



**THE
INVESTOR'S
PERSPECTIVE**

Constructing a portfolio
on the efficient impact-
financial frontier within one
asset class

INTRODUCTION

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The Impact Management Project is a collaborative effort by over 700 organizations, from different contexts and countries, to agree on shared fundamentals for how we talk about, measure and manage impact – and therefore our goals and performance.

Shared fundamentals for describing the effects that different underlying businesses – or portfolios of businesses – have on people and planet help investors to understand the different options available to them within each asset class. Investors can then build a portfolio that matches their intentions and constraints, and their financial and impact goals.

The Impact Management Project has been working with Root Capital to provide guidance for individual funds within a single asset class, who are looking to build a portfolio on the efficient frontier of both financial **and** impact performance.

A complementary [paper authored with UBS](#) describes how investors can take a ‘total portfolio’ approach to impact across asset classes, by matching the financial and impact goals of various investment products to investors’ intentions and constraints.

The report has been co-authored by Root Capital and the Impact Management Project Team. Root Capital is an impact investor that provides loans and advisory services to agricultural businesses in Africa, Latin America, and Indonesia. The fund manages about \$100 million in assets, and since 1999, has disbursed more than \$1 billion to over 600 businesses which in turn reached 1.2 million farm households. Root Capital partners with global food and beverage companies to improve farmer livelihoods while strengthening value chains, and is funded with a combination of grants and investments from prominent foundations, development finance institutions, wealth managers, and individual investors.

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Note

This paper draws on content from Root Capital’s article “[Toward the Efficient Impact Frontier](#)”, in the Winter 2017 issue of Stanford Social Innovation Review. We thank the editors of SSIR for permission to reproduce a portion of that content here.

CONTEXT SETTING

The five dimensions of impact

In finance, we use shared fundamentals about performance – such as return, volatility and liquidity – to describe and manage against our respective financial goals. We also use asset classes, which group investments with similar financial performance, to facilitate alignment with investor expectations. Financial capital flows, and the investment management ecosystem have grown, not just because we have common accounting standards but because we have evolved these shared fundamentals for communicating and aligning our expectations. It would be impossible to uphold any notion of “fiduciary duty” if we didn’t.

For impact, we now have a shared understanding that all businesses – and therefore all investments – have effects on people and planet, both positive and negative. Our impact is the combination of our **material effects on people and planet**. Effects are material when they:

1. Relate to important positive or negative outcomes (WHAT).

2. Are significant (HOW MUCH), based on:

- **how deep** the effect is, based on data about whether the effect is a deep or marginal driver of the outcome
- **how many** people the effect occurs for, based on data about the number of people experiencing the effect
- **how long** the effect lasts for, based on the time from beginning of the effect to end of the effect

- **how quickly** the effect occurs, based on data about the time it takes for an business to generate its effect
- 3. Occur for underserved people or the planet (WHO),** where ‘underserved’ is defined as a population, species or the planet that does not currently experience – or have the opportunity to experience – the important positive outcome that the effect relates to, or is experiencing an important negative outcome as a result of the effect.

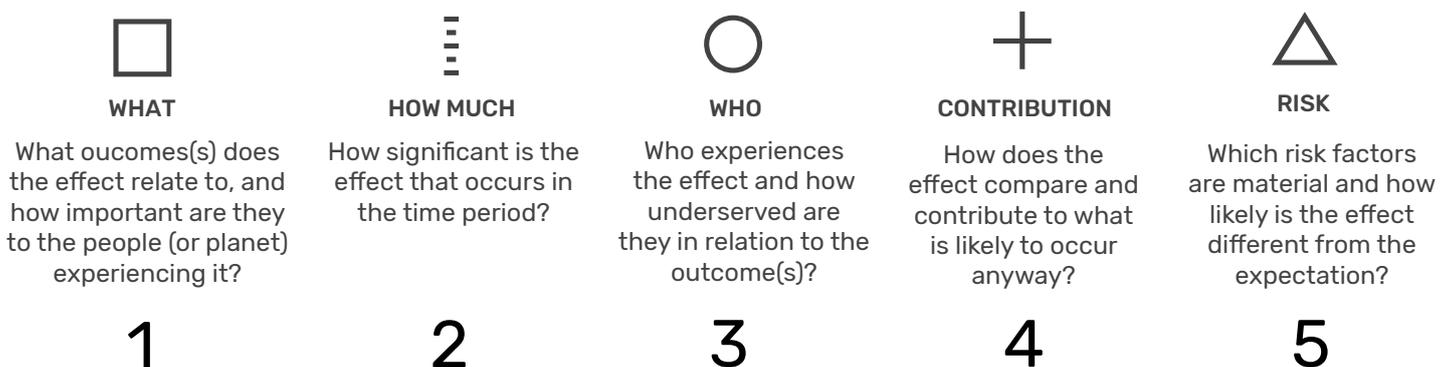
When deciding if and how to manage the material effects we are having, we also consider:

4. Whether our role makes the effect better or worse than is likely to occur anyway (CONTRIBUTION), by benchmarking whether the effect:

- leads to more important positive or negative outcomes than are currently occurring for people or planet, and/or
- is more or less significant than the effect that people (or the planet) are currently experiencing, in terms of depth or the number of people it occurs for or how long it lasts for or how long it takes to occur, and/or
- occurs for people (or the planet) who are more or less underserved than those currently experiencing it

5. The likelihood that the effect is different from our expectation (RISK).

Figure 1: Five dimensions of impact



For examples on each dimension please [follow this link](#).

