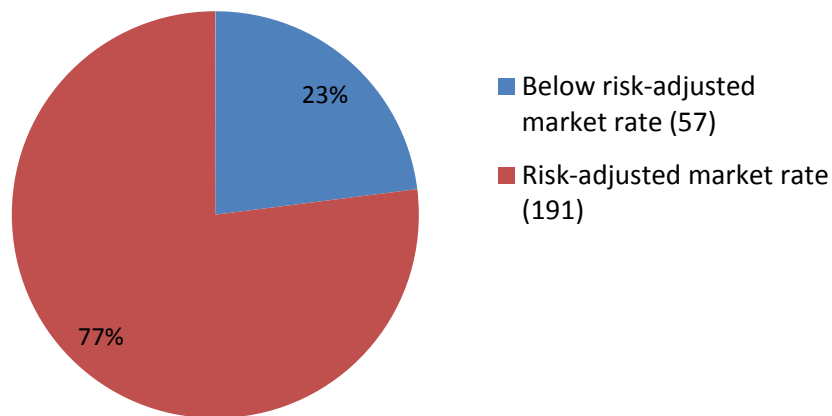


Figure 8 Impact funds according to the expected rate of return Source: ImpactBase, June 2013

3.3.1.5 Fund Status

Given the short history of the impact market, it is not surprising that 75% of the funds are still open for investments and only 1% of all the impact funds are completed (see Figure 9).

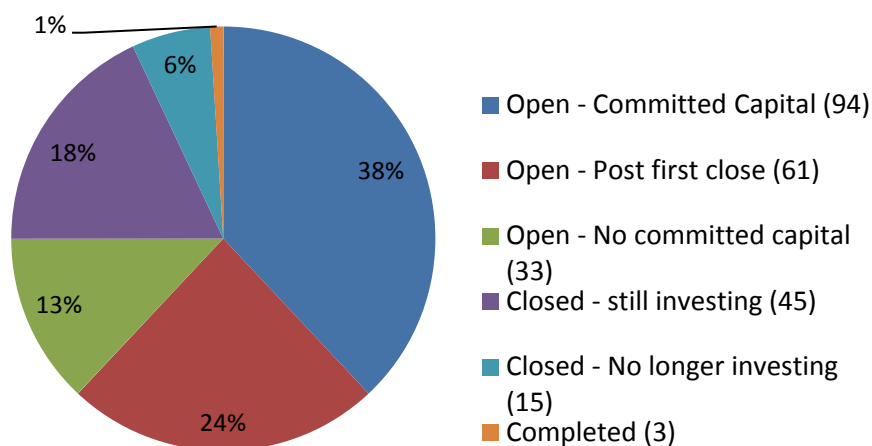


Figure 9 Status of impact funds according to ImpactBase Source: ImpactBase, June 2013

Thirty-eight per cent of the funds has some capital committed, but 13% of the funds don't have any commitments yet. 24% of the funds are closed for investors, 6% are exiting and 18% are still investing. This suggest that there are plenty of investment opportunities. However the challenge that the funds face is the difficulty of exiting investments. Saltuk et al. (2011) reported 286 exits, whereof only one by public offering and eight by a management buy-out.

Impact funds are very diverse in terms of their impact focus, asset class or target region.

Characteristics of impact funds vary a lot among each other. The holding period for example, varies from 1 year to 25 years, as shown in Table 1.

	N	Mean	Median	Minimum	Maximum	Std. Deviation
Holding Period (YRS)	207	8.7	10	1	25	3.1
Return Target (IRR) (%)	185	13.8	14	0	35	8.3
Average Investment size (USD million)	203	5.1	1.6	0.06	193	14.6
Carried interest (%)	157	16.7	20	0	30	3.4
Hurdle Rate (%)	123	7.6	8	0	15	10.3
Management Fee (%)	178	2.1	2	0	5	0.8

Table 1 of impact investment data on ImpactBase Source: ImpactBase, June 2013

The funds with longest holding period are cleantech funds in North-America. Investment size also differs a lot among the funds. The smallest average investment is USD 60k, the largest average investment size is USD 193 million.

3.3.1.6 Fees

Impact funds are often criticized for their high fees. According to the fees of the funds in the ImpactBase this criticism is not justified. As shown in Table 1, the average management fee is 2.1%, which is just above the average 2% management fee in the world market of private equity (Saltuk et al., 2011). The mean carried interest of 16.7% is even lower than the average 20% fee for carry (Saltuk et al., 2011). The average hurdle rate of the funds on ImpactBase is also lower than the average hurdle rate of 8.7% of the world market for private equity (Unsworth, 2012).

Although most funds in the ImpactBase claim to offer a risk-adjusted market rate of return, the mean internal rate of return (IRR) for private equity funds in the database is 15.5%, which is still significantly lower than the average IRR of 19.8% for the private equity market between 1981 and 2001 (Ljungqvist & Richardson, 2003). The average IRR for fixed income funds is with 7.3% less than

half of the average IRR for Private Equity funds. The mean IRR for all funds in the database is 13.8%, as given in Table 1.

3.3.1.7 Impact products for Retail investors

Not all impact funds are available for retail investors. Therefore the next paragraphs will focus on the impact funds that are available for retail investors or private banking.

The eligible impact funds should be open for investments, available for retail or institutional investors (private banking), and have at least a target fund size of USD 100 million. The target fund size of USD 100 million is taken as proxy for liquidity. A bigger fund assumes more liquidity and most investors favor more liquid funds over less liquid funds. In the ImpactBase, 57 funds have a target fund size of USD100 million or more, are open for investments and are available for retail or institutional investors. The average holding period of these funds is 9.23 years and the average return target is 17.38%, which is about 4% higher than the average return target of the funds on ImpactBase. The average management fee of these funds is 1.9%, the average carry fee 17.86% and the average hurdle rate 8.32%. Funds with USD 100 million or more committed are assumed to be more liquid than funds with just USD 100 million of targeted capital. There are 30 funds which have more than USD 100 million of committed capital, but only 14 of those are also open and available for retail or institutional investors. Most of the funds are either microfinance funds, community loan funds or funds that support non-profit organizations or social ventures. Compared to the funds with a target fund size of USD100 million or more, these funds have a little bit shorter average holding period (7.6 years). The average return target is also lower, with 14.5%. The fees and hurdle rates of these funds do not differ than those of the other funds in the ImpactBase.

3.3.2 Dutch impact market

To get a clearer view of what impact products are available for (potential) Dutch impact investors, the Dutch impact market will be described in this section. The size of the Dutch impact market will also be based on funds registered in the ImpactBase. In reality there are many more impact funds in The Netherlands than those registered in the ImpactBase, but to stay consistent with the estimation of the size of the global impact market, only the funds on ImpactBase will be used. To be qualified as Dutch impact fund, either the fund or the parent company should be located in The Netherlands. In total there are 15 funds which meet these requirements. To accurately represent the current offer of Dutch impact products, only the funds that are still open for investments will be taken into account. Of the 15 Dutch funds, 8 are still open for investments. The open funds are shown in Table 2.

Fund	Firm	Status	Investor Type	Target Assets under Management (USD mill)	Committed capital	Target Geography	Risk-adjusted market rate
Triodos Renewables plc	Triodos Investment Management	Open – committed capital	Family Office, Foundations, Institutional Investors, Retail Investors	313	n/a	Europe	Yes
Triodos SICAV II -Triodos Microfinance Fund	Triodos Investment Management	Open – committed capital	Family Office, Foundations, Pension Funds, Institutional Investors	n/a	n/a	Global	Yes
Triodos Sustainable Trade fund	Triodos Investment Management	Open – committed capital	Family Office, Foundations, Institutional Investors	67	29	Africa, Asia, Latin America	Below
ASN Novib Microkrediet fonds	Triple Jump	Open – committed capital	Retail Investors	670	334	Global	Below
SNS-FMO SME Finance Fund	SNS Impact Investing	Open – committed capital	Development Banks, Family Office, Pension Funds, Institutional Investors	201	n/a	Global	Yes
SNS African Agriculture Fund	SNS Impact Investing	Open – committed capital	Pension Funds, Institutional Investors	402	13	Africa	Yes
African Rivers fund	XSML management	Open – no committed capital	Development Banks, Endowments, Family Office, Foundations, Pension Funds	50	n/a	Africa	Yes
Aventura Rural Enterprise Fund	Aventura Investment Partners	Open – no committed capital	Development Banks, Family Office, Foundations, Inst. Investors	67	n/a	Africa	Yes

Table 2 Dutch Impact funds in the ImpactBase* source: ImpactBase 2013

All the Dutch funds together have a total committed capital of USD 376 million and a targeted capital of USD 1.77 billion. This big difference is partly due to the provided information of the funds, only 3 out of 6 funds with committed capital have provided information on the amount of committed

* To calculate the numbers from GBP and EUR in USD, the exchange rates of 21/08/2013 were used.

capital. In comparison to the targeted capital of the total impact market of USD 24 billion, the targeted capital of the Dutch funds is of a considerable size. These findings confirm the statement of Eurosif (2012) that size of socially responsible investments in The Netherlands is amongst the largest in Europe.

The average target fund size of the Dutch funds is with USD 221 million also almost double the size of the average targeted fund size of the whole impact market (USD 112 million). The average targeted fund size is for the Dutch funds also much closer to its median of USD 201 million than it is for the whole market, which has a median of only USD 60 million. In comparison to the whole impact market Dutch funds are quite big. A reason for this is that 6 of the 8 Dutch funds are offered by banks, these can often offer much bigger funds than other organizations.

The target geography for the whole market is mainly focused, because of the many North-American funds, on North-America. Not surprisingly this is different for the Dutch funds. As can be seen in Table 2, Dutch funds don't target North-America at all but mainly target Africa or globally.

All the funds except for the SNS African Agriculture Fund are available for either retail or institutional investors and thus should all be available for Dutch private investors.

3.4 Growth potential of the impact market

With no doubt, the impact market is in its growth stage. However just as its size, the growth potential is hard to determine. First of all, there are several definitions of impact investing used and therefore some figures will be included in one estimate and excluded in another. Impact investments can be made in any asset class and industry, therefore it is hard to identify all the impact investments. Furthermore, with such a young market it is difficult to predict which challenges can be overcome and how the market will evolve.

Only a few institutions have dared to give an estimate of the potential growth of the market. The estimates vary a lot among each other, due to the above mentioned reasons. The first estimate of the potential impact market size was done by Freireich and Fulton (2009) for Monitor institute. In the report it is stated that impact market could grow in the next decade to 1% of global assets, which is about USD 500 billion. The institute estimated the size of the impact market by looking at comparable markets like social responsible investing and studying the data of already existing impact sectors such as clean technology, microfinance and sustainable investing. The estimated growth of the impact market is based on the growth of these different sectors over the past few years.

Microfinance market has for example grown each year with 44% from 2001 – 2006 and the clean technology market had annual growth rate of 60% between 2006 – 2007.

In the report of O' Donohoe et al. (2010) they use a different method to represent the size of the impact market. They estimate the size of the Bottom of the Pyramid (BoP) market in five sectors; housing, rural water delivery, maternal health, primary education and financial services. To estimate the size of the BoP market, O' Donohoe et al. (2010) analyzed case studies of impact business models in each of the covered sectors. With help of the World Resources Institute they estimated the potential customer base for each business model, from which they calculated the potential revenues and profits for each case. For the five sectors they estimate the total potential profit over the next ten years between USD 183 billion and USD 667 billion. The amount of invested capital in the next ten years is estimated between USD 400 billion and to nearly USD 1 trillion. As noted, this is only for the BoP part of the impact investment market and only for five sectors. The potential size would be larger if other sectors and other segments of the impact market were included in the calculation.

Calvert Foundation (2012) conducted a survey in the U.S. to estimate the appetite of institutional investors for impact investing. They surveyed 1,065 financial advisors who are currently managing client assets with on average USD 5 – 10 million assets under management. Although the survey mixes the terms sustainable investing, social responsible investing and impact investing, the survey reports an interest worth USD 650 billion in overall sustainable investing. This is about 2.5% of the respondent's total assets under management. The financial advisors would recommend one-third of their clients to invest in sustainable investment products and would allocate 10%-20% of their portfolios to sustainable investment products. A potential market of USD 650 billion is quite a large estimate of the appetite for impact investments right now. Again, this shows the importance of a clear and unambiguous definition of impact investing, since the terms SRI, impact investing and sustainable investing are often mixed.

Saltuk et al. (2011) executed a perception survey with 52 organizations. Each organization had at least USD 25 million asset under management. The respondents believed that in 10 years time the average allocation to impact investments will be 13% for HNWI and 12% for institutional investors. The median of expected allocated assets differed more between the two types of investors. For HNWI the median was 10% and for institutional investors the median was 5%.

3.4.1 Influence of government and policies on the impact market

Every market is in some way influenced by the government, including the investment market. The government can influence the investment market by acting as a market player or by creating specific

market policies. Policies such as increasing the amount of invested capital, setting market norms, prices, rules or laws and tax incentives are used in many markets. An example of a government policy to increase the amount of invested capital is the Dutch Green Funds Scheme, which offers a tax advantage for investors directing capital to environmental initiatives (Martin, 2013).

