The true returns of large-scale holistic landscape restoration (4 Returns)

Final report

26-8-2020

Status, disclaimer & perspective use and next steps

This report should be seen as a first step in the development towards a generic model for calculating the monetary value of large scale landscape restoration with Commonland's 4 Returns approach. In this report, a preliminary developed method has been applied to calculate the monetary value of the Altiplano Esteporia landscape in Spain. Readers of this report should be aware that the outcomes for the Spanish landscape are very dependent on the specific landscape.

In this first step only the monetizable value of 4 Returns landscape restoration, based on expected cash flows for key stakeholders in the landscape, has been taken into account. However, some natural, social or inspirational returns are not expected to generate cash flows, are difficult to turn into monetizable cash flows or ways to turn these returns into tangible cash flows still have to be developed. But the possible inability or difficulty to monetize does not make these contributions any less significant and these returns may well proof to be the most valuable in the long run. Therefore, for a good overview of the total value of landscape restoration the value of these returns should also be taken into account.

This means this is not an end, but a beginning. We will continue to evolve this 4 Returns valuation method with partners, farmers and leading experts around the world. The aim is to further broaden the scope of the valuation method and offer a full picture of the benefits of landscape restoration based on the total value of natural, social, inspirational and financial returns.

We invite governments, investors, businesses, farmers, philanthropists, NGOs and other experts around the world to join us and our partners to further develop the 4 Returns framework and the related valuation tooling to restore the vast degraded areas.

Commonland & KPMG

Executive summary (1/3)

Commonland has asked KPMG to quantify the true returns of the landscape restoration in Spain

Commonland is an impact organization realizing large-scale ecosystem restoration projects by actively involving investors, companies and entrepreneurs in long-term restoration partnerships with farmers and land-users.

Commonland has asked KPMG quantify the value of the 4 Returns, the true returns for all stakeholders in the landscape, of large-scale landscape restorations, based on their activities in the Altiplano Esteporia landscape in Spain covering 1 mln. hectares.

Commonland conducts four key (4 Returns) interventions in Spain, covering 8,5% of the 1 mln. hectares of the landscape

- Shift **culture and behavio**r towards long term thinking and action, by inspiring communities with purpose and knowledge
- Create a **local business** ecosystem, that capitalizes on regenerative agriculture
- Shift **farmers** and other land users towards regenerative agriculture practices: **60.000 hectares**
- Restore and enhance conservation of key **natural zones**, by replanting vegetation and carrying out ecological corrections: **25.000 hectares**

Nine key impacts were identified for key stakeholders and included as discounted cash flows (NPV) or risk reduction impacts.

A discount rate of 10% has been applied.

Outcomes are the delta between business as usual (BaU) and Commonland's intervention.

Return	Impact	Description	Included as
	Financial return	Direct financial returns, including increased earnings of farmers and additional local earnings (traders, tourism)	Discounted cash flow
	Sense of purpose	Inspiration and education activities around landscape restoration give local communities a sense of purpose	Risk reduction (-0,5% discount rate)
	Job creation	New local jobs and therefore income for the people	Discounted cash flow
	Income tax (jobs)	Income tax generated through newly created jobs, and avoided unemployment costs for the government	Discounted cash flow
	Business tax	Additional local tax arising from more business activities	Discounted cash flow
	Water retention	Regenerative agriculture and restoration of the natural zone improve water retention and local water availability	Risk reduction (-0,5% discount rate)
	Carbon sequestration	Increased carbon sequestration, monetized based on a voluntary carbon market	Discounted cash flow
	Biodiversity	Increased crop yield for surrounding farmers from pollination	Discounted cash flow
	Erosion prevention	Regenerative agriculture practices and natural zone restoration prevent land erosion, lowering risk	Risk reduction (-0,5% discount rate)

Executive summary (2/3)

Three distinct scenarios were created to illustrate the different outcomes.

Depending on the scenario, a true return of USD 127 mln. to 487 mln. was calculated.

Scenario:	Conservative	Vision	Upside
Explanation of the scenario:	Conservative assumptions and mechanisms	Commonland's vision on how the future looks like	Vision scenario with more favorable assumptions on landscape restoration
True returns (in USD mln. NPV):	127	415	487
Land value monetization (% land owned by private investors, sold after 20 years)	N/A	10%	10%
Carbon monetization (sold through voluntary carbon market)	N/A	USD 6/tonne CO_2	USD 8/tonne CO_2
Price premium for regenerative products (decreases from year 1 to year 20)	+130% to +20%	+130% to +50%	+130% to +80%
Crop yield decrease in BaU case (due to climate change)	-25% over 20 years	-100% over 15 years	-100% over 15 years
Crop yield decrease in intervention case (due to climate change)	-20% over 20 years	-20% over 20 years	-20% over 20 years
Crop yield increase in intervention case (due to improved soil & pollination[1])	+18% over 5 years	+18% over 5 years	+22% over 5 years
Agricultural subsidies in favor of	BaU case	Intervention case	Intervention case
Labor cost increase for BaU case	N/A	+20% over 20 years	+20% over 20 years

Four investors were identified, who could all benefit from investing in the landscape