CONTEXT SETTING cont'd

Using the five dimensions to select investments

In reality, most business models generate a range of good and bad effects. For example, businesses with harmful products or sourcing practices might support high quality jobs in an economically distressed community. Conversely, business models that provide life-saving services might cause significant environmental emissions, nonbiodegradable waste, or require animal testing. Since positive and negative effects do not cancel each other out (except in cases such as carbon emissions), impact management can involve businesses and their investors having to decide that achieving a certain material positive effect is worth, at a point in time, generating a possible negative effect. But impact management still means setting goals to try to mitigate that negative effect over time.

The extent to which businesses set goals to prevent negative impact and increase positive impact depends on their intentions, which fall into broad archetypes:

- Those who try to avoid harm to their stakeholders, either because they care about being responsible citizens or because they want to mitigate risk, or both
- Those who do not just try to avoid harm but also want to generate benefits for their stakeholders, either because they believe that businesses that

have positive effects on the world will sustain long-term financial performance or because they believe that businesses should serve society, or both

- Those who try to avoid harm and generate benefits for their stakeholders but also want to contribute to solutions to specific social or environmental challenges for a particular stakeholder group.

The five dimensions help us all to understand a business' material effects on people and planet – and therefore help investors to select investments that have the greatest likelihood of achieving their own intentions (see Figure 2).

For example, if an investor wants to use some of their capital to help everyone in the world have the opportunity to achieve good health (Sustainable Development Goal #3 – “What”) she or he cannot assume any investment in healthcare is relevant. The investor will look for business models that not only set goals to prevent material negative effects but also set goals to have a **significant** effect (in terms of depth/scale/duration – “How Much”) on the health of **underserved** people (“Who”), resulting in a **likely better** situation relative to what would otherwise happen (“Contribution”), with any **risk** of impact failure (“Risk”) justified by the level of positive impact if things go as planned.

Factoring in the *investor's* contribution



When considering the impact of an investment, an investor also factors in their own contribution. The impact of an investment is a function of the investee's impact (across the five dimensions), plus the **contribution** that the investor makes to enable the business to achieve that impact. Investors can use a variety of strategies to contribute to businesses' ability to generate impact. They can:

+ Signal that impact matters: choose not to invest in or to favour certain investments that, if all investors did the same, would ultimately lead to a 'pricing in' of effects on people and planet by the capital markets more broadly. Some people think of this as 'values alignment'.

+ Engage actively: use expertise and networks to improve the environmental/societal performance of businesses. Engagement can include a wide spectrum of approaches – from dialogue with companies to investors taking board seats and using their own team or consultants to provide hands-on management support (as often seen in private equity). While a significant dialogue with companies, including about environmental, social and governance factors, is a normal part of the fund management process, the phrase 'engage *actively*' reflects a strategy that involves, at a minimum, significant proactive efforts to improve businesses' effects on people and the planet.

CONTEXT SETTING cont'd

+ Grow new or undersupplied capital markets: anchor or participate in new or previously overlooked opportunities that offer an attractive impact and financial opportunity. This may involve taking on additional complexity, illiquidity or *perception* of disproportionate risk. In public equities, bonds or infrastructure, an investor might move from holding mainly well-subscribed issuances (which is just a signalling strategy) to participating in a higher proportion of undersubscribed issuances.

+ Provide flexible capital: recognise that certain types of businesses will require acceptance of disproportionate risk-adjusted return in order to generate certain kinds of impact. For example, creating a new market for previously marginalised populations can require very patient capital that cannot offer a commercial return.

The types of contribution that we make are driven by our **constraints as much as our intentions**. For example, a retail investor, who does not have the expertise to engage directly with businesses and who needs significant liquidity, may be satisfied with making a different type of contribution than the one that a non-profit organisation or ultra-high net worth individual might want to make.

Figure 2 below shows that the impact goals of an investment are a function of the impact goals of the underlying business, or portfolio of businesses, that the investment supports (x-axis), plus the **contribution** that the investor makes to enable the business(es) to achieve those impact goals (y-axis). The table therefore plots the landscape of relevant investment options currently available to investors.

Figure 2: The landscape of investment opportunities

		Avoid harm	Benefit stakeholders	Contribute to solutions		
IMPACT GOALS	☐ WHAT	Important negative outcomes	Important positive outcomes	Specific important positive outcome(s)		
	⋮ HOW MUCH	Marginal and For few	Various	Deep, and/or for many and/or long-term		
	○ WHO	Underserved	Various	Underserved		
	+ CONTRIBUTION	Likely same or better	Likely same or better	Likely better		
	△ RISK	Various	Various	Various		
INVESTOR'S CONTRIBUTION	Signal that impact matters + Engage actively + Grow new or under-supplied capital markets + Provide flexible capital	E.g. Ethical bond fund	E.g. Positively-screened/best-in-class ESG fund	E.g. Sovereign-backed bonds (secondary market) funding vaccine delivery to underserved people or renewable energy projects	Competitive risk-adjusted financial returns	FINANCIAL GOALS
	Signal that impact matters + Engage actively + Grow new or under-supplied capital markets + Provide flexible capital	E.g. Shareholder activist fund	E.g. Positively-screened/best-in-class ESG fund using deep shareholder engagement to improve performance	E.g. Public or private equity fund selecting and engaging with businesses that have a significant effect on education and health for underserved people		
	Signal that impact matters + Engage actively + Grow new or under-supplied capital markets + Provide flexible capital	E.g. Anchor investment in a negatively-screened real estate fund in a frontier market	E.g. Positively-screened infrastructure fund in a frontier market	E.g. Bond fund anchoring primary issuances by businesses that have a significant effect on environmental sustainability, access to clean water and sanitation		
	Signal that impact matters + Engage actively + Grow new or under-supplied capital markets + Provide flexible capital		E.g. Positively-screened private equity fund making anchor investments in frontier markets	E.g. Private equity fund making anchor investments in businesses that have a significant effect on income and employment for underserved people		
	Signal that impact matters + Engage actively + Grow new or under-supplied capital markets + Provide flexible capital			E.g. Below-market charity bonds, or an unsecured debt fund focused on businesses that have a significant effect on employment for underserved people		
	Signal that impact matters + Engage actively + Grow new or under-supplied capital markets + Provide flexible capital			E.g. Patient VC fund providing anchor investment and active engagement to businesses that have a significant effect on energy access for underserved people		