Private investments are always, in some extent, influenced by the policies made by governments (Thornley, Wood, Grace, & Sullivant, 2011). These government policies can stimulate or slow down growth of an investment market. According to Thornley et al. (2011) adequate policies are needed in the impact investment market since the private market alone does often not sufficiently promote, and sometimes even prevent, investments with important social and environmental impact. Which could lead to a lack of important social goods, such as affordable housing. Furthermore, Thornley et al. (2011) state that without government policies or intervention, private enterprise may externalize negative costs, like carbon emissions, on society and that on the other hand investments with positive externalities may not necessarily provide extra benefits for the investors. At this moment, most tax advantages for investments are directed towards liquid investments on capital markets (Vaccaro in a report of UKSIF 2013). However most impact investments are long-term and illiquid and thus do not profit from any tax advantages. However, in the UK the government is already active in encouraging the participation of retail investors in social investments by refraining from any restrictions for them and designing tax reliefs for social investments (Vaccaro in UKSIF, 2013). Applying tax incentives for specific impact or social investments would have a positive effect on the growth of the impact market (Giddens in UKSIF, 2013)

Martin (2013) states that the government can play an important role in stimulating the growth of the impact investing industry. According to Martin the government can do this in three ways: stimulating supply of impact capital, directing capital towards impact investments and regulating demand for impact capital. Policies that stimulate the supply of impact capital can be investment incentives such as government risk sharing or co-investing, impact investor requirements or (in)direct impact investments made by the government. Governments can influence how and where capital is invested and can therefore change the amount of capital directed towards impact investments. Setting market prices, improving market information, like measurement standards, and increasing transaction efficiency will improve the risk and return features of impact investments and more capital will then be directed towards impact investment. Stimulating the demand for impact investing capital and the readiness to receive impact investing capital can further encourage the growth of the impact investing market. Increasing the capital absorbing capacity of impact investees will increase the demand for impact investment capital.

Adequate government intervention and policies could thus leverage private capital towards impact investments, increase investment activity and stimulate the overall growth of the impact market.

3.5 Demand for impact investing products

To get insight in the market opportunities, this section will outline the demand for impact investing products, the main types of impact investors and how the demand matches the current supply of impact products. Since the introduction of the term impact investing in 2007, the impact market has been growing (O' Donohoe et al., 2010). The market will only be able to reach its full potential when supply matches demand. Thus for the impact industry to grow, it is important to understand the demand of their investors. As the impact industry wants to attract more mainstream investors, such as large institutional investors and retail investors, this section will mainly focus on the demand of those two types of investors.

3.5.1 Institutional investors

A survey among 99 impact investment fund managers, in the study of Saltuk et al. (2013), showed that most impact investors are High Net Worth Individuals or Family Offices (Figure 10). Although professional investors increasingly want to both “do good” and “do well” with a part of their portfolio (Harji & Jackson, 2012). Institutional investors, like pension funds and insurance companies, are only in the sub top of involved impact investors (Figure 10). Retail investors are even less involved in impact investing, and are at the 7th position. This means there has still a lot to be done to get pension funds, insurance companies and retail investors more involved in impact investing.

As shown by the ranking in Figure 10, institutional investors have not been very active in impact investing until now. A survey among 47 institutional investors showed however that 47 percent expected to have impact investments included in their portfolio within two years (Martin, 2013). This percentage would have to rise if the pension funds want to meet the demands of their clients, 70% of the pension savers namely indicate that they want their retirement to be invested in a social responsible manner (Wheelan, 2012).

Rank	Score	Investor type
1	67	Family office/HNWI
2	59	Development finance institution
3	43	Diversified Financial institution/Bank
4	42	Pension fund or Insurance company
5	40	Foundation
6	12	Endowment (excluding foundations)
7	11	Retail investor
7	11	Fund of funds manager

Figure 10 Fund managers' primary investors⁴ Source: Saltuk et al., 2013

Number of respondents = 51; Respondents ranked up to three in terms of percentage of total capital. In the study of Saltuk et al. (2013) the authors also asked impact product providers about the interest for impact investing of their clients. Eighty-six percent of the respondents felt that “many” or “some” designing an impact investment strategy, and 40% indicated that “many” or “some” clients are already allocating capital to impact investments, the figures can be seen in Figure 11.

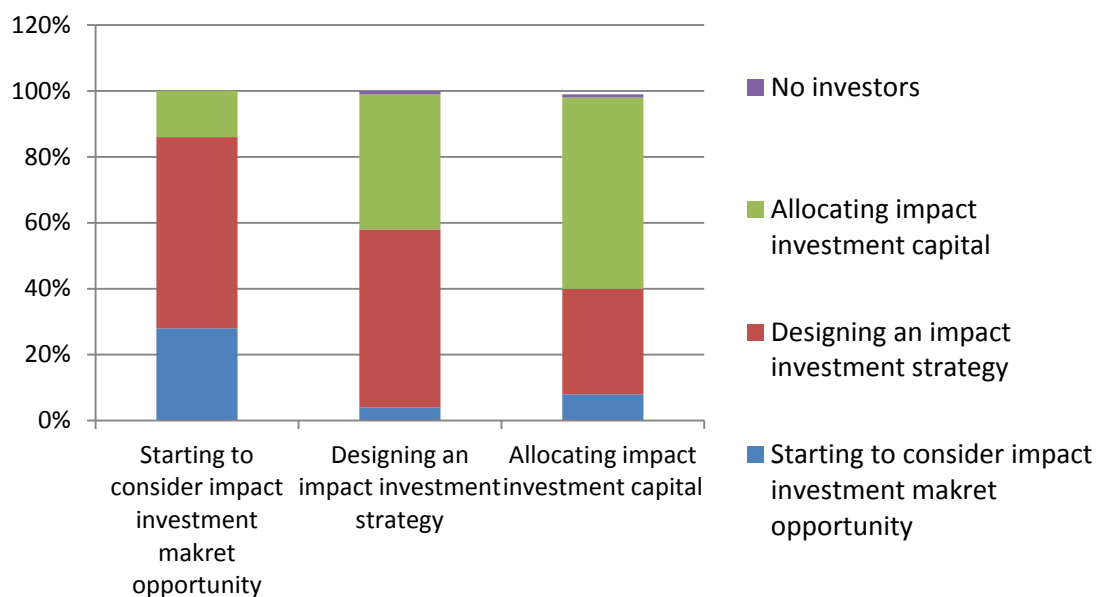


Figure 11 Product providers' description of extent of investors' interest Source: Saltuk et al. 2013

A Dutch study to the appetite of institutional investors, in this case pension funds, for impact investments has been performed by Slegten (2013). In the study, the author surveyed 42 Dutch

⁴ The number of respondents differs from the number of total participants

institutional investors. Slegten (2013) found that already 60% of the surveyed Dutch institutional investors have impact investments included in their portfolio. Of the respondents that have impact investments, 35% invests between 0 – 0.5% of their portfolio in impact investments, 25% between 0.5 – 1% and 35% between 1 – 3%. This seems like a small part, but considering the total invested capital of all the pensions funds in the Netherlands, EUR 960 billion (DNB.nl), even 0.5% is a significant amount of capital. Furthermore, the survey showed that of the non-impact investing respondents, 46% indicated that they are actively considering impact investing in the near future, 40% were also not intending to invest with impact in the near future and 13% declared to have thought about impact investing but were not sure how to deal with it.

In the study of Slegten (2013), 72% of the participants were interested in debt investments, followed by equity investments, with 64% and mezzanine investments were least popular, with only 28% of respondents interested. These findings are more or less in line with the impact products offered in the ImpactBase², where equity instruments are offered most, followed by debt investments and mezzanine instruments are least offered. Slegten (2013) also studied the interest in sectors of the institutional investors. The most popular sectors were renewable energy and food & Agri, 72% of the respondents were interested in investing in these sectors. Second most popular was healthcare and infrastructure with 64% of respondents interested. The subsectors of access to Finance, microfinance and SME financing, were third and fourth with respectively 60% and 52%. The offered impact products in the ImpactBase show a different picture. The most popular offered impact theme in ImpactBase is Access to Finance, with 24% of the total products. Next is Access to Basic Services with 19%, of which 21% is in Agriculture and Food, 18% in Healthcare and 10% in Infrastructure. Only 12% of the funds in the ImpactBase are active in Green Technology/Cleantech . This suggests that impact products, at least in the ImpactBase², do not match with the demand of institutional investors. In the next 5 years, the median allocation of Dutch pension funds to impact investments will be 1 – 4%, which will be equal to an allocation of EUR 22.3 billion - EUR 38.9 billion (Slegten, 2013). The increasing interest from these prominent institutional investors suggests a growth of the impact investing industry (Slegten, 2013).

3.5.2 Retail investors

Next to institutional investors, retail investors are important mainstream investors that can play a significant role in the growth of the impact industry. In regard of impact investing Hope Consulting

(2010) surveyed 4000 higher-income⁵ households in the United States. The survey showed that approximately 50% of the participating households were interested in impact investing. Of the interested households, most were interested in investments with a social bonus, thus being finance-first investors. Also most respondents want to invest in small amounts (under USD 10.000). In total, US higher-income households are willing to invest USD 120 billion in impact investing, which is more than 20% of the expected growth (Freireich & Fulton, 2009) of the total industry in 10 years.

Among consumers, a new trend has emerged in the past few years. The so called “LOHAS”, Lifestyle Of Health And Sustainability consumers. LOHAS are consumers who, individually, want their products to reflect their personal values and, collectively, aspire to positively influence society with their purchases (Martin, 2013). The LOHAS consumer market in the US has grown to over USD 300 billion and is growing at more than 10 percent per annum (Martin, 2013). Although these LOHAS are not really investors, it does show a shift in preference for more sustainable products and thus investments on the consumer side.

3.5.3 Matching supply and demand of impact products

One of the challenges of the impact investing industry is to match demand and supply of impact products. There is not only a lack of investment-ready projects, to place this new offered capital in but also there is a significant mismatch between what type of impact products are offered and what type of products (potential) impact investors demand (Harji & Jackson, 2012). Therefore it is key to create sufficient impact business models that are ready for investment and meet the demands of potential impact investors. First of all, most retail or institutional investors are finance first investors (Hope Consulting, 2010). The impact market has anticipated on this demand by offering a market return on more than 75% of the impact products². Retail investors want mostly to invest small amounts of money (Hope Consulting, 2010), but the funds on ImpactBase have an average investment size of USD 5.2 million and only about 20% of the funds are open for retail investors. On the other hand institutional investors want to place and manage capital at a scale much bigger than USD 5.2 million (Harji & Jackson, 2012). At this moment there are relatively few impact products that offer that opportunity. Only products in the sectors, affordable housing, clean technology and microfinance can offer investment opportunities of sufficient size.

⁵ Households with an income above USD 80K per year

3.6 Summary chapter 3

Impact investments are investments made into companies, organizations, and funds with the intention to generate measurable social and environmental impact alongside a financial return. They can be made in both emerging and developed markets, and target a range of returns from below market to market rate, depending upon the circumstances. By moving away from the traditional idea of investing, maximizing either social or financial return, more investment opportunities are created. Still there are different types of impact investors, there are impact first investors, whom seek to optimize environmental or social returns with a financial floor and there are financial first investors whom seek to optimize financial returns with a floor for environmental or social impact.

At this moment over 1000 investors and 258 funds are registered in the ImpactBase. All the funds together have a total committed capital of USD 15 billion and a targeted capital of USD 24 billion⁶. The average target fund size is USD 112.8 million but the median is much lower with USD 60 million. The management fees of impact funds are comparable to fees of traditional funds and the carried interest is on average even lower for impact funds than for traditional funds.

Compared to the total financial market the impact market is still very small but the impact investment market is growing. Estimates of the growth of the impact market vary from 1% of the global assets (USD 500 billion) to USD 1 trillion in the next decade. The structure of the impact market is particular for the impact industry, most investments fall within private equity or venture capital investments, are targeted at North-America and most capital comes from HNWI's or Family offices. Institutional investors become more and more interested in impact investing, 47 percent of the surveyed institutional investors expected to have impact investments included in their portfolio within two years. Also retail investors become more interested in impact investing, in a survey approximately 50% of the participating households were interested in impact investing. The impact market also shows a trend towards these finance-first investors, more than ¾ of the funds in the ImpactBase promise a market rate of return. The demand and supply of impact products still have to be geared more towards each other, most offered impact products are too big for retail investors but too small for institutional investors. Both types of investors can potentially provide a great deal of capital.

⁶ ImpactBase update June 2013

In total there are twelve different currencies used by the funds on ImpactBase. The USD is used for 78% of the funds, so to be able to analyze the fund data, all data is calculated in USD with the exchange rate of June 4th 2013.

In the beginning of this chapter it is stated that measuring impact is an essential part impact investing. The next chapter will elaborate on this subject.

4 Impact measurement

The definition of impact investing from Harji and Jackson (2012) and Saltuk et al. (2013) states that an impact investment can only be defined as such, when there is (intentionally) *tangible* and *measurable* impact generated. Thus, impact measurement is an essential aspect of impact investing. However, since certain impacts are hard to quantify or even to measure, it is also one of the most complicated aspects of impact investment. This chapter will focus on the importance of impact measurement and on the advantages and disadvantages of some current developed methods of impact measurement.

The importance of impact measurement is shown by the study of Saltuk et al. (2013), in this study 82% of the participating impact fund managers reported that impact measurement is necessary to attract and raise capital from investors (figure 12). Although most (49%) respondents report that it is only necessary for some investors and not (yet) all investors.

Impact investors intentionally seek for opportunities to generate both social and financial return. Where financial metrics help to determine investment opportunities, non-financial indicators, or social metrics, describe the investment process and are used to evaluate the impact of the investment. By measuring impact the outcomes that happened as a result of an investors involvement can be determined and valued.