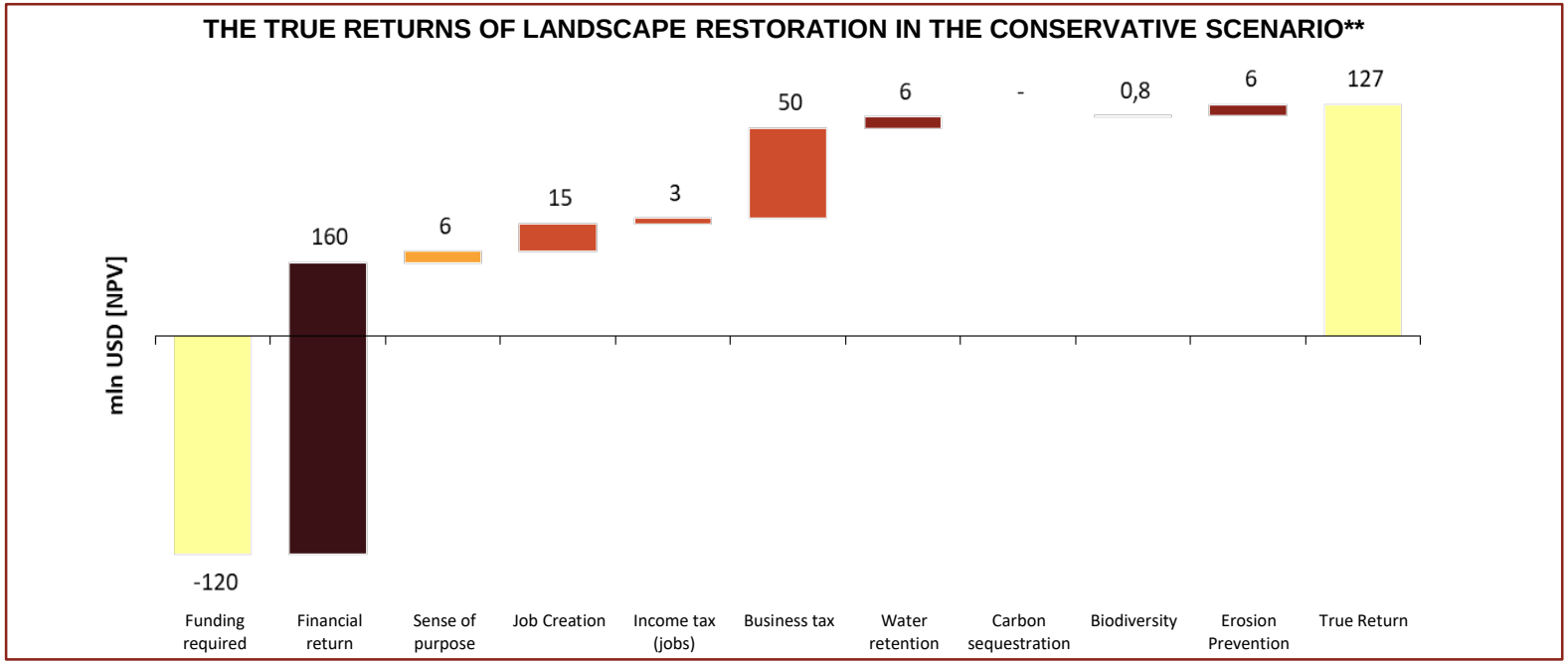
For each investor, the true returns (in NPV) and Internal Rate of Return (in %) were determined.

Funder group:	Governments			Private investors			Farmers			Philanthropists
Funding provided (% of total)	45%			10%			40%			5%
Scenario:	Conser-vative	Vision	Upside	Conser-vative	Vision	Upside	Conser-vative	Vision	Upside	All three scenarios
True returns (USD mln. NPV)	21	96	114	6	18	22	77	275	320	N/A
Internal Rate of Return (IRR)[2]	NM.[3]	NM.[3]	NM.[3]	6%[4]	6%[4]	19%[4]	NM.[3]	NM.[3]	NM.[3]	N/A
Key benefits	• Restoration of landscapes (water retention, soil quality) • Economic growth (new jobs & businesses, taxes)			• 2,5% interest			• More stable income • Higher revenues, from yield and price premium of regenerative crops			• Restoration of landscapes • Carbon sequestration

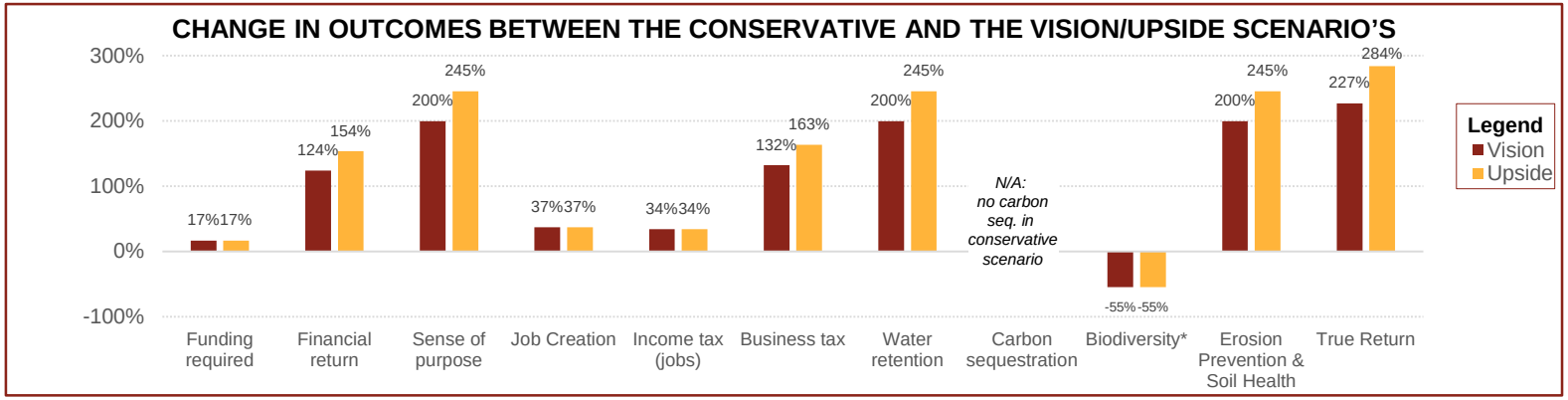
1) Pollination increasing crop yield has been used as proxy for the return of biodiversity.
2) IRRs are computed based on non-discounted cash flows and only include financial returns, other additional benefits included in the report are not considered in the IRRs.
3) IRR's are not meaningful / cannot be calculated.
4) IRR's are calculated, however because of the spread in financing needed and spread of returns, they should be interpreted together with other information such as NPV results.

Executive summary (3/3)

The true returns of landscape restoration in the Conservative scenario is USD 127 mln. and requires USD 120 mln. funding



Compared to the conservative scenario, the impacts in the two other scenario's change with -55% to +284%.



*Financial biodiversity benefits for surrounding farmers are not applicable anymore from year 15 onwards as it is assumed they are out of business due to unproductive soil. Therefore, the change in outcomes are negative
** Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in this value bridge.