THE EFFICIENT FRONTIER

Building a portfolio that optimises for a joint function of impact, risk and return

Investors have different combinations of impact and financial goals. This paper is relevant for any investor who is looking to build a portfolio that:

- maximizes risk-adjusted financial return, while offering as much risk-adjusted impact¹ as possible at that level of return; or
- maximizes risk-adjusted impact, while offering as much risk-adjusted financial return as possible at that level of impact; or
- achieves an intermediate combination of risk-adjusted impact and risk-adjusted financial return that the investor desires (which may mean at least equivalent to other available investments).

In other words, this paper is relevant for investors across the spectrum of expected financial returns. By taking a more data-driven approach to impact management, and then integrating that approach with financial management, investors of all stripes have an opportunity to increase their impact, their financial performance, or both.

The **efficient frontier of impact and financial performance** (or “efficient impact-financial frontier”) provides a way to consider the financial risk and return and the impact risk and return of a portfolio of investments, together, in an integrated and quantitative way.

It is based on the concept of the efficient frontier of financial risk and return, well known in finance.

Simply put, a portfolio that lies on the efficient frontier offers the greatest possible financial return for a given level of risk and for a given set of investment opportunities. By extension, a portfolio of investments that lies on the “efficient impact-financial frontier” offers the highest level of overall impact, relative to the cumulative risk-adjusted financial return of those investments.

In practice, because the approach relies on predictive analytics to estimate the expected impact and expected financial performance of each investment, the value of the overall approach to an investor is likely to be proportional to the number of investments that investor evaluates and approves per year, and the relative homogeneity or comparability of those deals.

Fiduciary investors can use this approach to further increase their impact, without sacrificing financial performance; or they can use it to demonstrate to stakeholders that they are already offering the greatest impact possible currently available at that level of financial performance. **Non-fiduciary investors** can use the approach flexibly to improve their portfolios’ impact, financial performance, or both.

Although this paper illustrates this approach within a single asset class, we hope that investors will also consider how this might apply to multi-asset class portfolios.

FOUR STEPS TO THE EFFICIENT IMPACT-FINANCIAL FRONTIER

Step 1: Define Expected Impact. Develop a measure of expected impact that can be weighed against the expected financial performance of individual investments.

Step 2: Relate Expected Impact to Expected Financial Performance. Plot past, current, and/ or prospective investments on a graph with expected impact measure on one axis and expected financial performance measure on the other.

Step 3: Define an Impact/Financial Hurdle Rate for Individual Investments. On that graph, draw an impact/ financial hurdle rate to screen out prospective investments that offer less expected impact and/ or less expected financial performance relative to others.

Step 4: Set integrated impact and financial goals for the portfolio as a whole. Set a goal to construct a portfolio that more closely approaches the efficient impact-financial frontier. Take stock of the impact and financial performance of the current portfolio, using the metrics developed in steps 1-3. Set integrated goals for improving the portfolio’s impact, financial performance, or both.

¹ By ‘risk-adjusted impact,’ we mean the material effects (‘Who’, ‘What’ and ‘How Much’) and ‘Contribution’ we expect, having taken into account the risk we’re taking. This is also our expected impact.

THE EFFICIENT FRONTIER

Step 1: Define Expected Impact

The first step is to develop an investment-level measure of expected impact that can be weighed against expected financial performance.

This could take the form of a numerical impact index or scoring/rating system; a social return on investment (SROI) calculation; or something else entirely. Investors can get creative in crafting a measure of expected impact that suits their mission and the resources available for impact management efforts.

The only requirement is that the organization

must have, or be able to obtain, the necessary information to characterize most or all of its current investments and prospective future investments using this measure of expected impact. This information does not need to be perfect – it will inevitably have gaps or errors – but it must be complete and accurate enough that the investment team feels confident using it to inform decisions about what investments to make. This is a process in which the perfect is the enemy of the good, and the best course is to proceed with something workable and practical, and improve it over time.

ROOT CAPITAL ILLUSTRATION

Over the last two years, Root Capital has implemented a tool called the ‘**expected impact rating**’, which is a weighted index of impact indicators collected on each borrower. The purpose here is not to advocate for impact ratings in general or for Root Capital’s rating in particular. Instead, it is to describe one tool that has allowed Root Capital to integrate impact into investment decision-making.

Root Capital developed their Expected Impact Rating in order to move beyond screening and start actively prioritizing loans based on their relative degrees of positive impact. To be considered for a loan, the business has to **not** damage human or environmental health **and** show signs of positive impact on farmers, workers, or the environment. Therefore the first step is to apply a negative screen. Wherever possible, Root Capital prefers to engage with an enterprise to improve on problematic practices rather than to disengage. They also apply a simple positive screen – is there reason to believe this business demonstrates some of the impacts described below?