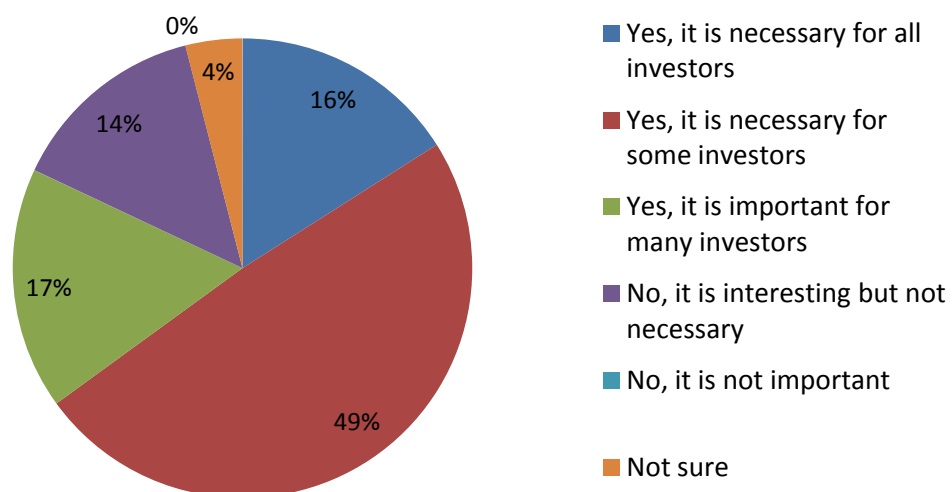


Figure 12 The role of impact measurement in the role of raising capital for fund managers
Source: Saltuk et al. 2013 N = 51

Although measuring impact is one of the most important tasks in impact investing, it is also one of the most challenging tasks. Tracking and measuring financial performance is relatively easy. All financial performances can direct or indirect be quantitatively measured. Measuring social performance is a lot more complicated, as not all social results can be measured quantitatively. Increase of living standard for example is hard to express in numbers and is subject to personal experience and perception.

Impact measurement can be used for different objectives. Investors and investees use these measures in different ways and for different ends. The challenges and opportunities of measuring impact differ for investors and investees as well (Harji & Jackson, 2012) thus there must be notion taken of the different players in the field and their objectives to measure impact when discussing the subject. The impact of a project is initially measured by the (impact) organization or an independent third party, the organizations then report the measured impact to their investors and the investors measure in turn their overall impact by adding together the created impact by each fund in their portfolio.

Several studies ((Best & Harji, 2013; Olsen & Galimidi, 2008b) describe this paradox of demand for standardized measuring methods and specific measuring methods. Best and Harji (2013) write that the diversity of impact regions and themes require specific measuring methods while on the other hand standardized measuring methods may be favored due to its consistency and comparability. As impact can be created in many forms sectors and regions, it is very difficult to create one specific method which measures and values all different types of impact properly. A theoretical solution to this problem was brought up by Olsen and Galimidi (2008), the authors recommend a standardized measuring method which can be customized on specific points, such as regions and type of industry, to increase the accuracy. Both approaches thus have advantages and disadvantages. To give an overview of the current approaches and possibilities to measure impact, the following chapter will describe three standardized methods to measure, track and rate impact and some sector –specific methods to measure impact in this section. In order to measure impact, the definition of impact must be understood first.

4.1 Defining impact

Just as with impact investing there are also multiple definitions of *impact* within the context of social investing. Impact can be referred to as “significant or lasting changes in people’s lives, brought about by a given action or series of actions.” (Roche, 1999). The Business Dictionary defines impact as: “Measure of the tangible and intangible effects (consequences) of one thing's or entity's action or

influence upon another.” Put simply, impact = outcome – what would have happened anyway. In Figure 13 the definition of impact is represented in a scheme.

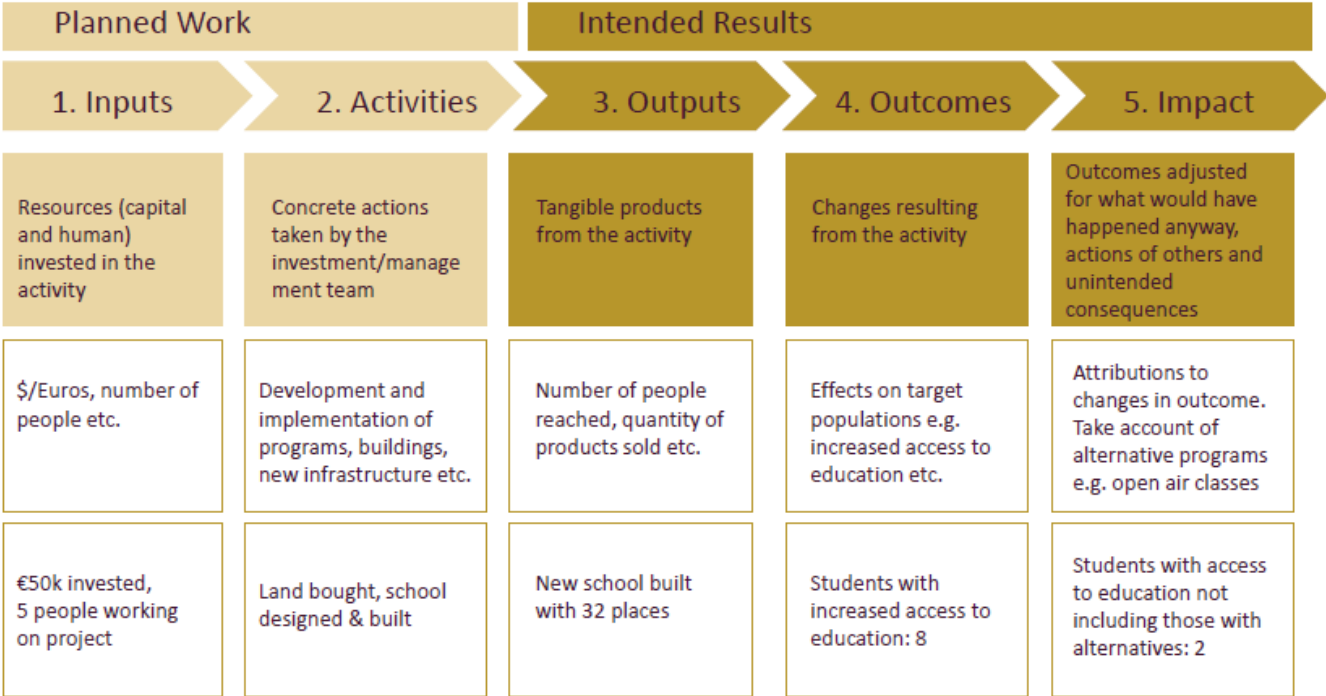


Figure 13 Impact Value Chain Source: Clark, Rosenzweig, Long, and Olsen (2004)

There is an important difference between outputs and outcomes. Outputs are results that can be measured by the company itself and are used as proxies for impact. The output for example, building a school in a rural area in Africa, could be measured as the number of children going to school. The output leads to outcomes. Outcomes are specific changes in attitudes, behavior, knowledge, or skill, including the intended and unintended side effects, that are the result of the organization’s activities. The output number of children going to school could have an outcome such as increased educational level in that area. The outcome may not be confused with the impact, though. The outcome does not take into account what would happen anyway, without the investment. Therefore the impact of the investment is the portion of the outcome that is above and beyond what would have happened anyway. In the situation of the school, the impact would then be the difference in educational level due to the school.

4.2 Implementing impact measurement systems

Measuring impact is crucial for impact investors as well as investees or (impact) organizations. Impact investors can use it to help making investment decisions, identify risk, capture long-term value and to track the progress of an impact project. For investees or organizations impact

measurement can help to improve their business when they notice that their social goals are not being achieved. Furthermore, by measuring impact the organization will be able to identify the progress made towards their impact goals and will be able to communicate this to their investors. Reporting and communicating the achieved impact makes it possible to stay accountable towards stakeholders. This is especially important for fund managers with a fiduciary duty on financial and impact performance. Impact measurement systems should thus be integrated in the investment process.

Olsen and Galimidi (2008a) developed a scheme for the stages of implementing Impact measurement (Figure 14). In the first stage, “implied Impact”, investors or organizations measure impact by using indicators which have been proven through experimental research or substantial empirical evidence to produce that impact. In the second stage, “Proven Impact”, the measured impact is calculated on a net base, which means that the situation “what would have happened anyway” is subtracted from the results. This shows that impacts are demonstrably present rather than just implied. In the last stage, “Optimized impact”, results are not only proven, but are related to the required investment. Over time, the organization’s impact efficiency, the amount of impact generated with a certain amount of capital, can be calculated and analyzed to reveal correlations between achieved impact and money invested.

STAGE	“Implied Impact”	“Proven Impact”	“Optimized Impact”
	STORYTELLING + INTERNAL DATA ANALYSIS	EXTERNAL DATA ANALYSIS + EXPERIMENTAL ANALYSIS	PROVEN IMPACT + INTERRELATIONSHIP WITH FINANCIAL PERFORMANCE
DEFINITION	Through the comparison of our activities and outputs to internal performance targets supplemented by staff and/or customer anecdotes, we believe it works.	We compare our data to existing comparables and experimental or statistical data, and can predict our impacts using these proxies. We also do primary research or partner with third party experts to conduct experiments on a subset of our work to demonstrate our actual impact	We assess our proven impact relative to the investment required and systematically measure the ways our impact affects our financial performance and vice versa.

Figure 14 Stages of impact measurement Source: Olsen and Galimidi (2008a)

The field of measurement is developing quickly, but the diversity and complexity of many of the existing measurement systems can be confusing. Therefore most impact investors or organizations

are still at stage one. At this moment there are 35 impact measurement systems, either as rating, assessment or management tool. It would be too extensively to describe all the systems in this section, therefore the following sections will describe the assessment, rating and management tool of the GIIN which have been put forward as standard tools to measure impact (Harji & Jackson, 2012).

4.2.1 Impact Reporting and Investment Standards

Impact Reporting and Investment Standards (IRIS) is a set of standardized metrics, developed to measure environmental, social and financial performance. It was initiated by the GIIN to provide a standardized set of metrics which will make impact measurement more transparent, credible and accountable. Standardized metrics also make it possible to compare results among organizations or against a defined benchmark. The goal of IRIS is represented in a scheme in Figure 15.

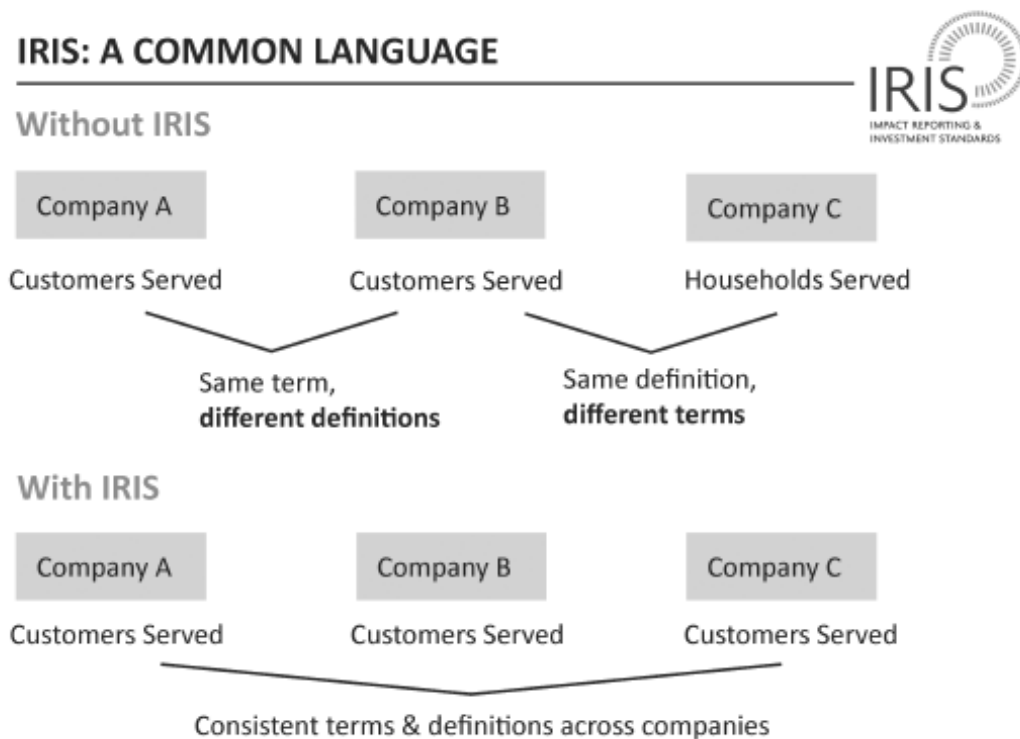


Figure 15 Benefits of standardized (IRIS) metrics Source: Bouri (2011)

In total, the IRIS framework consists of 170 indicators. This includes cross-sector metrics and sector-specific metrics. All organizations, who use IRIS, should report on the six themes of cross-sector metrics; Beneficiaries (Suppliers, Distributors, Clients), Employment, Environmental Performance, Financial Performance, Governance & Social Policies and Product Information. But depending on which sector the organization is active in, the indicators for ; Agriculture, Education, (Energy

Environment, Water), Financial Services, Health or Housing & Community Facilities should be used. A sample IRIS report is shown in the appendix.

The advantages of IRIS are that it supplies an extensive standardized framework for measuring impact in every sector. The framework can be used by almost any organization and the indicators are easy to measure. It makes it also possible to compare the (measured) impact to an industry benchmark or to other organization that have adopted IRIS as well.