Contents

KPMG

Introduction and setup of the project

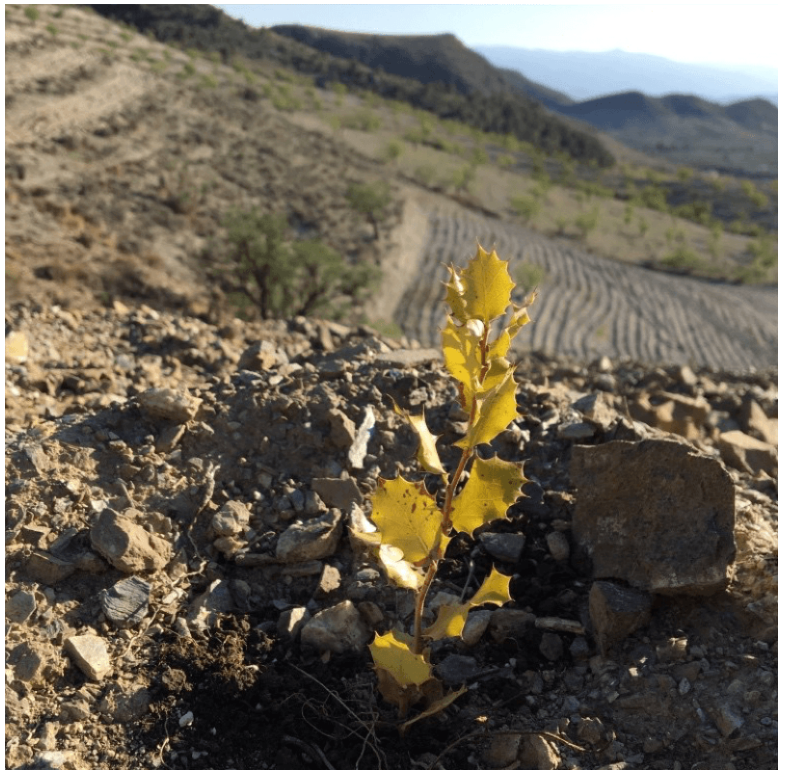
Commonland has asked KPMG to quantify the true returns of holistic large-scale landscape restorations

Global population is increasing from **7,7 bln. in 2019 to 9,7 bln. in 2050**[1]. Although technologies are developed to increase the food production per hectare, needed to feed the growing population, the amount of arable land is rapidly declining due to unsustainable management practices. This has resulted in approximately **20% of global cropland showing persistent declining trends in productivity** from 1998 to 2013[2]**.** Which if this trend continues could lead to a **worldwide collapse of ecosystems, severe biodiversity loss, food insecurity, political and social instability**[3].

Commonland is an impact organization realizing **large-scale ecosystem restoration** projects by actively involving investors, companies and entrepreneurs in long-term restoration partnerships with farmers and land-users. Long-term commitment is important as it takes a minimum of **20 years** to restore a landscape. The holistic restoration approach combines and connects **natural** and **economic landscape zones** through a **combined zone** and delivers **4 returns** (financial capital, inspiration, social capital and natural capital).

The concept has proven to be successful and Commonland is already actively restoring landscapes in four different countries. In order to scale up, a **change in mind-set and funding** is needed.

Commonland has asked KPMG to **quantify the 4 Returns ('true returns' for all stakeholders in the landscape), of large-scale landscape restorations**, based on data from the Altiplano Esteporia landscape in Spain.



Sources:
1) United Nations (2019): World Population Prospects 2019
2) UNCCD (2017): Global Land Outlook
3) European Commission (2019): EU Science Hub - Desertification and drought

Commonland's holistic large-scale landscape restorations turns 4 Losses into 4 Returns

Land degradation leads to 4 Losses:

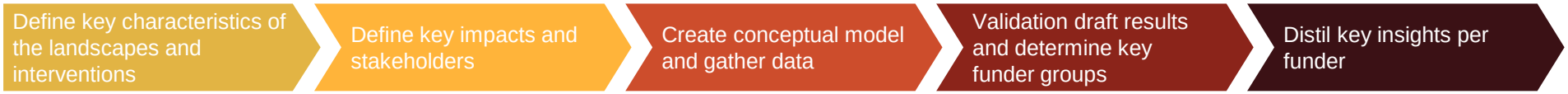
- **Loss of purpose or hope**
- **Loss of employment and security**
- **Loss in biodiversity, soil & water**
- **Loss of economic activity**

Land restoration leads to 4 Returns:

- **Return of inspiration**
- **Return of social capital**
- **Return of natural capital**
- **Return of financial capital**

Source: 4 returns. RSM-Erasmus Univ. IUCN CEM 2015

True returns of large landscape restoration were determined by defining impacts, interventions and development of a model



Phase 1

To understand and pinpoint the changes large-scale landscape restoration projects create, the overarching characteristics of the landscapes in which Commonland operates, and the key interventions carried out in those landscapes were identified and validated.

Phase 2

For the selected interventions, the most important impacts were identified.

Key stakeholders which are impacted by the interventions were identified.

Phase 3

A conceptual model of the large-scale landscape restoration was created, and the required data identified.

Data was collected through a combination of expert interviews and desk research.

Phase 4

Preliminary results of the working model were validated in multiple meetings with stakeholders, and industry experts from the funder community.

Key funder groups were determined to target based on the draft results.

Phase 5

For each funder group optimal investment distributions and insights were distilled based on the benefits created

Commonland conducts four key interventions in their landscapes

Key intervention	Description
Shift culture and behavior towards long term thinking and action, by inspiring communities with purpose and knowledge	A local landscape restoration partnership is founded which organizes activities for communities in the landscape. The association has the goal of inspiring and activating the local communities resulting in a shared long-term vision, believing their landscape can be restored and thrive over time when working together. This forms the basis for the other interventions to succeed.
Shift farmers and other land users towards regenerative agriculture practices	The association also supports farmers to transition from intense mono-culture which can cause desertification in landscapes, towards regenerative agriculture by providing advice, funding, machinery, workshops, and networking opportunities. Resulting in more regenerative farmers which improves biodiversity, water retention, carbon sequestration, better yields and profits.
Create a local business ecosystem, that capitalizes on regenerative agriculture	Local businesses will be setup in the landscape, which capitalize on the regenerative products (e.g. processing and trading of products). This results in a shift of value capturing from other parts of the world, towards the landscape itself, resulting in a local business ecosystem, creating jobs and additional financial value.
Actively restore and enhance conservation of key natural zones, by replanting vegetation and carrying out ecological corrections	In each landscape degraded natural areas will be restored in a minimum of 20 years. This is done by replanting vegetation, carrying out ecological corrections (e.g. creating ponds and swales), and connecting natural areas by creating corridors between them. This results in a landscape which is more resilient to droughts, flooding and other extreme events.