Businesses that pass the negative and positive screens are then rated on the ten-point Expected impact Rating, with the indicators and weights shown in **Figure 3** overleaf. The scoring system was developed with the following goals in mind:

- **“Investor’s Contribution”** is weighted more heavily than the other dimensions of impact because Root Capital aims to subsidize only those loans that would not happen in a commercial capital market, and because it has already screened the borrower enterprises for the expected social and environmental impact.
- **Depth (“How Much”)** is weighted more than **“Who”** because, while Root Capital looks to work with businesses located in areas where people and planet are underserved, priority is given to businesses that are most significantly addressing the need.
- **People and planet (“Who”)** are given equal weighting, because they are regarded as equally important to Root Capital’s mission.
- Up to half a point is available for **scale (“How Much”)** because, all other things being equal, reaching more people is better.
- Although not part of the scoring system, Root Capital only lends to businesses with sufficient evidence that the impact will most likely occur as expected (**“Risk”**).

All of these choices reflect value judgments specific to Root Capital’s values and intentions and are provided here only as an example. It is also important to note that the tool is not used to measure actual impact **ex-post** – hence the term ‘**expected** impact.’ The indicators in the Rating are proxies for the type of impact sought, and some are better proxies than others. The impact indicators and weights that comprise the expected rating are described in [“Root Capital’s Expected Impact Rating”](#).

While Root Capital has its own language and framework for describing its impact goals, the five dimensions of impact are observable within their approach. This illustrates the notion of ‘shared fundamentals’ that organisations involved in the Impact Management Project have agreed on.

Figure 3: Root Capital's Expected Impact Rating considers the five dimensions of impact

For the same purpose, with similar collateral, in the same currency, and for a rate and fee that is not more than 800 basis points greater than Root Capital's.

Five dimensions of Impact	Root Capital Expected Impact Rating Components		Source of Data	Points (10 in total)		
What 	Livelihoods (income & gender) Environment & climate		Enterprise records; if enterprise is certified (e.g. organic or Fair Trade), records of certification audit; loan officer discussion with enterprise managers; spot checks of enterprise operations and discussions with affiliated farmers and employees; results of impact studies, if available.	Up to 2.0		
	How Much 	Depth of effect Livelihoods (max 1.0 point; 0.25 points each): <ul style="list-style-type: none"> • Price 10%+ above local market prices paid to farmers • Agronomic extension for 50%+ farmers • Income diversification for 25%+ farmers • Loans to 25%+ farmers • Community services to 25%+ farmers • Higher (10%+) wages & benefits to employees • 30% or more participation by women as producers and/or employees; OR women-led and 20% or more participation by women Environment & Climate (max 1.0 point): <ul style="list-style-type: none"> • Environmental certification (0.5 pts) • Climate change mitigation / adaptation (0.25 pts each) <ul style="list-style-type: none"> • Farmers employ diversified agroforestry methods • Farmers raise wild harvest tree crops • A/reforestation activities (100 trees / year) • Low-emissions technology • Weather/crop early warning system • Other mitigation/adaptation activities 			Enterprise records	Up to 0.5
		Scale of effect Number of farmers and employees (max 0.5 pts): <ul style="list-style-type: none"> • More than 1500 (0.5 pts) • Between 500 and 1500 (0.25 pts) • Less than 500 (zero pts) 				
Duration	Not currently taken into account					
Who 	Poverty Level (up to 0.5 pts) <ul style="list-style-type: none"> • <\$2.50/person/day (0.5 pts) • \$2.50 to \$4/person/day (0.25 pts) OR • >\$4/person/day (0 pts) Environmental Vulnerability (up to 0.5 pts, 0.25 pts each) Location of enterprise and farmers vis-à-vis: <ul style="list-style-type: none"> • Biodiversity hotspots • Soil degradation • Water scarcity • Climate change risk 		Progress out of Poverty Index databases 3rd party, publicly-available evaluations of environmental degradation	Up to 1.0		
Contribution 	Enterprise contribution	Prices premiums paid to farmers and wage premiums paid to employees are relative to an estimated best alternative option for those farmers and employees, if not for the investee.	(Included in "How Much")			
	Investor contribution	Flexible capital / additionality rating (see Figure 4): <ul style="list-style-type: none"> • 6.5 points: Loans which a borrower likely would not have obtained from any other lender² • 3.0 points: Loans which a borrower likely could have obtained from a subsidized lender² • Zero points: Loans which a borrower likely could have obtained from a commercial lender² 	Loan officer assessment	Up to 6.5		
Risk 	Always low	Root Capital's approach has relatively low impact risk because they only lend to enterprises that they have reason to believe will deliver the expected impact and, if they don't, Root Capital can decline to renew their loan the following year.				

²For the same purpose, with similar collateral, in the same currency, and for a rate and fee that is not more than 800 basis points greater than Root Capital's.

THE EFFICIENT FRONTIER

Figure 4: Investor Contribution: Distribution of Expected Impact Ratings in Root Capital's Portfolio, 2016



Step 2: Relate Expected Impact to Expected Financial Performance

The next step is to plot past or existing investments on a graph with the expected impact measure on one axis and an expected financial performance measure on the other. We assume that investors already have metrics of expected

financial performance that fit their asset class and investment strategy. For some investors, this might take the form of a risk-adjusted financial return calculation. For others, this might take the form of net subsidy required for the investment.

ROOT CAPITAL ILLUSTRATION

For example, Root Capital pursues a cross-subsidization strategy in which profitable loans cross-subsidize unprofitable ones. The expected contribution margin is used as their measure of financial performance and they are willing to consider loans that have negative as well as positive expected contribution margins.