There are also disadvantages to using easily quantifiable indicators. Indicators such as number of employees, earned revenue and energy purchased make it easy for organizations to use, but it is questionable if these indicators accurately measure impact. As discussed earlier in this section, indicators that can be measured directly represent output and not generated impact. The situation of “what would have happened anyway” is not taken into account, neither are the intended and unintended side effects of the investment. Without comparison to other organizations or an industry benchmark, the outputs don’t say anything about the social performance. On top of this, the sector specificity of IRIS makes it hard to compare organizations across sectors, what creates more impact; sustainable agriculture or financial access? Lastly, IRIS totally relies on the self-reporting of organizations, which makes the quality of the data hard to ensure. A short example of an IRIS report is given in appendix II.

4.2.2 Global Impact Investment Rating System

Global Impact Investment Rating System (GIIRS) is a rating tool developed by B lab, which uses IRIS metrics and own developed metrics to measure the impact of companies or funds. In order to measure the impact of a company more specifically there are over 40 different versions of the GIIRS company assessment and each assessment consists of 50-120 weighted questions, divided into four impact areas: Governance, Workers, Community, and Environment, which are again divided into different subsections.

The companies are rated in five sections, the four impact areas plus the Socially & Environmentally focused business Model (SEM). Each section gets a weight (of importance) assigned. For the impact areas these weights vary depending on the company’s sector, size, geography, etc., the weight for the SEM is always 30% of the total score. Each subsection gets an amount of points assigned, these points add up to the section score. All the section scores together make up the overall score of the company. The score is then compared to other GIIRS rated companies and translated/converted into a 1 to 5 star rating.

GIIRS has three review levels; an assessment review wherein companies engage in a 1-2 hour call with GIIRS staff to review answers, clarify questions and definitions, and ensure proper inputs for calculations, a documentation review where companies are required to provide documentation to support responses to certain questions and an on-site review, in which each year 10% of the prior year's GIIRS-rated companies will be selected by GIIRS for an onsite review. Ratings are classified by GIIRS according to the level of review undertaken. GIIRS is an excellent tool to increase the efficiency of screening by compare companies on their impact score. With a universal impact rating it is possible to compare the score to other companies in the same market, with the same sector or with the same size. This will make it easier for investors to decide which company to invest in. Furthermore, the three levels of review and the validation of the scores and documents by a third-party makes the score very reliable. But again, the question is if it actually measures impact. The outcomes are measured, but the situation "what would have happened anyway" is not taken into account. This is very hard to determine though and therefore comparison to industry averages or other impact companies in the same market or sector is a valid solution, as also suggested by Olsen and Galimidi (2008b).

4.2.3 Pulse

PULSE is a data management tool which registers and tracks financial as well as social performance with the help of IRIS metrics. PULSE does not track impact, but output data provided by the companies themselves. The data on itself is not of any value but in the context of past data or data of other projects or companies the tracked data is more meaningful. Tracking the data of past projects or other companies the efficiency of a project or company can be determined. This is of course only meaningful when the projects or companies are comparable (to each other). Investors can use the management tool to track the financial and social performance of their total portfolio over time. The use of IRIS metrics makes PULSE universal to use but it also has its limitations. The disadvantages of IRIS framework account for PULSE as well, it doesn't track impact but outputs and some outcomes. Because of the universal use of IRIS companies use different sets of IRIS metrics, which makes it harder to compare companies with each other and just as with the IRIS framework the results rely on self-reporting, which makes the quality of the data hard to assure.

4.3 Challenges in impact measurement

Although measuring impact is important and has its advantages there are also some challenges to overcome. One of these challenges is the diversity of impact opportunities. Impact investments can be made in many different sectors, areas and forms. To be able to measure different types of impact,

several impact indicators need to be measured, however this makes it difficult to create one measurement system which measures all the different types of impact properly (Best & Harji, 2013). It can be desirable to have one single measurement system but in the attempt to create one social metric system the danger exists that not all of the achieved impact is measured or valued correctly (Best & Harji, 2013).

Next to the diversity of the market and the difficulty to standardize metrics, measuring social impact is a resource intensive, and thus expensive, process (Simon & Barmeier, 2010). Another challenge is measuring indirect impact (Best & Harji, 2013). Some impact investments do not only have direct impact on society but also indirect impact. Generating employment could for example directly improve the living-standard of the employed people, which could indirectly stimulate other businesses like restaurants. Taking in mind how difficult it sometimes is to measure direct impact, one could imagine how difficult it is to measure indirect impact.

Furthermore, most impact measurement systems only measure the positive impact an organization is trying to create. The possible negative side-effects are not taken into account. Windmills for example, are good for the environment, regarding cleaner energy, but may have a negative impact on the landscape or cause danger for birds. To measure the total impact of the project properly, these factors also needed to be taken into account. The time it takes for some types of impact to develop also causes challenges. Sometimes it takes a long time before the total impact of the investment becomes visible, maybe even years after the investments have stopped, which makes it hard to track back how much of the observed change was caused by the investment(s).

Most investors spread their investments across different assets in their portfolio and most projects are funded by multiple investors. Having a portfolio with multiple impact investments increases the difficulty to measure the total generated impact of the investor. As mentioned earlier, some impact is hard to quantify and therefore generated impact from different investments in the portfolio can't just be added up. On the other side, the investor will most likely not finance each project totally on its own and therefore is not responsible for the total impact generated by each project. This phenomena is called attribution. The complex part is to determine how much of the total generated impact from a project is caused by each specific investor (Best & Harji, 2013; Slegten, 2013). Some investors invest more than others and not all investments are financially based, e.g. managerial tasks, engagement, etc.

Different approaches of measuring impact could provide solutions for the existing problems. Organizations could for example focus on the one or two most important social or environmental goals, which would represent the core mission of the organization, and make sure that those goals

are measured rigorously (Simon & Barmeier, 2010). Comparison across different impact investments is not possible with this approach, but comparison with similar companies would become more accurate. Another approach could be to focus on expected social return for each investment per dollar invested, this is called social return on investment (SROI). For example the years of quality-adjusted life saved per dollar of investment (Simon & Barmeier, 2010). With this approach impact efficiency can easily be mapped and compared with similar organizations in the field. However, quality-adjusted life is very subjective and therefore hard to properly quantify.

There are thus still some challenges to overcome but measuring impact is a crucial part of impact investing and should therefore be further developed and integrated in the investment process. By setting out an impact measurement framework, the GIIN created the first step towards a standardized method of impact measurement and reporting. Despite some disadvantages, a standardized method is good way to set the infrastructure of impact measurement and prevent confusion between methods, terminology and reported impact. From there on, measuring methods can be further developed and specialized.

4.4 Summary chapter 4

Impact measurement is an essential aspect of impact investing. A survey among impact fund managers showed that 82 percent of the managers reported that impact measurement is necessary to attract and raise capital from investors. Impact investors can use impact measurement to help making investment decisions, identify risk, capture long-term value and to track the progress of an impact project while impact investees use impact measurement to help them improve their business, reach their social goals and to be accountable to their investors.

However, since certain impacts are hard to quantify or even to measure, it is also one of the most complicated aspects of impact investing. Outputs are results that can be measured by the company itself, like number of children going to school, outcomes are specific changes in attitudes, behavior, knowledge, or skill and impact can be defined as outcome – what would have happened anyway. Outputs are relatively easy to measure, outcomes are more difficult to determine and the generated impact per investor is the most difficult to determine due to several factors. Some outcomes, such as the quality of life are very subjective and therefore hard to quantify. One can imagine that measuring the impact on the quality of life is very hard if also the situation what would have happened anyway should be taken into account to measure the impact properly. Measuring social impact is thus a resource intensive, and expensive, process.

The diversity of impact regions and themes require specific measuring methods while on the other hand standardized measuring methods may be favored due to its consistency and comparability. This creates a dichotomy in the used impact measuring methods. On the one hand there are very specific impact measuring methods and on the other hand there are very standardized impact measurement methods. Both have their advantages and disadvantages. Specific impact measurement methods are better able to measure the generated impact of one company or organization accurately but it is more difficult to compare the generated impact of organizations with each other. While standardized measuring methods are less accurate, or sometimes even measure only outputs or outcomes instead of impact, these methods make it easy to compare the generated impact among different impact organizations.

Measuring the generated impact of an investor's portfolio create some more challenges. Since there are often different types of impact created in a portfolio, the impact from different investments in the portfolio can't just be added up. Furthermore, it should be determined how much of the total generated impact from each project is caused by each specific investor. Some investors invest more than others and not all investments are financially based, e.g. managerial tasks, engagement, etc.

5 Portfolio allocation with impact investments

In chapter two the asset allocation in traditional portfolios is described. In traditional portfolios the assets are often allocated solely based on their financial performance. When allocating assets in an impact portfolio the financial performance as well as the (claimed) generated impact should be taken into account. The process of asset allocation is thus slightly different for impact portfolios. In this chapter the methods and possibilities to compose a full impact portfolio are described, along with the possibilities to compose a full impact portfolio with the current supply in ImpactBase, the implementation of microfinance in traditional portfolios. Concluding with new asset allocation methods which meet the requirements of impact investing.

5.1 Total impact portfolios

As shown in chapter two, implementing alternative assets in a portfolio can yield benefits and will add diversification benefits to the portfolio. Impact investments are considered alternative investments and thus might also add value to traditional portfolios. However, to maximize the generated impact, this section will focus on the possibilities of composing total impact portfolios, based on the demands of the largest group of investors, the mainstream (finance-first) investors.

5.1.1 Generating impact across the whole portfolio

The Unified Investment Strategy of Jed Emerson (2002) is a strategy that attempts to generate impact with every investment in the portfolio. The Unified Investment Strategy is based on the principles of the Total Blended Value theory, which was also developed by Emerson. The Total Blended Value theory dismisses the current predominantly idea of value maximization, maximizing either financial or social value. Emerson argues that value maximization is not achieved by maximizing either financial OR social return on investment but by combining the two returns in one maximized blended return on investment (BROI), see Figure 16. In order to maximize the BROI of foundations and financial institutions Emerson (2002) claims that the general view of philanthropy must shift from one that is based on donating to one that is based on investing and that the general understanding of financial investing must shift from solely finance focused to considering social impact. The Unified Investment Strategy uses the blended value instead of the financial value of investments to select and allocate the assets in the portfolio. In this way the strategy enhances the generated social return of the portfolio.

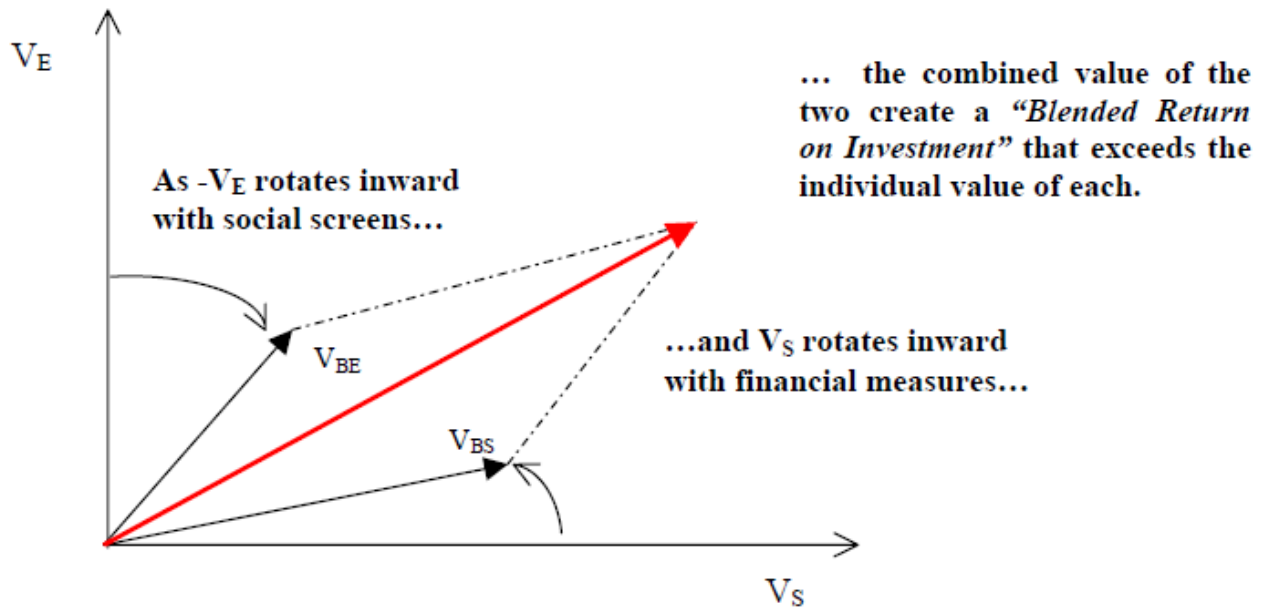


Figure 16 Value maximization with Total Blended Value Source: Emerson (2002)

Emerson (2002) provides a number of examples on how to implement social value in every asset class in the portfolio. In the traditional asset classes Emerson proposes to invest in assets that are in accordance with the Socially Responsible Investing principles. These funds invest with due consideration of financial, social, environmental criteria and do often deliver market-rate returns, so social and environmental value is created against no loss of financial value. In alternative asset classes, like private equity, investments can be made in small or medium sized enterprises that promise to create social and environmental value together with economic value. Examples are companies in the clean-technology industry, microfinance, or in the food & agriculture industry. Although these investments are more risky, they can also offer high returns. At last, Emerson (2002) states that below market investments can increase the social value of the portfolio, with a slight decrease of financial value, which will in the end still amount to an overall increased blended value. Non-profit firms or nongovernmental organizations are examples of possible below-market investment opportunities, these investments give somewhat lower returns than mainstream investments, depending on the amount of social value generated. By implementing some investments with high social return and lower financial return and some investments with high financial return and lower social return, a balanced portfolio competitive portfolio can be composed, which maximized the blended value according to the social and financial goals of the investor.