The true returns of Commonland were calculated based on the Altiplano Esteporia landscape in Spain

Source: Altiplano Estepario, Ambientes semiáridos del sureste andaluz – Junta de Andalucia, 2010

The Altiplano Esteporia landscape is located in the southeastern part of Spain and covers several counties: Altiplano de Granada, Los Vélez and Alto Almanzora, Guadix and Noroeste de Murcia. Together these counties cover almost 1 million hectares and have 250.000 inhabitants.

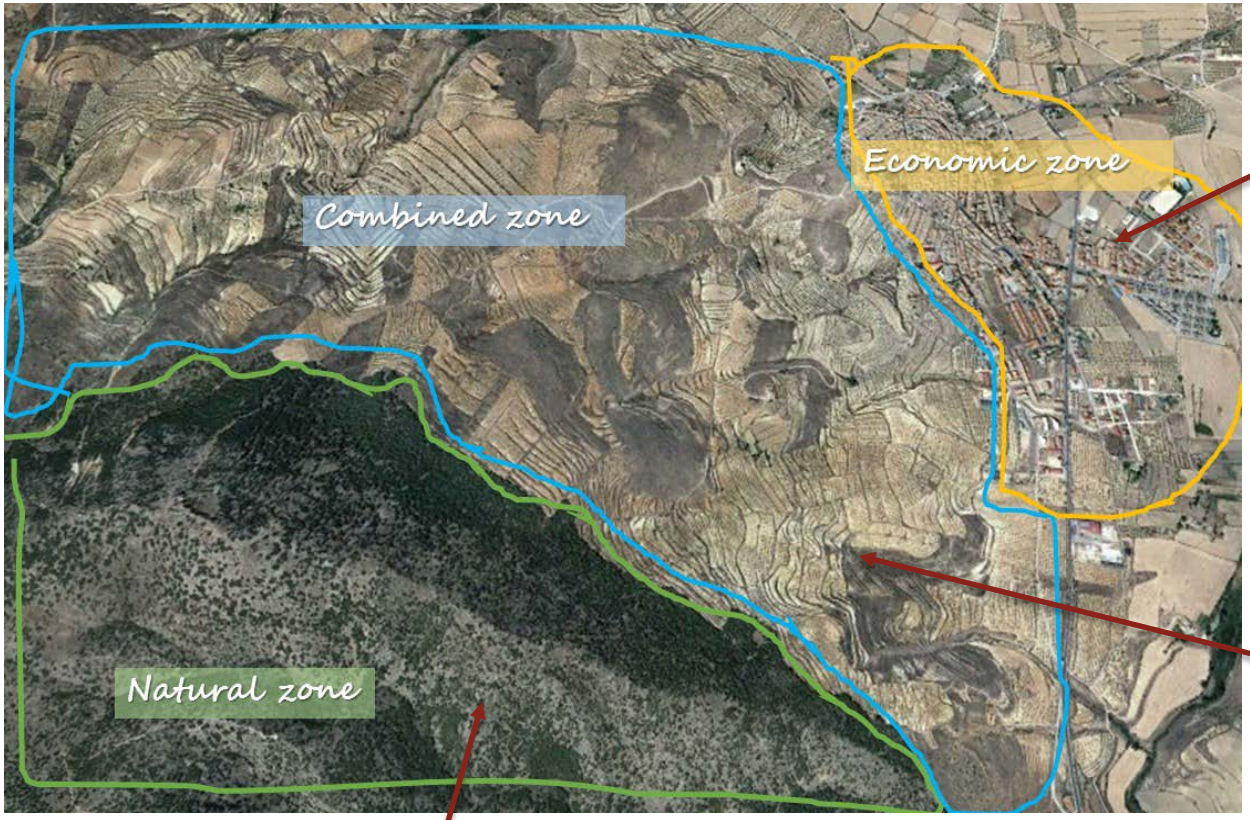
The Altiplano is a deforested and partially semi-arid steppe with rock formations and without trees, historically used for dryland farming (cereals and some vegetables). The landscape has a relatively smooth relief and lies 600-1.200m above sea level characterized with skeletal soils, low in organic matter. The area is of importance for biodiversity with a high floral diversity offering a habitat to steppe-birds and invertebrates. Climate conditions are extreme and as precipitation does not offset evaporation in the area, water is scarce.

The landscape is degrading as a consequence of natural and man-made processes, such as deforestation, depopulation (abandonment, emigration, gradual aging) and intensified land use, resulting in desertification and an increased risk of soil erosion. Together with the extreme weather conditions (low rainfall, outermost temperatures and prolonged frost period), this makes it difficult to regenerate vegetation and halt desertification. These factors cause soil degradation and destruction to exceed soil formation, which could be accelerated by climate change and human activity.

Since the vast Altiplano has many different kinds of soil, it is difficult to determine when agricultural land will become fully depleted. Some soils will not be depleted within the 20 year horizon, whereas for others it will happen within 15, 10, 5 years and for some soils it is already happening[1].

1) Soil depletion has been captured in this report, by decreasing agricultural yields as a proxy.

The Altiplano Esteporia landscape can roughly be divided into three landscape zones which will be restored in a minimum of 20 years



Source: 4 returns. RSM-Erasmus Univ. IUCN CEM 2015

Natural zone

Restoring the ecological foundation, biodiversity, and capturing of carbon by replanting vegetation and carrying out ecological corrections, like creating swales. These natural zones will cross through degraded monoculture landscapes, making them more resilient against droughts, pests, and erosion. Reducing risks and lowering costs for all investors (farmers, governments and private investors) who invest in the long-term restoration of these landscapes. The 20 year ambition is to restore 25.000 ha of natural zone, which is considered throughout this report.

Economic Zone

Delivering high and sustainable economic productivity in an urban zone by developing supply chains in the area, capitalizing on the shift towards regenerative agriculture. Unlocking market demand for regenerative products will allow farmers to generate a higher margin for their products and invest in the restoration of their farms. By creating business cases around regenerative agriculture and landscape restoration the local economy is expected to improve. The ambition for 20 years is 10 active business cases. The current work takes into account a maximum of three business cases (i.e. regenerative almonds, tourism, and carbon monetization).