Root Capital analyzed the relationships between the expected financial return of their loans and the various components of their expected impact rating - see Figure 5 overleaf. This

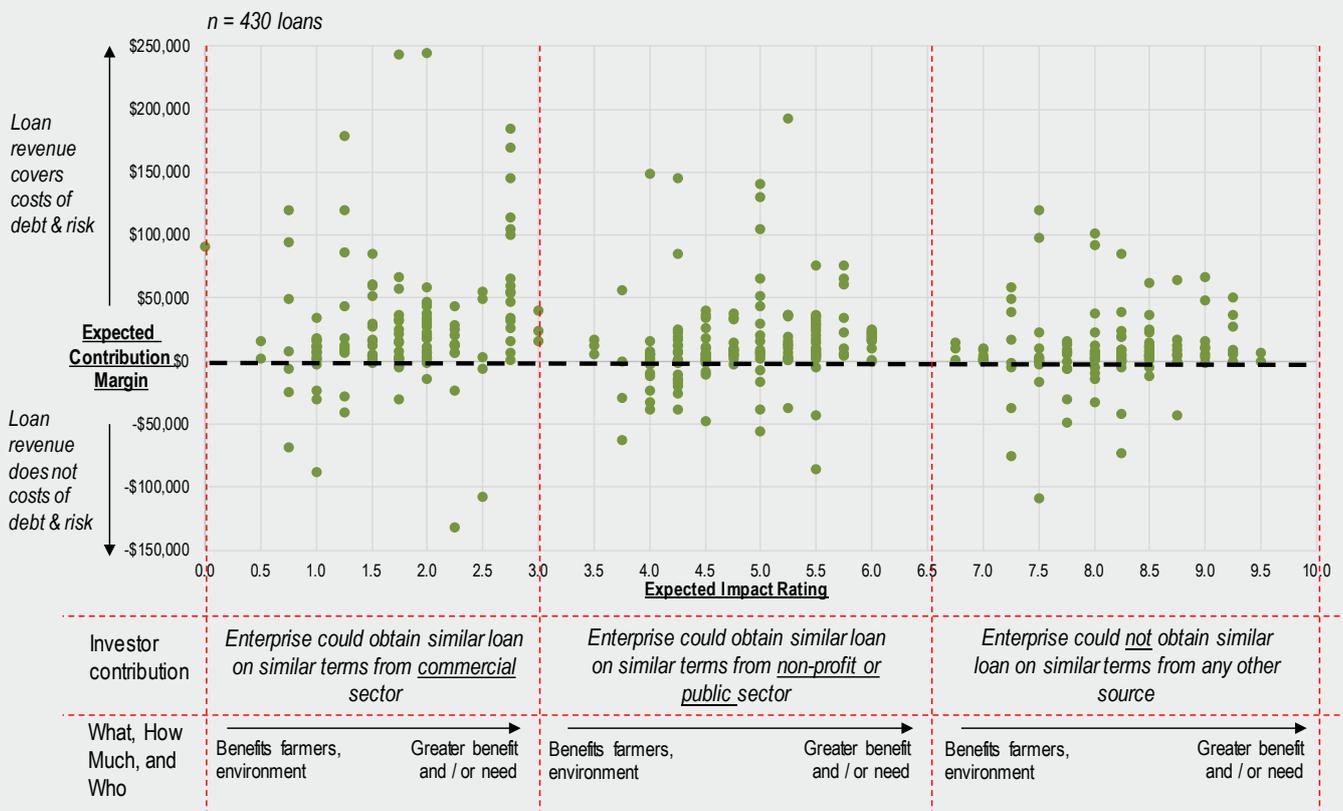
analysis showed that, for them, there are trade-offs between financial return and some types of impact but not others. On average, loans with higher levels of **investor's contribution** and loans to enterprises that serve relatively poorer communities (**who**) require a larger subsidy. Loans to businesses that reach more farmers and are doing more to help them improve their incomes or adapt to climate change (**how much**) tend to require a smaller subsidy or to generate a profit. See "[The Relationships between Expected Impact and Expected Return](#)" for more detail.

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Figure 5: Expected Impact and Expected Risk-Adjusted Financial Return of Loans in Root Capital's Portfolio

For the purposes of making go/ no-go decisions on individual loans, Root Capital uses contribution margin to measure financial return, which consists of expected loan revenue minus the cost of debt and the cost of risk for that loan. It does not include operational expenses (e.g., underwriting and monitoring costs or overhead). Hence, loans whose contribution margin is less than their average operational cost per loan of approximately \$25k are not profitable for Root Capital. In other words, this graph creates a visual impression of overall profitability that is not representative of the reality of lending to small agricultural businesses.

Note that this expected contribution margin calculation is based on a new risk rating system that did not exist when these loans were first underwritten – hence the presence of loans in the lower left.



What is true for Root Capital may not be true for others. The relationships between impact and financial performance are likely to vary widely across geographies, asset classes, investment strategies, and the particular dimensions of impact in question. The aim here is to illustrate how integrated data on expected impact and expected financial performance can address

commonly asked questions about whether there are tradeoffs between expected returns and specific types of expected impact. The Impact Management Project would like to advocate that other investors undertake similar analysis of the relationships between impact and return in their own portfolios, and share the results in order to build a collective evidence-base.

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Step 3: Define an Impact/Financial Hurdle Rate for Individual Investments

Using a graph such as Figure 5 on page 10, investors can determine the level of risk-adjusted return that they might expect for a given level of expected impact. That information in turn improves their ability to evaluate individual investments. The impact/financial hurdle rate codifies these expectations into a threshold level of expected impact that would warrant making a specific investment, given the expected risk-adjusted financial return of that investment.