Another framework for mainstream investors on how to generate impact across the whole portfolio was constructed in the book of Godeke, Pomares, Bruno, Albert, Guerra, & Shefrin (2009), supported by the Rockefeller foundation. The authors constructed a table (Table 3) with possible impact themes and the corresponding investment opportunities in different asset classes. As can be seen in table 3, there are options in every asset class to generate impact.

	Liquidity	Income & wealth preservation			Capital Appreciation & Wealth Growth			Inflation Protection	
	Cash/cash Alternatives	Notes / Other Debt Obligations	Bonds	Absolute Return / Low Equity Correlated	Public Equity	Equity Long / Short	Private Equity	Real Estate	Commodities, Timber & Other Real Assets
Climate change	Green Bank Deposit		Tax-exempt green bonds	CO ₂ Trading	Positive & Negative Screening		Clean Tech Venture Capital	Green REITs	
Energy			Screened Corporate Bonds	Alternative Energy Project Finance	Exchange Traded Funds (ETFs)	Renewable Energy	Energy Efficiency Venture Capital		Sustainable Feedstocks
Water			Corporate Infrastructure Bonds	Water Treatment Project Finance	Unit Investment Trust, Closed End Funds	Water Funds	Water Technology Venture Capital		Water Rights
Community development	Community Bank CDs	Foreclosure Repair		Microfinance Institutions Debt	Shareholder Proxy Voting		Community Development Venture Capital	Transportation – Smart Development Funds	
Social enterprises		Social Enterprise Credity			Micro-Cap Listed Social Companies		Small & Medium Enterprise	Conservation / Ecotourism	
Health & Wellness				Structured Public Note			Consumer Product Venture Capital	Organic Farming	

Sustainable development	Trade Finance Guarantee / Deposit		Smart Growth Municipal Bonds	Blended Debt Equity Hybrid Structures		Thematic Screening			Reach Land, Agriculture	Sustainable Timber
Education	Linked Deposit / Guarantee		Charter School Bonds					Education Private Equity	University Green Building	

Table 3 Illustrative Landscape of Impact Themes with Asset Class Exposures Source: (Godeke et al., 2009)

Further suggestions on how to generate impact in every asset class are given by Trilium Asset Management (TAM) (2012). In this paper TAM introduces: “Total Portfolio Activation”. The concept of TAM is similar to the ones described above, but the authors take a slightly different approach. The authors of the paper describe the possibilities to create impact in five asset classes, cash and cash equivalents, fixed income, public equities, private equity, and real property. The authors argue that for cash and cash equivalents it is important the investment is liquid and therefore suggest to invest in community development credit unions. These credit unions often have a high liquidity and serve low-income and minority communities that are typically underserved by conventional banks. In the asset class fixed income, investments can easily be aligned with impact objectives by re-allocating the investments into bonds that invest in projects with a social or environmental impact goal, for example green bonds. The options to generate impact with public equity investments are diverse, and vary from taking ESG scores into account, to investing only in companies that generate positive impact, like clean technology, sustainable water or women’s equality.

The allocation to private equities in a portfolio is mostly small, but TAM (2012) claims that even with a small allocation to private equity, a high amount of impact can be generated. There are numerous of impact investment options in private equity, this can also be seen by the offered products in the ImpactBase. In the authors’ view the most important aspect in this asset class is to select the right investments, since these can offer high financial as well as social returns but also involve high risks. Examples of opportunities to generate impact in private equity are; clean technology funds, climate funds, microfinance and energy efficiency funds. Lastly, TAM states that generating impact with investments in the asset class real property can be done by investing in affordable housing, green commercial development, farmland in rural settings or managing commodities, like timberland, in a sustainable way.

Another strategy of TAM (2012) to create impact across asset classes is to play an active role in engagement and make use of active ownership, with voice and votes. This can open opportunities to stimulate the company to create (more) impact (with their investments). Next to engagement and active-ownership they advise to join networks around societal issues, because a collective vote can generate more impact than an individual vote and it can be an important method to increase the generated impact of a company or fund.

As the previous described studies show, it is thus possible for mainstream investors to generate impact in every asset class. Although there is impact generated by the investments, these methods and frameworks can't be defined as impact investing. Based on the definition of impact investing, impact investments should be focused on actively solving societal issues and provide measurable evidence of the generated impact. A large part of the used methods by Emerson (2002), Godeke et al. (2009) and TAM (2012) are not real impact investing methods but merely SRI methods. For example positive and negative screening is not part of impact investing but is part of SRI. Also investing in companies that take social and/or environmental factors or even ESG factors into account, is not considered to be impact investing but again merely SRI. So, until now, studies did not manage to construct a full impact portfolio with current offered impact products. To investigate the possibilities to construct a diversified portfolio with only currently offered impact products, only the offered impact products in the ImpactBase will be considered.

5.1.2 Possibilities to compose a full impact portfolio with current supply in the ImpactBase

A well-diversified portfolio consists of at least the three main asset classes, stocks, bonds and cash. Preferably even more asset classes, as shown by Ibbotson (2006), Karavas (2000) and Bekkers et al. (2009). In the ImpactBase, there are impact products offered in five different asset classes, private equity, fixed-income, real assets, mezzanine finance and hedge funds. The large majority of the products are however private equity and fixed-income products. This limits the possibilities to diversify the portfolio. Furthermore, most offered products in the ImpactBase are considered as high-risk investments and presumably have a high correlation between each other. This causes even more difficulties to reduce risk with portfolio diversification. At this moment, there are just not enough diverse impact products in ImpactBase to compose a diversified full impact portfolio.

Based on the used methods by (Emerson, 2002), Godeke et al. (2009) and TAM (2012) and the offered impact products in the ImpactBase, it can be concluded that it's not possible to compose a full impact portfolio with the current supply of impact products. However, it is possible to compose a diversified portfolio and generate some level of impact in every asset class. At this moment that is, by

absence of better options, the best way to invest with “impact” while maintaining a diversified portfolio. The described methods are a step in the right direction but more impact products have yet to be developed in different asset classes in order to be able to compose a diversified full impact portfolio.

5.2 Portfolios with Microfinance

Since the impact investing market is still a young market, there is not much academic literature available. Neither is there are decent track records of impact funds. Given that microfinance is one of the first mainstream impact investment products and has a much more developed market, academic literature about implementing microfinance in a portfolio is being reviewed in the next section, as example for how it could be done with other impact investments.

When considering to implement impact investments, in this case microfinance funds, it is for most mainstream investors important that those investments add value to the portfolio. In the sense that adding microfinance funds would lead to an increased expected portfolio return and a decreased portfolio risk. Expected portfolio return will increase when the returns of microfinance funds exceed the average expected return of a portfolio and risk will decrease when the microfinance funds have a low correlation with other assets in the portfolio.

In a study of the Dieckmann (2007) for the Deutsche Bank, the authors state that microfinance investments have a low correlation to the mainstream assets and the general domestic markets. Bearing in mind that a low correlation with the other assets will decrease the risk of the portfolio, the authors argue that microfinance investments are a valuable option to include in a portfolio, and enhances the efficient diversification of portfolios. Krauss and Walter (2009) found similar results, in their study to the correlation of MFIs with movements in the domestic market of the MFI and movements in the world market the authors found that MFI's are not correlated to the world market, but are significantly correlated to movements in the domestic market. Following these results, Krauss and Walter (2009) conclude that investing in microfinance funds only adds diversification value for international portfolios. Further evidence that MFIs add diversification benefits to an international portfolio is provided by Galema et al. (2011). Galema et al. (2011) studied the diversification benefits of MFIs to a risky international portfolio. The authors simulated a market portfolio with both developed and emerging market indices and conducted a mean-variance spanning tests with short-sale constraints to test whether adding MFIs to an international portfolio would improve the risk-return ratio. The results showed that adding MFIs to an international portfolio will indeed improve the risk-return ratio and thus they concluded that MFIs are a valuable

addition to a broad international portfolio of stocks and bonds, even for investors who seek an optimal risk-return rate.

Since half of the capital, from developed countries, that is invested in the microfinance sector is transported to MFIs through microfinance funds it would be useful to also study the characteristics and performance of such funds. Janda and Svárovská (2010, 2012) performed such studies. Both studies investigated the investment performance of microfinance funds, however the study of 2012 focused on the 21 most commercially developed microfinance funds. In both studies the authors discussed whether the studied microfinance funds are correlated to global developed markets and emerging markets, and whether the performance of microfinance funds exceed returns of global stocks and bonds. In the study of 2010, Janda and Svarovska found that that there is no positive correlation between the returns of the microfinance funds and the global developed and emerging markets, and that on average the returns of the microfinance funds do not provide added returns above the risk premium related to the funds' beta. However in their study of 2012, Janda and Svarovska concluded that there is even a slightly negative correlation between microfinance funds' returns and the performance of developing and emerging markets, and that the returns of microfinance investment funds do exceed risk premium of the funds' beta. Both studies concluded though that microfinance funds are a valuable addition to a global portfolio and can reduce the overall portfolio risk.

The above described studies show that investing in microfinance can improve the risk-return ratio of a portfolio and can provide diversification benefits in international portfolios. This suggests that microfinance funds are also an attractive option for mainstream investors. This is not only a positive sign for the microfinance market, but also for the whole impact investing market. Although most types of impact investing are not yet as well developed or competitive to mainstream markets as the microfinance market, microfinance can serve as an example on how to evolve from small impact first investments to a fully grown competitive investment market for mainstream investors.

5.3 Changing asset allocating methods

Even though the placement of assets is still predominantly based on financial risk and return, non-financial factors, such as influence on environment and society have become increasingly important. Hence the major acceptance and integration of the Environmental, Social and Corporate Governance (ESG) factors in the corporate business industry. The asset allocation methods are thus slowly changing from a pure financial approach to a more sustainable approach. Especially for impact investments, the non-financial factors, and results, are of major importance since it is likely that it's

the core business of the company. Therefore the classical asset allocation methods are not appropriate for impact investments. Environmental and social risk and return should be integrated in the process. One of these methods that integrates financial and non-financial factors is the earlier discussed blended value or BROI, developed by Emerson (2002). BROI combines financial and social return in one blended return. Depended on the blended (expected) return and blended risk, assets can be allocated across the portfolio. However, opposed to financial return, environmental and social return are sometimes hard to quantify, and even harder to compare with each other. This is still one of the main points of critique on integrating environmental and social return in the asset allocation process.

As the asset allocation methods move towards the integration of non-financial factors, the efficient frontier should be adjusted as well. The current efficient frontier is solely based on financial risk and return. By integrating impact in the efficient frontier, investments get a new total value and the efficient frontier transforms from a two dimensional scale to a three dimensional scale in which the financial risk, return and the total impact of the investment, or portfolio, is represented. The 3D efficient frontier is shown in figure 17. By using the 3D efficient frontier, the most efficient impact portfolios can be composed.

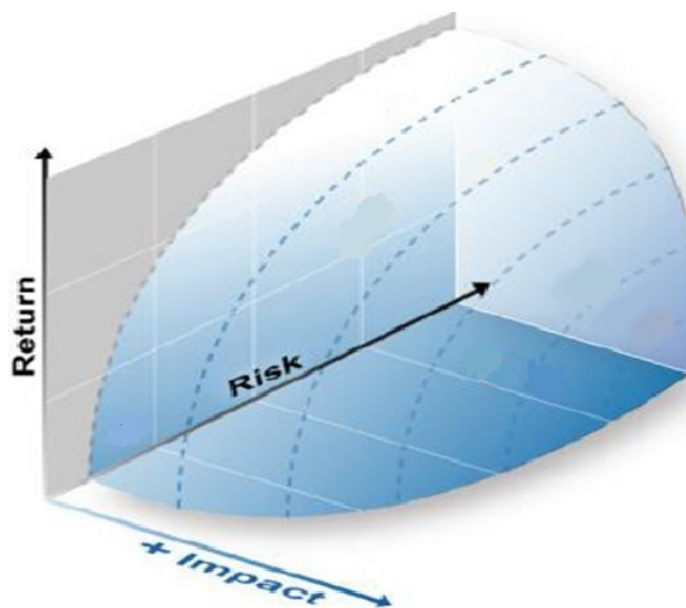


Figure 17 3D Efficient frontier Source: Sarona Asset Management (2013)

To achieve efficiently allocating investments in portfolios based on risk, return and impact, impact should be measured more rigorously and impact measurement should be integrated in companies' reporting standards. This will take time to develop, thus at this moment it is not yet possible to

allocate assets by using the 3D efficient frontier. Which means that the asset allocation further in this report will be based on financial ROI and implied impact.

Summary chapter 5

By carefully selecting the investments opportunities in a portfolio it is possible to generate impact with every asset in every asset class. Some assets will have more social impact than others but when the blended or total value of an investment is taken into account it is possible to create a financially competitive portfolio with a decent amount of impact. However, these methods are not real impact investing methods but merely SRI methods. Based on the funds registered in the ImpactBase it appears to be not possible yet to compose a diversified (competitive) portfolio totally out of impact investments. This is partly due to the lack of public equity investments in the ImpactBase.