Combined Zone

Restoring biodiversity and soil, and capturing carbon through regenerative agriculture, delivering sustainable landscapes and products. The combined zone contains 100.000 ha of almond groves and has the largest area in the world for the production of rain-fed organic almonds. Most of the farms suffer from degraded soils, poor water infrastructure and biodiversity loss.
By applying regenerative agriculture practices organic almond farmers can reverse the ecological damage.
The 20 year ambition is 60.000 ha of regenerative agriculture, which is considered throughout this report.

Nine key impacts were identified, converted into either cash flows or risk-reduction, and included in the model

Return	Impact	Description of impacts
	Financial return	**Direct financial returns for all stakeholders,** including increased earnings of regenerative farmers and additional local earnings from cluster companies (traders), and tourism.
	Sense of purpose	Inspiration and education activities around landscape restoration give local communities a sense of purpose, **lowering future risk**.
	Job creation	Newly created companies and regenerative agriculture practices create **new local jobs** and therefore **income for the people.**
	Income tax (jobs)	**Income tax generated** through newly created jobs, and **avoided costs for the government due to decreased unemployment.**
	Business tax	**Additional local tax** arising from more business activities (agriculture and other businesses).
	Water retention	Regenerative agriculture practices in the combined zone and restoration of the natural zone improve **water retention** and local **water availability.**
	Carbon sequestration	Regenerative agriculture and natural zone restoration practices result in **increased carbon sequestration,** which **can be monetized if a voluntary carbon market exists.**
	Biodiversity	Regenerative agriculture practices and natural zone restoration improve biodiversity, increasing pollination which increases crop yield **for surrounding conventional farmers** (the latter has been used as proxy for return of biodiversity).
	Erosion prevention	Regenerative agriculture practices and natural zone restoration prevent land erosion, **lowering risk**.

The overarching stakeholders and their physical and monetary interactions were mapped

Commonland operates in several landscapes across the world. The framework on the right illustrates the overarching structure of how the key stakeholders in the landscape operate and interact.

Funders: can fund Commonland directly, the LRP, or trading company. Financial returns to investors can only be obtained from trading companies through interest on the commodity trading credit.

Governments: obtain benefits/returns through taxes and jobs created in the landscape from the intervention.

Commonland: set up and funds the LRP and one trading company and assumes more will follow.

Landscape restoration partnership (LRP): creates culture shift towards long-term landscape restoration, mobilizes farmers to move towards regenerative agriculture through advice and funding, organizes and funds natural zone restoration, and supports creation of new businesses.

Trading company: pays farmers price premium for regenerative products, sells to customers and provides financial returns to funders.

Farmers: produce regenerative products, obtain income from the trading company and improve natural zone. Creates jobs, regenerative products and pays taxes to the government.

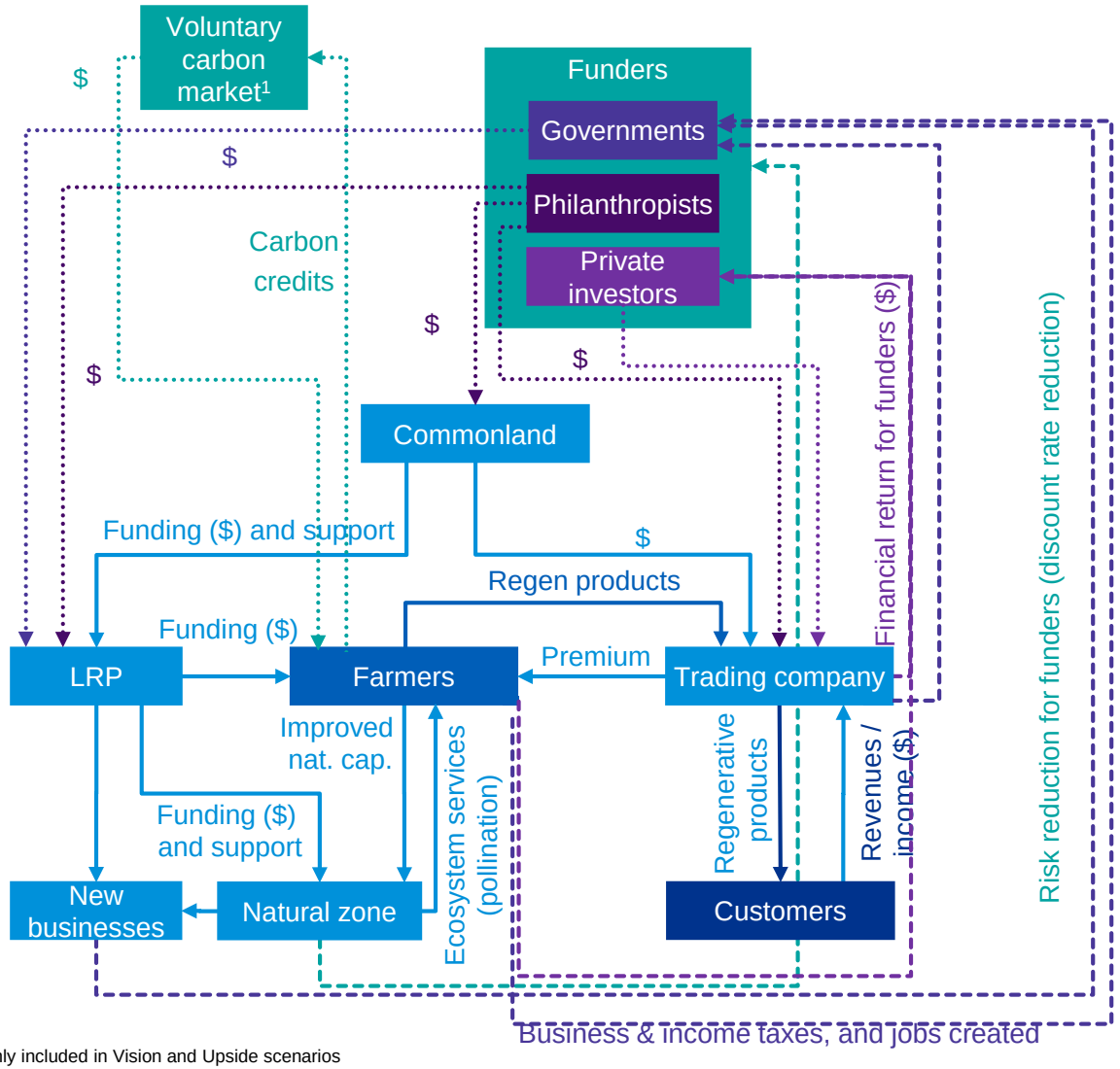
New businesses: new businesses other than trading companies e.g. tourism, education, green infrastructure and businesses linked to regenerative agriculture. These businesses are supported and sometimes funded by the LRP. Resulting results in more jobs and taxes.