Investors that have both impact and financial goals can develop their own impact/financial hurdle rate to more consistently and

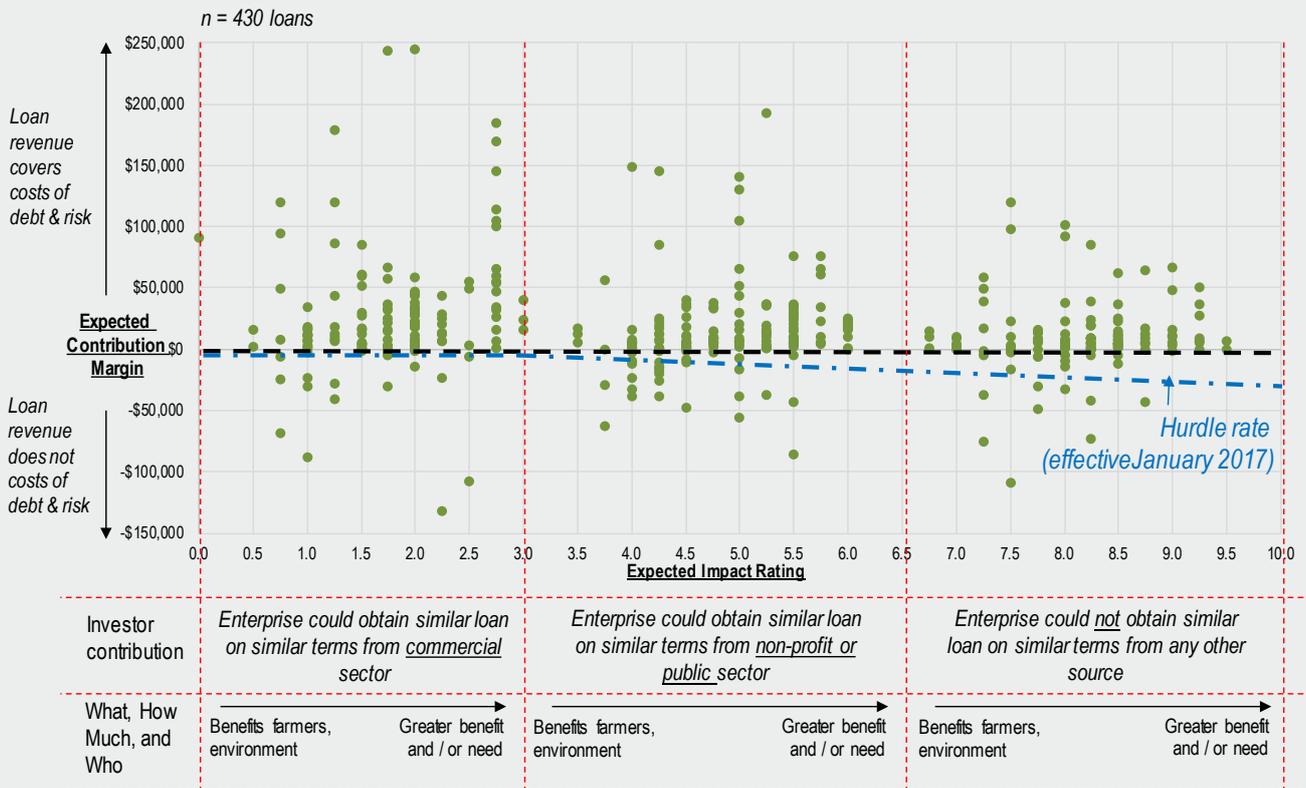
systematically select investments that are most likely to meet those goals, and to screen out investments that offer less expected impact and/or lower risk-adjusted financial return relative to other investment opportunities.

It only becomes obvious which deals are 'bad' and which are 'good' once an investor has reliable data on expected impact, reliable data on expected financial performance, and puts them together.

ROOT CAPITAL ILLUSTRATION

Root Capital used data on the impact and financial performance of their 2016 portfolio to set the following impact/financial hurdle rate, effective January 2017, shown in blue on the graph below.

Figure 6: Root Capital's Impact/Financial Hurdle Rate



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In practice, this means that in 2017 Root Capital is declining to underwrite loans that fall below the blue dotted line, and seeking to replace them with other loans that fall above the line.

It may seem obvious to the reader, but it only becomes obvious which deals are 'bad' and which are 'good' once an investor has reliable data on expected impact, reliable data on expected financial performance, and puts them together.

On the left, the hurdle rate is set at the contribution margin line. To the right the hurdle rate decreases, as Root Capital is willing to consider incurring progressively greater expected losses on loans that have greater

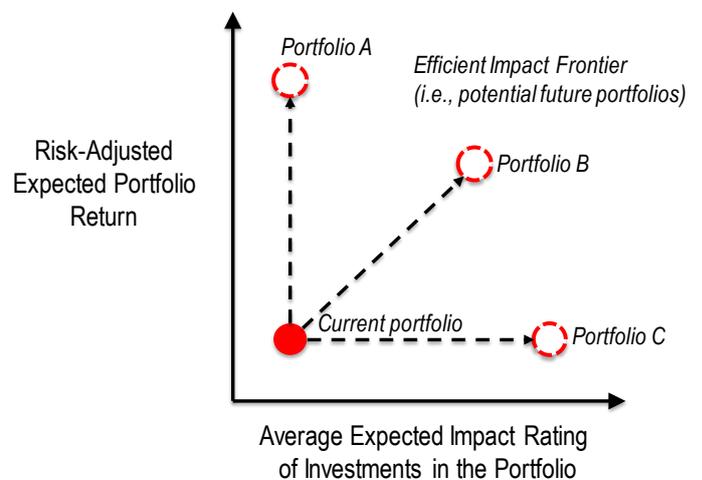
expected impact ratings – contingent on the availability of grant funding and the limits of their risk appetite. Moreover, a negative contribution margin is only accepted for loans that no-one else would do and that offer significant positive expected impacts on farmers and on the environment.