Implementing impact investments in traditional portfolios does seem to be possible. Multiple studies show that investing in microfinance or MFI's can improve the risk-return ratio of the portfolio and can provide diversification benefits in international portfolios. Implementing microfinance or MFI funds in traditional portfolios could thus be attractive for mainstream investors.

Although non-financial indicators have become more important in the last few years when deciding where to invest in, it is not integrated in asset allocation methods yet. The foremost reason for this is the difficulty to quantify environmental and social returns. A new idea is to integrate impact in the efficient frontier to create a three dimensional efficient frontier in which the total impact, financial return and risk is represented. But even with this method, the impact is mostly represented by storytelling instead of hard figures.

6 Impact investing at Rabobank

6.1 The Rabobank

The Rabobank is one of the largest banks in The Netherlands and belongs to the 30 largest financial institutions in the world, according to Tier 1 Capital (Rabobank.nl). The total organization has about 60.000 FTE's and operates in 44 countries. The total assets of the Rabobank in 2013 amount to EUR 674 billion and the net profit in 2013 was EUR 2 billion (Rabobank.nl). One of the main focuses of the Rabobank is the Food & Agri sector and especially sustainable Food & Agri projects or investments. This report was written on behalf of the department Sustainability (co-operative and sustainable business) of the Rabobank. The core activities of the department Sustainability are improving the sustainability of the total Rabobank group, investing in sustainable projects, improving the sustainable scores of current investment funds by inter alia engagement, offer sustainable investment opportunities to private investors and HNWI. The Rabo Greenbank is an example of sustainable investment opportunities offered by the Rabobank for private investors. At this moment EUR 2 billion is saved in the Greenbank and these funds are only loaned to progressive sustainable businesses (Rabobank.nl). The Rabobank Group has several impact investment products but these are not all part of the department Sustainability. The Rabobank has a lot of experience with sustainable and social investing, the Rabo foundation for example is an impact-first impact fund which already exists for 40 years. The foundation changed in the last few years from social responsible fund to impact fund by focusing more on measuring the created the impact. Other funds like the Rabo farm measure their created impact as well and although the experience is that true impact is hard to measure, measuring impact does pay off.

Since the impact market is quite a young market, the Rabobank wanted more information about the current situation, composition and potential of the market. With this information the Rabobank wants to study the possibilities to implement impact investments in existing portfolios or the possibilities to create a total impact portfolio which they can offer to private (mainstream) investors.

6.2 Impact Investing entities within the Rabobank group

This section will focus on current impact investing activities within the Rabobank Group. There are already several departments and funds which invest with impact but are not labeled as impact funds. To get a clear (over)view of the current impact activities within the Rabobank Group, information of Rabobank funds which invest with impact was collected and analyzed. The considered impact funds

in this report are presented in table 4. A more elaborate description of the Rabo funds is given in appendix I.

Fund	Impact Themes	Impact indicators	Risk/Return Profile
Rabo Project Equity	Sustainable energy Waste recycling & emissions	CO ₂ emission reduction Total sustainable energy produced by fund projects	Medium Risk High Return of 15% targeted Low - Medium impact return
Dutch Greentech Fund	Clean energy/technology Bio-refinery (Bio-energy and chemicals) Healthy food solutions	Impact measured per project through Life Cycle Analysis (LCA) by EcoChain Energy saved Reduction of CO ₂ emission Decrease in water pollution	High Risk High Return of 8- 15% targeted Medium impact return
Rabo Farm	Food security Vital communities Sustainable Food production	Water & soil contamination reduction Hectares of sustainable farmland under manage Tons of asbestos removed Hectares of land recovered Environmental Site Assessment (ESA) Appendix Impact measurement in development	Medium Risk High Return of 6-12% targeted Low – Medium impact return
Rabo Rural Fund	Access to finance Access to basic services (Health & Education) Employment Generation Sustainable food production	Number of employees Average land area under cultivation Revenues paid to farmers Tons of food production Money invested in community Certifications	Medium Risk Low – Medium return (targeted) High Impact return
Rabo Foundation	Sustainable food production Access to finance Employment generation Social participation	Number of employees Average land area under cultivation Revenues paid to farmers Tons of food production Money invested in community Certifications	Medium – High Risk Low return High Impact return

Table 4 Rabo Impact funds

6.3 Asset allocation of Rabobank

When constructing a portfolio and allocating the assets, the preferences of the client must be fulfilled. There are many different types of investors and they all have different goals. The composition of the portfolio is determined by the preferences, goals, risk-aversiveness and time-horizon of the investor. First, the risk-profile is determined by looking at the time-horizon of the investment together with the risk-aversiveness of the investor. The Rabobank works with six different risk profiles. From principal guarantee to very aggressive, the risk profiles are shown in Table 5.

Remaining investing horizon	Maximum target risk profile	1 year downward risk
More than 15 years	Very Aggressive	-35%
Between 10 and 15 years	Aggressive	-25%
Between 5 and 10 years	Neutral	-15%
Between 2 and 5 years	Conservative	-10%
Between 1 and 2 years	Very Conservative	-3%
Between 0 and 1 year	Principal Guarantee	0%

Table 5 Risk profiles at Rabobank

According to the risk profile, the assetmix of the portfolio is determined. The advised assetmix for 5 risk profiles are shown in Table 6. The assetmix for principal guarantee is not shown because it consists 100% out of cash deposits. For each asset there is a minimum, strategic and maximum advised percentage so that the portfolio can still be adjusted to the preferences of the investor. The risk profile very aggressive has the most stocks, this asset has the highest expected return but also the highest risk. The risk profile very conservative has the most bonds and liquidities, these investments have the lowest expected return, but also the lowest risk. The most used asset classes in impact investing, private equity, fixed income, real assets, hedge funds and mezzanine finance are, except for fixed income, all considered to be alternative asset classes.

Risk profile →	Very Conservative	Conservative	Neutral	Aggressive	Very Aggressive
Asset mix ↓					
Stocks					
Minimum	0%	20%	35%	50%	80%
Strategic	10%	30%	45%	70%	90%
Maximum	15%	40%	55%	90%	100%

Bonds					
Minimum	40%	30%	20%	0%	0%
Strategic	50%	40%	40%	20%	0%
Maximum	60%	50%	60%	40%	10%
Alternative Investments					
Minimum	0%	0%	0%	0%	0%
Strategic	0%	0%	0%	0%	0%
Maximum	15%	15%	15%	15%	15%
Cooperative participation					
Minimum	0%	0%	0%	0%	0%
Strategic	0%	0%	0%	0%	0%
Maximum ⁷	35%	40%	45%	50%	20%
Liquidities					
Minimum	25%	10%	0%	0%	0%
Strategic	40%	30%	15%	10%	10%
Maximum	60%	50%	30%	30%	20%

Table 6 Asset allocation per risk profile⁸

The strategic allocation for alternative investments is 0% for every risk profile. This means that for strategic value there wouldn't be any place for impact investments in a portfolio. Only when an investor specifically wants to invest in alternative investments, the alternative investments are included in the portfolio, with a maximum proportion of 15%. When implementing impact investments in an existing portfolio, they can only account for 15% of the portfolio. The allocation of the 15% alternative investments is shown in Table 7. Also in alternative investments, the investments are divided over different alternative asset classes.

⁷ The maximum weights for the category cooperative participations are the resultant of 100% minus the minimum weights of the other investment categories. Source: Rabobank Private Banking

⁸ The weights are set per period.

Subcategory	Minimum	Strategic	Maximum
Commodities	0%	0%	7.5%
Hedgefunds	0%	0%	7.5%
Private Equity	0%	0%	7.5%
Direct property/real estate	0%	0%	7.5%
Other	0%	0%	7.5%

Table 7 Allocation Alternative investments

6.4 Possibilities to compose full impact portfolio with Rabo funds

As shown earlier in this report that it is not possible to compose a fully diversified impact portfolio with the current supply of impact products, this section will assess what the possibilities are to compose a total impact portfolio of Rabo funds within the limits of the risk-profiles at all. To compose the most efficient portfolio for each risk-profile, the MVO model will be used. To use the MVO model, the risk, expected return and the covariance between the included assets should be known. Unfortunately there is not enough historical data available of the five funds to calculate each risk and return profile and to calculate the covariance between them. To solve this problem data from the Rabobank assets database with information about the characteristics (expected return, variance and covariance) of numerous assets to estimate the risk, return and covariance of each Rabo fund was being used. The estimates are compared to data from other indexes and to data from the study of Doeswijk et al. (2014). Since the used data are estimates, there is a significant margin for error and the calculated expected portfolio return and risk can thus differ from the actual expected risk and return of the portfolio. In the remainder of the report the return and standard deviation (risk) of the proxies are considered as the returns and risk of the Rabo funds. In Table 8 the funds are shown with the used proxies and data.

Fund	Asset class	Proxy	Return	Risk (std. dev.)	μ/σ
DGF	Private Equity	Private Equity Gespreid	8%	22,63%	35,34%
RPE	Private Equity	Private Equity Gespreid	8%	22,63%	35,34%
RFA	Real Estate	Vastgoed Europa	7%	16,95%	41,30%
RRF	Fixed-Income	Emerging Debt	7%	7,29%	96,01%
RFO	Fixed-Income	Emerging Debt	7%	7,29%	96,01%

Table 8 Rabo Impact funds and used proxies

As well as the Dutch Green Tech fund as the Rabo Project equity fund are both private/venture capital funds with diverse projects and therefore Private Equity Gespreid is used as proxy for these funds. The Rabo Farm invests directly into farms and farmland in eastern-Europe and can thus be considered as real estate fund, hence the reason to use Vastgoed Europa as proxy for this fund. The Rabo Rural fund finances primarily trade finance in Africa with a maximum term of one year. These characteristics fit best in the asset class fixed-income, with a focus on emerging-debt. Lastly the Rabo Foundation provides next to donations mainly microcredits, which can also be labeled as Emerging-Debt loans. The optimal allocations are based on maximizing the portfolio return with acceptable downward risk as only constraint. This constraint is implemented to prevent portfolios with beyond acceptable risks, which wouldn't be suitable for market purposes. The maximum downward risk differs from 0% by principal guarantee to -35% by a very aggressive profile. The composed portfolios are thus not allowed to exceed the maximum acceptable downward risk of the used risk profile. The maximum downward risk is calculated with the following formula:

$$\mu_p - (1.96 * \sigma_p) \tag{10}$$

The expected portfolio return is calculated by inserting the individual weights and returns of the Rabo funds in equation 7. The portfolio variance is calculated by inserting the weights and covariance of the Rabo funds in equation 9.

7 Rabo Impact Portfolios

For every risk profile the optimal asset allocation was calculated. For the risk profiles principal guarantee and very conservative it was not possible to create a portfolio that remained within the limits of the maximum acceptable downward risk. For the other four risk profiles it was possible to compose an efficient portfolio within the limits of the acceptable downward risk. Here must be noted that Rabo Farm was not included in any of the portfolios. This is due to the risk-return characteristics of the fund. Rabo Farm has the same expected return as Rural fund or Rabo foundation, but the risk is almost twice as high. Adding this fund to the portfolio would not add any value to the portfolio and even reduce the risk-return ration. The calculated optimal asset allocations are given in table 9.

Risk profile	Conservative	Neutral	Aggressive	Very Aggressive
Fund				
DGF	14%	22.5%	36%	48.5%
RPE	14%	22.5%	36%	48.5%
RFA	0%	0%	0%	0%
RRF	36%	27.5%	14%	1.5%
RFO	36%	27.5%	14%	1.5%
Σw	100%	100%	100%	100%
μp	0.0728	0.0745	0.0772	0.0797
σp	0.0881	0.1145	0.1669	0.2192
μ/σ portfolio	0.826	0.650	0.462	0.363

Table 9 Asset allocations total Rabo impact portfolio

The total portfolio returns range from 7.3% to 8.0% and the standard deviation ranges from 8.8% to 21.9%. While the risk increases significantly towards the riskier profiles, the portfolio return increases only slightly. This can also be seen in the return-risk ratio (μ/σ) which decreases towards the riskier portfolios. This is due to the small difference in expected returns of the individual funds and the relatively large difference in risk between them. This difference is reflected in the efficient frontier of the different portfolios (figure 18). Although the shape of the efficient frontier here below is comparable to the shape of the efficient frontier in figure 1, there is a large difference in steepness of the frontier. The efficient frontier of the Rabo funds is much more leveled out while the efficient frontier in figure 1 is quite steep, which is more favorable regarding the risk-return ratio.