Customers: buy the regenerative products and pay the trading company.

Natural zone: restoration of the natural zone is funded by the association, and results in risk reduction for funders.

Legend
Material/interaction flow
Funding flow from funders
Return flow for funders

Colors of the arrows indicate to which group the interaction flows



1) Voluntary carbon market mechanism only included in Vision and Upside scenarios

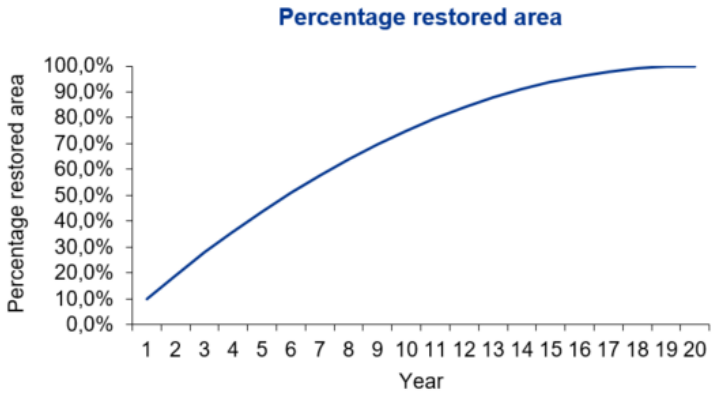
A model was built, which calculates and discounts delta cash flows per stakeholder between business as usual and the intervention

Setup of the model and applied discount rate

- To determine the value of Commonland's intervention, the outcomes in this report are the delta between business as usual (BaU) and the after Commonland's interventions (intervention case).
- The model is based on financial cash flows[1], which are computed for each impact on a year-by-year basis. Cash flows are discounted and inflated resulting in a net present value (NPV).
- A discount rate of 10% has been applied[2] for both BaU and the intervention case.
- Some impacts, which are a result of Commonland's intervention are not included as cash flows in the model. These impacts were included as a reduction of the discount factor, since they result in a risk reduction. In this report a reduction in discount rate between 1% and 2% is assumed. The midpoint of 1,5% of this assumption is taken. This has been done for the impacts below as follows:
    - Sense of purpose (-0,5%)
    - Water retention (-0,5%)
    - Erosion prevention (-0,5%)

Restoration rate

- Restoration of the landscape takes time. The speed of the restoration has an effect on the outcomes of the model. To maximize the benefits of the de-risking impacts, it is more advantageous to restore the majority of the area in an early stage. Thus, the following profile has been assumed for restoring the landscape.



1) Detailed welfare effects are not explicitly included in the model; as a proxy for these factors sense of purpose has been quantified through a de-risking mechanism (i.e. decreasing the discount rate).

We developed three scenarios, to understand how Commonland creates value for its stakeholders

Conservative scenario

- Changes in land value not included
- No carbon monetization
- Price premium for regenerative products decreases from +130% to +20% over 20 years
- Crop yield in BaU decreases by 25% over 20 years, for the intervention case it decreases by 20% over the same period
- Due to improved pollination, crop yield in the intervention case increases over a 5 year period and stabilizes at +18%
- Subsidies are more favorable for BaU case

Results are shown in main body of this report, see page 18-40

For a more detailed description of the scenario, see page 43

Vision scenario

- Changes in land value included (10% of land owned by private investors and sold after 20 years)
- Carbon monetization voluntary market (USD 6/tonne)
- Price premium for regenerative products decreases from +130% to +50% over 20 years
- Crop yield in BaU decreases to 0 after 15 years, for the intervention case it decreases by 20% over 20 years.
- Due to improved pollination, crop yield in the intervention case increases over a 5 year period and stabilizes at +18%.
- Subsidies are more favorable for the intervention case, labor costs in BaU increase by 20% over 20 years.

Results are shown in appendix, see page 45-50

For a more detailed description of the scenario, see page 44

Upside scenario

- Changes in land value included (10% of land owned by private investors and sold after 20 years)
- Carbon monetization voluntary market (USD 8/tonne)
- Price premium for regenerative products decreases from +130% to +80% over 20 years
- Crop yield in BaU decreases to 0 after 15 years, for the intervention case it decreases by 20% over 20 years.
- Due to improved pollination, crop yield in the intervention case increases over a 5 year period and stabilizes at +22%.
- Subsidies are more favorable for the intervention case, labor costs in BaU increase by 20% over 20 years.