The hurdle rate can be shifted in response to changing market conditions. If limited funding is available, for instance, the hurdle rate is moved upward to reserve scarce philanthropic funding for loans with a higher expected impact rating. If more funding becomes available, the hurdle rate can be shifted downward to enable a wider variety of loans to be pursued.

Step 4: Set Integrated Impact and Financial Goals for the Portfolio as a Whole

The last step is to translate the performance of individual investments into the performance of the portfolio as a whole. Investors that complete steps 1-3 will be in a position to transition a portion of capital away from investments that offer relatively lower expected impact and / or financial performance, and redeploy that capital towards other, more attractive investments. A chart such as the one in Figure 7 can help investors to set goals for how much they can improve the impact and financial performance of their portfolio as a whole through this process. This chart, like those presented in previous sections, has an impact measure on the horizontal axis, and a financial measure on the vertical axis. However, each point on this chart represents a portfolio of investments rather than an individual investment, and the measures on each axis have been adapted accordingly.

Figure 7: Illustrative Efficient Impact-Financial Frontier



THE EFFICIENT FRONTIER

Consider an investor that is ready to begin transitioning out of investments that she can now identify as being lower-impact or lower-return than others available to her. That investor can reallocate capital to those investment opportunities that offer the highest possible expected financial performance while maintaining the portfolio's current level of expected impact, and thereby construct a portfolio such as Portfolio A in Figure 7. She can reallocate capital to those investment opportunities that offer the greatest expected impact ratings while maintaining the portfolio's current level of expected financial performance, constructing Portfolio C. Or she can reallocate capital to construct a portfolio that offers a combination of increased expected impact and increased expected financial performance, such as Portfolio B.

In each case, starting from the current, suboptimal portfolio, the investor can simultaneously increase the expected impact and the expected return of her portfolio. Once she reaches a portfolio that lies on the efficient impact-financial frontier, however, she faces a trade-off: Achieving greater impact would require a reduction in financial performance. And conversely, achieving greater financial return would require a reduction in impact.

The impact/financial hurdle rate plays an important part in this process, because it determines the number and nature of the investments that are screened out of the portfolio. Deal origination (or customer

development) plays an equally important part, because it determines the kinds of investments that are brought into the portfolio. The efficient impact-financial frontier shifts inwards or outwards from the origin depending on the volume of capital to be placed.

Just like the efficient frontier of financial risk and return, the 'efficient impact-financial frontier' is a theoretical frame. **There is no single universal efficient impact-financial frontier. Specific efficient impact-financial frontiers can be defined for any particular investment opportunity set; number or volume of investments to be chosen from that opportunity set; and particular metrics of expected impact and financial performance used to measure those investment opportunities.**

To the extent that an investor constructs a portfolio that she or he has reason to believe offers the greatest possible expected impact relative to its expected financial performance, given the available investment opportunities – that portfolio likely approaches or reaches the relevant efficient impact-financial frontier.

In practice, it is not always necessary to chart the whole frontier of potential portfolios (i.e. the whole black curve in Figure 7). It is often enough to target a single portfolio (i.e. a single point along that line), or even a direction of movement (i.e. one of the arrows pointing away from the current portfolio). All three approaches would likely help an investor improve on current performance.

ROOT CAPITAL ILLUSTRATION

To create its 'efficient impact-financial frontier' chart, Root Capital prioritized **investor contribution** as their primary portfolio-level indicator of impact – specifically, the number and percentage of loans in the portfolio that they have reason to believe that no-one would have done if not for Root Capital. They found

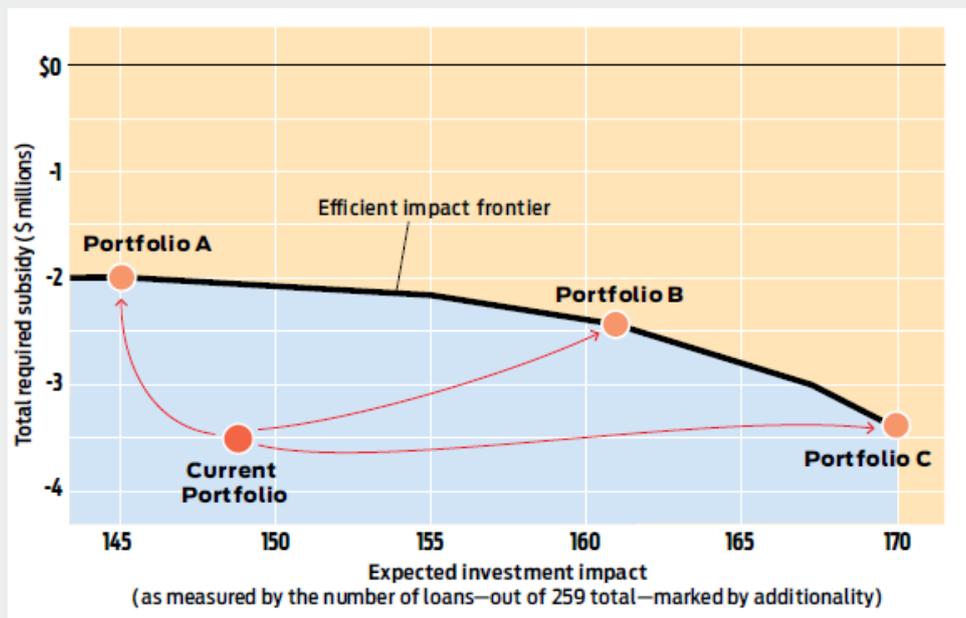
that the efficient impact-financial frontier assumes essentially the same shape when other impact metrics are used. The portfolio-level measure of financial performance was the sum of the expected net profits or losses of all of the loans in the portfolio. For Root Capital, this is a negative number; it takes the form of required grant funding.