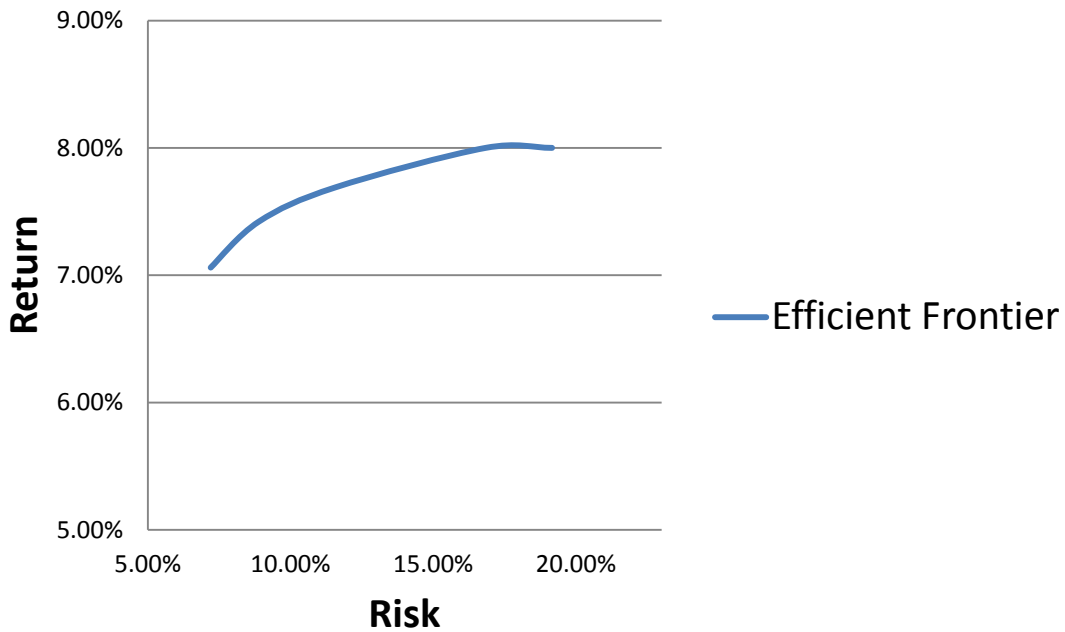


Figure 18 Efficient frontier Rabo Impact funds

To calculate the consequences of implementing impact investments in existing traditional portfolios, with stocks, bonds and liquidities, the optimal asset mixes of the different risk profiles will serve as an impact product in the following calculations. To set a baseline, a traditional portfolio with stocks, bonds and liquidities, is composed for every risk profile. For consistency reasons the optimal traditional portfolios will also be calculated with data from the Rabobank asset databank, the used data is shown in table 10.

Asset class	Proxy	Return	Risk (std. Dev.)	μ/σ
Stocks	Gespreide	8%	16,94%	47,22%
	Wereldwijd aandelen			
Bonds	Euro obligaties staats	4%	3,63%	110,24%
Liquidities	Liquidities	3%	0,35%	852,60%

Table 10 Traditional assets' proxy, return and risk

Again the portfolios are based on maximizing return with maximum acceptable downward risk as only constraint. For every risk profile an optimal asset mix could be created within the constraint. Since only the impact products from the risk profiles conservative to very aggressive remained within the risk constraint the study will only look at implementing those products in a corresponding traditional portfolio. The calculated optimal asset allocations for traditional funds are shown in table 11.

Risk profile	Conservative	Neutral	Aggressive	Very Aggressive
Asset class				
Stocks	51%	67%	99%	100%
Bonds	49%	33%	1%	0%
Liquidities	0%	0%	0%	0%
Σw	100%	100%	100%	100%
μp	0.0603	0.0669	0.0797	0.0800
σp	0.0818	0.1107	0.1682	0.1694
μ/σ portfolio	0.737	0.605	0.474	0.472

Table 11 Optimal asset allocations traditional funds

Although the risk-return ratio of the asset class liquidities is very high, in the shown portfolios in Table 11 the asset class liquidities is not included in any of them. This is due to the low expected return of the asset class, which is, in this case, only useful for the risk profile principle guarantee but not for the represented risk profiles in table 11. The portfolio returns in the traditional portfolios range from 6% in the conservative portfolio to 8% in the very aggressive portfolio. The standard deviation ranges from 8.2% to 16.9%. Again the risk shows much more difference across the portfolios than the return does. Thus an increase of 2% expected return means that the investor should bear about 4% extra risk. This is quite similar to the steepness of the efficient frontier in figure 1. Which suggests that the created optimal traditional portfolios are realistic.

The last step is to implement the created impact products, shown in table 9, in the corresponding traditional portfolios. Which means that the impact product conservative will be implemented in a traditional conservative portfolio. This is done to remain within the boundaries of acceptable maximum downward risk. Where the covariances were available for the separate impact asset classes, they are not available for the new impact products and impossible to calculate without track record. For this reason, the research will focus on the changes in return before and after implementing the impact product. By implementing the impact product pro rata it is assumed that the maximum downward risk will not be exceeded since all the created impact products remained within the boundaries.

The amount of implemented impact is determined by combining predictions about the allocation of impact assets from several studies. In a survey of Gateways to Impact, supported by inter alia Calvert Foundation (2012) the authors predict an allocation of 10% to sustainable investments. Saltuk et al. (2011) predict an allocation of 5% to impact investments within the next 10 years and in the study of Slegten (2013) the pension funds indicate that they will allocate 1-4% of their total assets to impact

investments. Combining these figures results in an average 6% allocation to impact investments in the coming years. In table 12 the new portfolios with the impact products implemented in the traditional portfolios are shown.

Risk Profile	Conservative	Neutral	Aggressive	Very Aggressive
Asset class				
Stocks	48%	63%	93%	94%
Bonds	46%	31%	1%	0%
Liquidities	0%	0%	0%	0%
Impact product	6%	6%	6%	6%
Σw	100%	100%	100%	100%
μp	0,0612	0,0673	0,0793	0,0800

Table 12 Traditional portfolios with 6% impact product

Replacing the traditional asset pro rata for 6% impact products increased the return for the risk profiles conservative and neutral. It slightly decreased the return for the risk profile aggressive and it didn't change the return in the risk profile very aggressive. Only for the risk profile very aggressive the risk of the impact product was higher than the risk of the asset(s) it replaced. The other risk were pro rata higher than the impact product that replaced the assets. Thus it can be assumed that the risk-return ratios of the profiles conservative and neutral have increased. The risk-return ratio of the new aggressive profile shall probably be similar to the risk-return ratio of the traditional portfolio, since the risk and return are very close together. For the very aggressive portfolio, the risk-return ratio has slightly decreased, due to the same return against a higher risk in the new portfolio.

The studies expected on average an allocation of 6% to impact investments in the coming years, the maximum allowed allocation to alternatives by the Rabobank is 15%, thus in order to maximize the implemented impact, the maximum allowed allocation of alternative investments as given by the Rabobank in table 6 was used. Again the traditional assets will be reduced pro rata. The resulted portfolios are shown in table 13.

Risk Profile	Conservative	Neutral	Aggressive	Very Aggressive
Asset class				
Stocks	43%	57%	84%	85%
Bonds	42%	28%	1%	0%
Liquidities	0%	0%	0%	0%
Impact product	15%	15%	15%	15%
Σw	100%	100%	100%	100%
μp	0,0621	0,0680	0,0790	0,0800

Table 13 Traditional portfolios with 15% impact product

The results are similar to the portfolios with 6% impact products. To make sure the risk of the new portfolios does not exceed the risk of the traditional portfolios, the stocks are being replaced by impact products in the last variant. Stocks have a standard deviation of 16.94% while the standard deviation of the impact products ranges from 8.8% to 21.9%. This means that the riskiest impact product exceeds the risk of stocks and will a priori not add any value to the traditional portfolio and will thus not be taken into account. The other resulting portfolios are given in table 14.

Risk Profile	Conservative	Neutral	Aggressive
Asset class			
Stocks	36%	52%	84%
Bonds	49%	33%	1%
Liquidities	0%	0%	0%
Impact product	15%	15%	15%
Σw	100%	100%	100%
μp	0,0593	0,0660	0,0790

Table 14 Portfolios with 15% stock replaced by impact product

The portfolio returns of the risk profiles represented in table 14 are only slightly lower than the portfolio returns of the traditional portfolios. It must be noted though that the risk of the new portfolios in table 14 is lower than the risk of the traditional portfolios, due to the replacement of stocks for less risky impact assets. This means that the risk-return ratio of the portfolios in table 14 might be better than the risk-return ratio of the traditional portfolios.

8 Limitations

This analysis is subject to several limitations. The study focuses on only five funds from one organization, which is not representative for the whole (impact) investing market. Furthermore, the risk and return of the portfolios is only calculated for one upcoming period, therefore these calculations don't say anything about the long-term risk and return. The main limitation however is that there was no track record available for the Rabo funds and thus proxies needed to be used. The MVO method relies totally on the input data and is very sensitive to changes in this input data. Small differences in input changes the outcome massively. Even with decent track records estimation errors are possible and can change the total outcome of the portfolio. The estimation errors add up when for every asset an estimation is made.

Proxies are even less accurate than data from track records. First of all, the right proxy has to be chosen with similar characteristics as the fund in subject and even if the best fitted proxy is chosen, there will always be a small difference in characteristics. This will cause multiple estimation errors and in the end, the obtained portfolio can differ significantly from the real optimal portfolio. The results of this study must therefore be viewed as an indication of the possibilities of partial or total impact portfolios and not as an accurate calculation of optimal impact investment portfolios.

9 Conclusion

The study was set out to explore the current impact market and the possibilities to invest with impact. In particular the possibilities for mainstream investors to implement impact investments in a traditional portfolio and the possibilities to compose a total impact portfolio. Since impact investing is a new term and the impact investing industry is still in its infancy, there is not much known yet about the opportunities for mainstream investors to invest with impact. This is the first study to investigate the possibilities to compose portfolios partially and completely out of impact investments.

The first question in this study was how impact investments can be implemented in existing portfolios of investors with different risk profiles and different social impact appetites. This was examined by studying the literature of implementing alternative assets and microfinance investments in traditional portfolios and by calculating the possibilities to implement Rabo impact funds in traditional portfolios with different risk profiles for clients of Rabobank Private Banking. Literature showed that adding alternative assets to a traditional portfolio increases the diversification benefits and can increase the risk-return ratio. Studies to MFI's and microfinance funds showed that adding microfinance investments to a traditional portfolio improves the risk-return ratio. The results of the empirical research in this study confirmed these findings only partially. The results were obtained by constructing an impact product from five Rabobank impact funds with different levels of risk and different impact themes. The impact product was then implemented in a traditional portfolio by replacing six and fifteen per cent of the traditional assets pro rata. In both situations, the risk-return ratio of the portfolio increased only for the conservative and neutral risk profile while the risk-return ratio decreased for the other profiles.

Thus, by carefully selecting the appropriate impact opportunities investors can implement impact investments in their existing portfolios without losing any return, or sometimes even gaining return. Since impact investments are often risky assets, it is easier for aggressive investors to implement impact investments in their portfolio than for conservative investors. The limited number of available Rabo impact funds caused that implementing Rabo impact funds is only sensible for the conservative and neutral investor.

The second main question was what the possibilities are to compose a total impact portfolio for investors with different risk profiles and different social impact appetites? This was examined by studying the current supply of impact products in the ImpactBase, investigating existing methods to

create impact across the whole portfolio and by calculating the possibilities to compose total impact portfolios for different risk profiles consisting of Rabo funds.

With the current supply of impact products in the ImpactBase it is not possible to compose a total impact portfolio. Although the ImpactBase offers products with a wide variety of impact themes, the variety in asset classes is much more limited. Almost all impact products are offered in an alternative asset classes. The lack of variety in asset classes, and in particular the absence of public equity investment opportunities, make it at this moment impossible to create a diversified investment portfolio from the products in the ImpactBase.

There are some methods though to create impact across the whole portfolio. These methods show that in every asset class there are investment opportunities which create at least some level of impact, this does not necessarily have to be an impact investment. By combining assets with high impact but lower financial value with assets with high financial value but lower impact, it is possible to create an attractive portfolio for mainstream investors which generates impact across the whole portfolio. Thus again, carefully selecting the right impact investment opportunities is very important when one wants to create impact while maintaining a competitive return.

To explore the possibilities to compose a total impact portfolio of Rabo funds, an empirical study was performed. Five impact funds from the Rabobank were identified, all with different levels of risk and different impact themes. Since there is no method yet for allocating impact investments based on their total value, the optimal allocation of the funds for each risk profile, was calculated based on their financial performance. Due to the high amount of risk, it was not possible to create a total impact portfolio for the risk profiles principal guarantee and very conservative. However, the risk-return ratio for the risk profiles conservative and neutral was higher in the total impact portfolio than in the constructed traditional portfolio. For the most risky profiles, aggressive and very aggressive, the risk-return ratio was lower in the total impact portfolio than in the traditional portfolio. Although the risk-return ratio increased for the conservative and neutral profiles compared to the traditional portfolio, the creation of a total impact portfolio solely consisting of Rabo funds will in practice be hindered by the limited number of available funds which make it impossible to create a well-diversified portfolio that could be offered to private investors. A portfolio solely consisting of impact investments is at this moment just not possible, not with the available Rabo funds nor with the available funds in the ImpactBase. First, the number of funds and variety of asset classes in the impact industry and at the Rabobank have to increase before further steps can be taken into the direction of total impact portfolios.

Overall, the findings suggest that impact investments can be a valuable addition to an investment portfolio and that total a impact portfolio could be feasible and attractive for some mainstream investors, however currently only in theory.

As mentioned earlier there are some limitations to this study. There was no data available about the financial performance of the Rabo funds. Therefore proxies had to be used to estimate the financial performance of the funds. These proxies are never as accurate as actual data, and in this case the performance of some funds had to be estimated by the same proxy, due to the lack of more specific proxies. This might have caused a too optimistic image of the returns of the partially and total impact portfolios. Furthermore, due to the lack of track records, the covariance between the impact product and the traditional assets could not be calculated and thus the risk of the constructed portfolio could also not be calculated. This implicated the comparison of the financial performance between the traditional portfolio and the portfolio including impact investments. Nonetheless the limitations of the study, as a first attempt to explore the possibilities for mainstream investors to invest with impact and construct partial and total impact portfolios it gives an adequate impression of the possibilities to invest with impact.