Results are shown in appendix, see page 51-56

For a more detailed description of the scenario, see page 44

KPMG

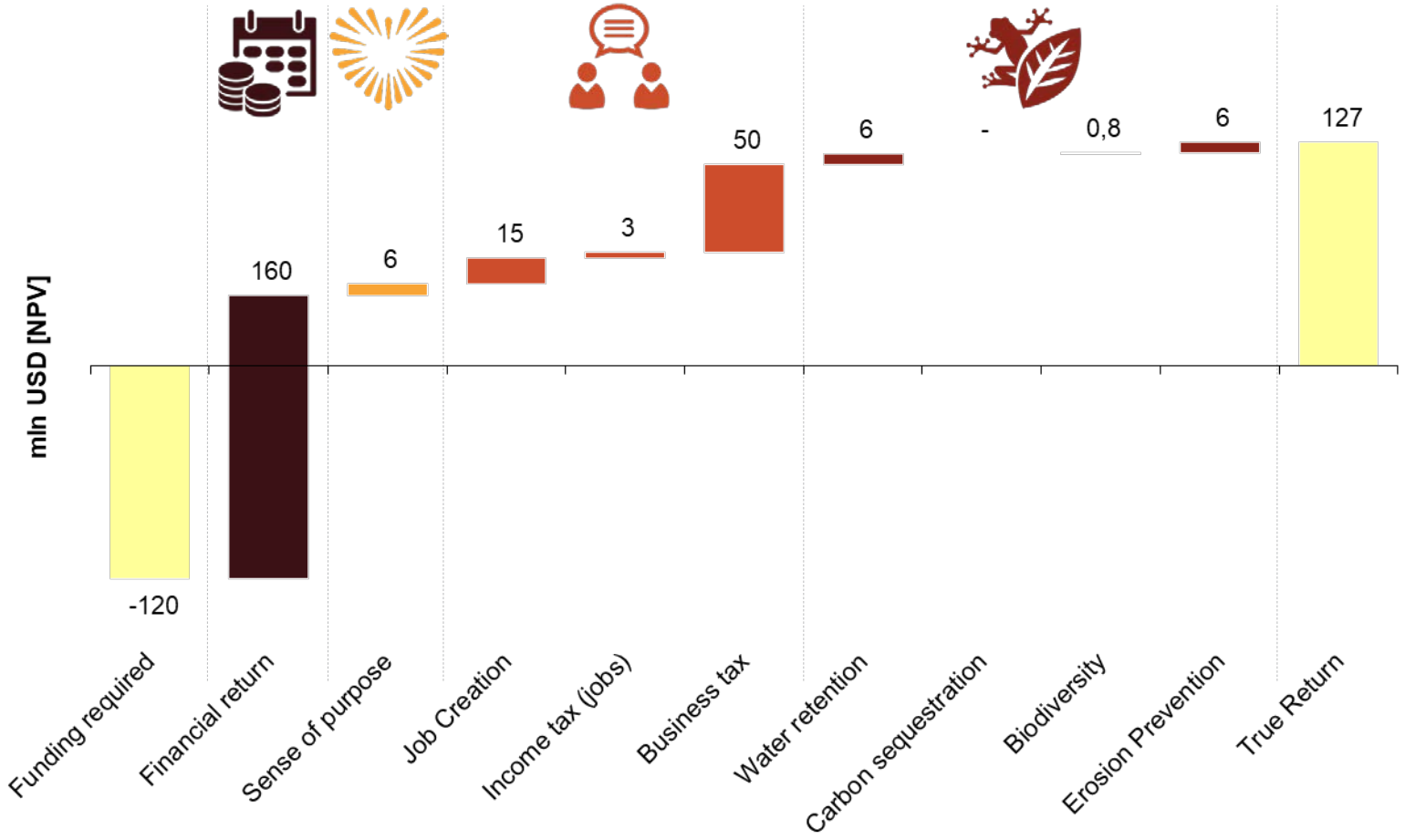
Outcomes of the model and description of each impact in the Conservative scenario

Impacts realized in the restored 85.000 ha of the Altiplano Estepario landscape over 20 years in the Conservative scenario

Impact type	Results over 20 years in the conservative scenario
Carbon sequestered	2,6 mln. tonnes CO_2
Area of regenerative agriculture	60.000 hectares
Natural zones restored	25.000 hectares
Jobs created	165 jobs
Tourism attracted	10.000 people
Increased earnings for farmers	+16,1% (result of change in yield and price premium)
Change in price of key cash crop	+130% to +20% over 20 years (due to premium of regenerative products)
Average change in yield (tonnes/ha) of key cash crop	21,6%
Additional cash crops	+1 (no monoculture anymore)
Expected change in yield over 20 years **in BaU**	25% decrease in yield
Expected change in yield over 20 years **in intervention case**	20% decrease in yield[1]
Change in land value	Not included in this scenario
Land ownership	Agricultural land owned by farmers, natural zones owned by governments

1) Valverdea, et al. (2014). Climate change impacts on rainfed agriculture in the Guadiana river basin (Portugal).

The true returns of landscape restoration in the Conservative scenario is USD 127 mln. and requires USD 120 mln. funding

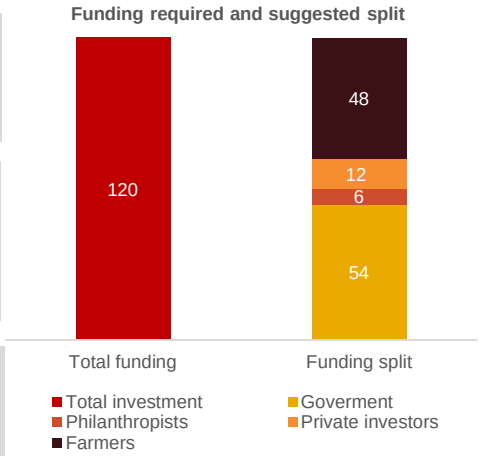


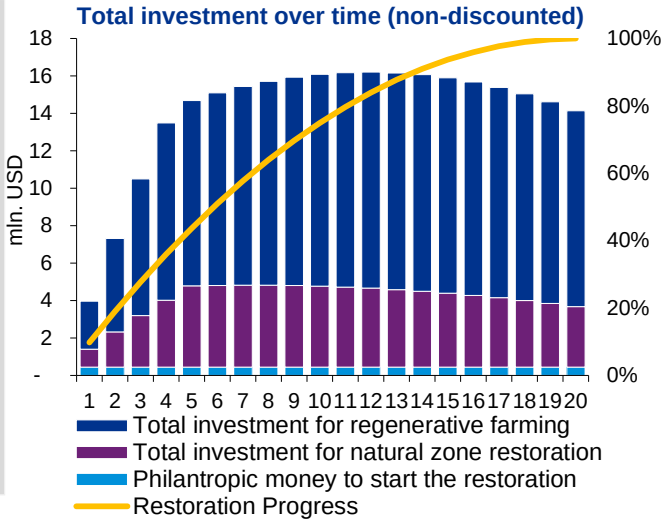
* Based on Altiplano Estepario region (Spain), 20 year timeframe, discount rate of 10% (BaU). Discount rate after interventions varies based on risk reduction from intervention. Numbers are based on current ambitions of Commonland in the region (8,5% of 1 mln hectares is affected).
** Note that the financial return also includes return for the traders, which is not included as a separate stakeholder on the next pages.
*** Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in this value bridge.