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Figure 8: Root Capital's Efficient Impact-Financial Frontier, 2015³

In practice, it was not possible to estimate the full efficient impact-financial frontier curve, because of the lack of necessary information about the expected impact of all possible future loans. At first, Root Capital simply declared the desired direction of movement in the efficient impact-financial frontier chart:

"Up first, and then to the right." The portfolio management processes are now being revised to be able to set a goal of a target portfolio (e.g. Portfolio A, B, or C in the chart above) for the next reporting period, with regards to both impact and financial performance.



³ Graphic courtesy of Stanford Social Innovation Review. Simulation analysis based on sample of 259 loans that were in Root Capital's portfolio in 2015.

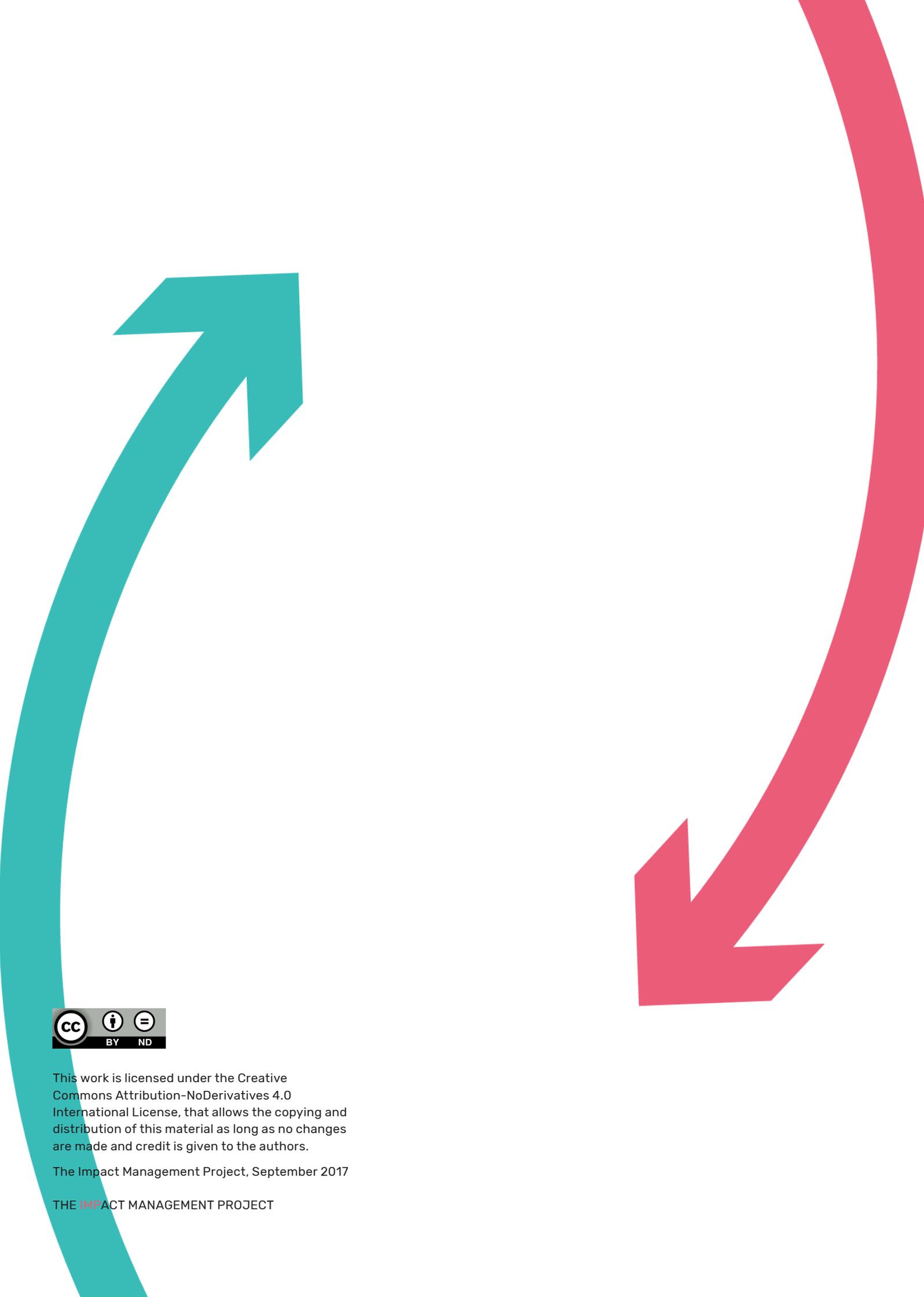
Conclusion

This approach has enabled Root Capital to begin a multi-year process of quantitatively optimizing a single asset-class portfolio for impact risk and return alongside financial risk and return, in an integrated and holistic way.

At the same time, Root Capital has found that high-quality impact and financial data and well-designed tools do not obviate the need for human judgement. They simply provide better inputs for that judgement. Nor do they obviate the need to articulate intentions and impact goals. They simply provide a more precise and effective way of expressing those intentions through investments, and achieving our impact goals.

By adopting and adapting concepts like the efficient impact-financial frontier, investors can make better-informed decisions about individual investments, set more comprehensive goals for their portfolio as a whole, and collaborate more effectively with donors, investors and governments. These tools provide investors constructing a portfolio of individual investments within an asset class the insight that they need to set—and achieve—integrated financial and impact goals.

We would welcome other investors to try the four step approach laid out here and share their feedback and findings.



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THE **IMPACT** MANAGEMENT PROJECT