Due to the young market and shortage of data, future studies are needed to get a more accurate view of the total impact market. As the market matures it will be likely that impact funds acquire a track record, this will make it possible to accurately analyze the results of impact funds and to thoroughly investigate the possibilities to create partial and total impact portfolios. For future studies is recommended to use more impact funds with different impact themes, in different asset classes and from different organizations in the empirical research. This will provide a much more accurate view of the impact market and will make it more legit to make a claim about impact investing in general.

This study was the first in attempting to show the possibilities to implement impact investments in traditional portfolios of mainstream investors and to show the possibilities for mainstream investors to compose a total impact portfolio. This study has shown that it is possible to implement impact investments in traditional portfolios while increasing the financial performance of the portfolio and that it is possible in theory to compose total impact portfolios attractive for mainstream investors. The results of this study can contribute to showing investors the possibilities of impact investments and can increase the implementation of impact investments in traditional portfolios.

10 Personal experience report

During the 6 months I was an intern at the Rabobank and was stationed at the Rabobank headquarters for the Dutch market, I have encountered many new and challenging experiences. Before this internship I had never worked for or in a financial company, let alone a bank. The experience of working in such a large company, 27.000 fte in The Netherlands, and working for a bank was quite different from what I expected beforehand.

Beforehand I expected it to be little bit primly and experience a certain degree of clear hierarchy. However, the working atmosphere was open and relaxed, and although there was a certain hierarchy, most employees were easily approachable and willing to help or supply information.

In the office there are almost only flexible working seats and spaces, which encourages collaboration and an open working atmosphere. This represents the mentality and values of the company, especially collaboration is a core value for the Rabobank, since it is a cooperation.

As I mentioned earlier, I had never worked in such an environment and the content of the work was also totally new for me. The unfamiliar content and many new terms and concepts were a challenge but also a real exciting part of the internship. Studying something totally different than I was used to was enjoyable and induced new interests on my side. It did mean though that I had to do a lot of reading and studying in the beginning to understand all the financial terms and concepts.

The working schedule was non-fixed and I was free to decide when I wanted to work and whether I wanted to work at home or at the office, as long as I worked at least 40 hours a week. At the beginning of the internship I didn't really have an organized method or schedule, I just read a lot to increase my knowledge about the subject. After two months of reading and writing a research proposal my supervisor helped to set up a schedule to write the thesis. Every week I had a meeting with my supervisor about the progress of my work. My supervisor checked my work and gave me tips/advice to improve the part that I had written. Since I had to write a report for the financial branch of the Rabobank as well, there were set several deadlines, to be able to present the report in several meetings.

The deadlines and weekly meetings helped me to organize and manage the project but the fact that the project changed several times from purpose/objective made it harder to manage and to decide what is relevant or isn't relevant. This resulted in several hours of unnecessary work and although

some of the work might not have been useful for the thesis in the end, considering several options contributed to do the research rigorously .

Some of the conflicts I encountered were lack of information. Since impact investing is a quite new phenomena there was not a lot of information or scientific articles about it. Furthermore I needed information about the financials of some of the Rabo funds, unfortunately this information was not available most of the funds did not keep track of all the financial details. This lack of information caused the several changes of the research objectives, as mentioned above.

Since most of the work I had to do individually, I worked a lot on my own. When I needed information I could ask my supervisor for help or articles, or people she knew with more information about the subject. The size of the company was an advantage because almost every financial subject has its own specialists within the company/headquarters. I could get in touch with most employees for information about certain subjects via e-mail and sometimes I met the people face to face.

The content of the work represented definitely university level and I had to apply my newly learned knowledge to be able to do the research.

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12 Appendices

Appendix I: Rabobank impact investing funds

Rabo Project Equity

The Rabo Project Equity fund is a private equity fund that operates at the core of the Rabobank's sustainability profile by investing in the development and construction of clean technology or renewable energy projects in Europe. The fund aims to exit the investments once the projects are build and in operation / production, and target at an investment return of 15% IRR. The risk profile of the fund could be compared with an infrastructure type risk profile: low-medium risk with predictable long term cash flows / dividends. Although the fund is 100% Rabobank funded, the projects are structured into valuable investments suitable for institutional investors. Rabo Project Equity supports clients in achieving their sustainability projects by providing knowledge and capital.

Rabo Project Equity	
Geographical Focus	Europe
Impact Themes	Sustainable energy Waste recycling & emissions
Impact Indicators	CO ₂ emission reduction Total sustainable energy produced by fund projects
Target Investors	N/A 100% Rabobank funded
Risk-Return	Infrastructure Risk-return (Low-medium risk)
Asset class	Private Equity/Venture Capital
Min & Maximum Investment	N/A 100% Rabobank funded
Target Return (IRR)	15
Management Fee	N/A
Carry Fee & Hurdle Rate	N/A
Average Holding Period	5

Dutch Greentech Fund

The Dutch Greentech Fund is an initiative of the Rabobank, Wereld Natuur Fonds, TU Delft and Wageningen University. The Dutch Greentech Fund wants to improve innovation of existing Dutch companies and offer support to entrepreneurs who want to make a successful start. To realize impact in the area of sustainability and health by accelerating innovation with capital, knowledge and network. The aim of the Dutch Greentech Fund (DGF) is twofold: (i) generate returns for investors; and, (ii) to promote innovative technologies, products or services that generate measurable and meaningful sustainability benefits in selected sectors.

Dutch Greentech Fund	
Geographical Focus	Netherlands
Impact Themes	Clean energy/technology Bio-refinery (Bio-energy and chemicals) Healthy food solutions
Impact Indicators	Impact measured per project through Life Cycle Analysis (LCA) by EcoChain Energy saved Reduction of CO ₂ emission Decrease in water pollution
Target Investors	Institutional investors
Risk-Return	High risk-return
Asset Class	Venture Capital
Min & Maximum Investment	100k – 2.5m
Target Return (IRR)	8-15%
Management Fee	2-2.5%
Carry Fee & Hurdle Rate	N/A
Average Holding Period	5-6

Rabo Farm

Rabo Farm is an investment manager of non-listed investment funds. The funds focus on investments in natural resources and primary agricultural production. The mission of the Rabo Farm is to initiate, structure and manage funds in which they use the knowledge and network of the Rabobank Group in the Food & Agri sector to give investors access to profitable investments and to support agricultural entrepreneurs in realizing their growth potential. Rabo Farm's focus is on increasing primary agricultural production by improving productivity and the efficiency of existing farms and farmland. It is their aim to invest in closing the agricultural production gap between inefficient and efficient farms in a sustainable way. By increasing the food production in a sustainable way, profit for the investors is generated.

Rabo Farm	
Geographical Focus	Central & Eastern Europe, Africa
Impact Themes	Food security Vital communities Sustainable Food production
Impact Indicators	Water & soil contamination reduction Hectares of sustainable farmland under manage Tons of asbestos removed Hectares of land recovered Environmental Site Assessment (ESA) Appendix Impact measurement in development
Target Investors	Institutional investors
Risk-Return	N/A
Asset class	Real estate
Min & Maximum Investment	Minimum 10M no maximum
Target Return (IRR)	6-12%
Management Fee	Cost plus model
Carry Fee & Hurdle Rate	15% & 9 %
Average Holding Period	ears

Rabobank Rural Fund

The Rabo Rural fund is specially initiated to finance more mature cooperations and agricultural companies in developing countries. It finances sustainable value chains in coffee, cacao, nuts, peppers and vegetables. The fund supports medium sized farmer cooperations and agricultural businesses in poor countries by providing knowledge and, small short-term loans (trade finance) and guarantees so these cooperations are able to grow in a sustainable manner. Interest on these loans should generate a continuous profit.

Rabo Rural Fund	
Geographical Focus	Africa, Asia, Latin-America
Impact Themes	Access to finance Access to basic services (Health & Education) Employment Generation Sustainable food production
Impact Indicators	Number of employees Average land area under cultivation Revenues paid to farmers Tons of food production Money invested in community Certifications
Target Investors	Cordaid, Rabobank International Department of Foreign affairs
Risk-Return	N/A
Asset class	Fixed income (Trade finance)
Min & Maximum Investment	N/A
Target Return (IRR)	N/A
Management Fee	?
Carry Fee & Hurdle Rate	N/A
Average Holding Period	1

Rabobank Foundation

The Rabobank Foundation is an independent foundation within the Rabobank Group, founded by the local banks. It supports projects in The Netherlands and foreign countries with microfinance as well as (charity) donations. In The Netherlands they focus on encouraging/integration social activation of vulnerable and disadvantaged people to increase the participation and self-reliance. In foreign projects the fund focuses on supporting or building small agricultural cooperations . These could be farm producer organizations or save and credit cooperations. The fund helps these member organizations to obtain autonomy and independency. By supporting these projects the Rabobank Foundation wants to reduce poverty in the world on an economic basis so the cooperations can realize their health and wealth ambitions without the help of the Foundation.

Rabo Foundation	
Geographical Focus	Africa, Asia, Latin-America, Netherlands
Impact Themes	Sustainable food production Access to finance Employment generation Social participation
Impact Indicators	Number of employees Average land area under cultivation Revenues paid to farmers Tons of food production Money invested in community Certifications
Target Investors	Rabobank Group Local Banks HNWI Employees RabobankN/A
Risk-Return	N/A
Asset class	Fixed income (microfinance)
Min & Maximum Investment (EUR)	-
Target Return (IRR)	Retrieving money
Management Fee	N/A
Carry Fee & Hurdle Rate	N/A

Average Holding Period	N/A
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Appendix II: IRIS Sample report

Source: [http:// iris.thegiin.org](http://iris.thegiin.org)

Free-to-bee Honey
Consolidated IRIS Report (Q2 2010)
(Currency Values in Chinese Yuan Renminbi)

12.1.1.1 Organization Description

Report Information	
<u>IRIS ID</u>	65676778
<u>Report Start Date</u>	Apr 1, 2010
<u>Report End Date</u>	June 30, 2010
<u>Reporting Currency</u>	CNY
Organization Description	
<u>Name of Organization</u>	Free-to-bee Honey
<u>Location of Organization's Headquarters</u>	Group 1, Libo Village, Mudo County, Suzhou City, China
<u>Legal Structure</u>	Corporation
<u>Customer Model</u>	B2B

<u>Mission Statement</u>	To deliver the highest quality honey and honey products around the world while increasing the capacity and income of Chinese beekeepers and maintaining sustainable land use practices.
<u>Social Impact Objectives</u>	<ul style="list-style-type: none"> - Agricultural productivity - Capacity-building - Income/productivity growth
<u>Environmental Impact Objectives</u>	<ul style="list-style-type: none"> - Sustainable land use

12.1.1.2 *Product Description*

Organic Honey	
<u>Product/Service Type</u>	Agriculture
<u>Product/Service Detailed Type</u>	Livestock processed
<u>Product/Service Description</u>	Organic Honey
<u>Unit of Measure</u>	Metric tonnes
<u>Livestock/Fish Type</u>	Honey
<u>Target Beneficiary Socioeconomics</u>	<ul style="list-style-type: none"> - Poor - Very Poor
<u>Target Beneficiary Location</u>	<ul style="list-style-type: none"> - Rural
<u>Client Locations</u>	<ul style="list-style-type: none"> - BELGIUM - FINLAND - GERMANY - UNITED KINGDOM - UNITED STATES

Supplier Locations	- CHINA
Certifications	- OCIA Organic, certified since February 2008 - USDA Organic, certified since March 2008

12.1.1.3 Financial Performance

Income Statement	
Earned Revenue	¥25,406,504
Cost of Goods Sold	¥19,054,878
Gross Profit	¥6,351,626
Selling, General, and Administration Expense	¥4,258,634
Operating Expense	¥5,183,634
Net Income	¥494,120
Balance Sheet	
Cash and Cash Equivalents- Period End	¥1,215,480
Equity or net assets	¥2,245,307
Ratios Concepts and Calculations	
Operating Profit Margin	1.94%

[Return on Equity \(ROE\)](#)

22.01%

12.1.1.4 Operational Impact

Governance and Policies	
Board of Directors	5
Board of Directors: Meeting Frequency	Annually
Code of Ethics	Yes
Local Compliance	No
Financial Statement Review	Yes
Supplier Evaluation	Yes
Environmental Management System	<ul style="list-style-type: none">- Policy statement documenting the organization's commitment to environment exists- Internal or external assessment undertaken of the environmental impact of the organization's business activities
Employees	
Permanent Employees	23
Full Time Employees: Female	4
Full-time Employees: Managers	6
Part-time Employees	4

<u>Permanent Employee Wages</u>	¥88,500
<u>Full-time Wages: Females</u>	¥12,000
<u>Full-time Wages: Management</u>	¥33,900
<u>Part-time Wages</u>	¥9,600

12.1.1.5 *Product Impact*

Quantity and Reach	
<u>Units/Volume Sold</u>	375 (metric tonnes)
<u>Units/Volume Sold:Certified</u>	375 (metric tonnes)
<u>Sales</u>	¥25,206,108
<u>Sales:Certified</u>	¥25,206,108
<u>Units/Volume Exported</u>	356 (metric tonnes)
<u>Sales from Exports</u>	¥25,006,229
Quality and Performance	
<u>Group-based Training</u>	4806
<u>Technical Assistance</u>	1254
Supplier Information	

<u>Supplier Individuals: Smallholder</u>	5760
<u>Payments to Supplier Individuals: Smallholder</u>	¥16,152,847
<u>Units/Volume Purchased from Supplier Individuals: Smallholder</u>	375 (metric tonnes)