Funding required (1/2)

Detailed explanation of the impacts

Impact	Funding required
Explanation	**Total funding** required from the different funders for carrying out the interventions (i.e. regenerative agriculture in combined zone and restoration of natural zone).
Impact relevant for which stakeholders	**Key stakeholders:** funders in the landscape: governments, philanthropists, private investors, farmers.
Discount rate used	In the intervention case: 10%
Key assumptions	Total funding required for the restoration of the landscape consists of the sum of (a) funding needed to kick-start the restoration process (e.g. setting up landscape association), (b) funding needed to shift farmers towards regenerative agriculture and (c) funding needed for natural zone restoration. This is calculated as follows: a) A fixed amount of funding is used every year for activities organized by the landscape association. b) Farmers in the combined zone require funding to actively change their agricultural practices towards regenerative agriculture which requires both Capital Expenditures (CAPEX, e.g. swales and ponds) and OPEX (e.g. planting and/or maintaining vegetation covers). c) Natural zones are restored by planting vegetation and carrying out ecological corrections (e.g. creating swales and ponds) which require CAPEX, after which the natural zones will need maintenance which requires OPEX (e.g. pruning). Continues on the next page…





Funding required (2/2)

Detailed explanation of the impacts

Impact	Funding required
High-level calculation	a) Funding needed to kick-start landscape restoration = [Fixed amount of funding allocated each year for activities in the landscape[1]] + b) Funding needed for regenerative agriculture = [CAPEX required for shifting towards regenerative agriculture (spread over a fixed amount of years for each new plot of land aimed for regenerative agriculture) + delta OPEX for shifting towards regenerative agriculture] + c) Funding needed for restored natural zone = [CAPEX required for natural zone restoration (spread over a fixed amount of years for each new plot of land restored) + delta OPEX for natural zone restoration]

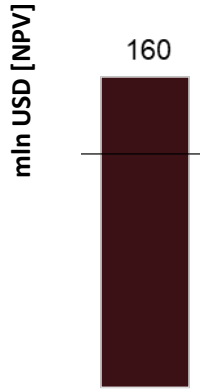
For model inputs, please see Appendix page 57-60

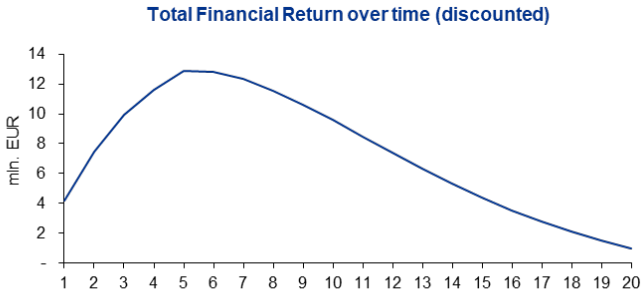
1) Commonland estimates this to be EUR 400.000 per year

Financial return (1/2)

Detailed explanation of the impacts

Impact	Financial return
Explanation	**Direct financial returns for all stakeholders,** including increased earnings of regenerative farmers and additional local earnings from cluster companies (traders) and tourism. Also, interest paid to funders is included.
Impact relevant for which stakeholders	**Key stakeholders:** parties that receive a financial return: private investors, farmers.
Discount rate used	In the intervention case: 10%
Key assumptions	Direct financial returns consist of the sum of (a) delta earnings of farmers in the intervention case (relative to BaU), (b) earnings for regenerative trading companies and (c) earnings from tourism and (d) interest paid to funders. a) Regenerative farmers sell their regenerative products to a trading company for a price premium, resulting in increased earnings for regenerative farmers. Furthermore, regenerative practices ensure crop yields are less affected by climate change. b) Trading companies buy products from farmers using trading credit from external funders. These are then sold for a price premium, generating earnings for trading companies. c) Restored natural zones attract tourism, generating earnings for tourism. d) Interest paid to funders. Continues on the next page…





Financial return (2/2)

Detailed explanation of the impacts

Impact	Financial return
High-level calculation	a) Delta earnings of regenerative farmers = [yields of regenerative crops * surface * price of the crops to the traders (incl. price premium)] – [yields of non-regenerative crops * surface of non-regenerative crops * price of the crops] – [interest paid to private investors, if applicable] + b) Earnings for regenerative trading companies = [yields of regenerative crops * surface * (wholesale) market price for regenerative crops – (purchasing costs to farmers + processing costs + labor costs + interest paid for trade credit)] + c) Earnings from tourism = [number of hectares of natural zone restored * # of tourists per hectare restored natural zone * average spend per tourist] + d) Interest paid for trade credit = [total interest paid by trading company to funders for commodity trading credit][1]

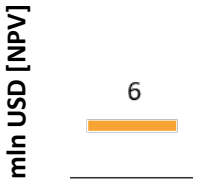
For model inputs, please see Appendix page 57-60

1 Since the trading credit period is relatively short, less than a year, only the interest paid was included in the model since as a benefit to the private investors.

Sense of purpose

Detailed explanation of the impacts

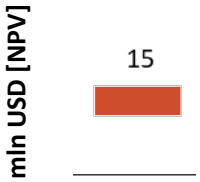
Impact	Sense of purpose
Explanation	Inspirational and educational activities around landscape restoration improve community building and give local communities a sense of purpose, **lowering future risk**.
Impact relevant for which stakeholders	**Key stakeholders:** parties that benefit from de-risking the area: private investors, farmers, governments.
Discount rate used	Correction based on below
Key assumptions and high-level calculation	Restoration activities in the landscape will yield new employment opportunities, a stronger sense of community and engagement with the local population. Since people will have more of a purpose to stay and work in the landscape, future investments in the landscape are less risky with respect to the social capital factor. The de-risking due to the increased sense of purpose is quantified through a lower discount rate. The discount rate reduction of -1,5% is equally split between sense of purpose (-0,5%), water retention (-0,5%) and erosion prevention (-0,5%).



Job creation (1/2)

Detailed explanation of the impacts

Impact	Job creation
Explanation	Newly created companies and regenerative agriculture practices create **local jobs** and therefore **income for the people.**
Impact relevant for which stakeholders	**Key stakeholders:** parties that benefit from the improvement of local economies: local communities, farmers, governments.
Discount rate used	In business as usual: 10% In the intervention case: 10 %
Key assumptions	Job creation consist of the sum of (a) jobs created on regenerative farms, (b) jobs created by the emergence of new regenerative agriculture companies, and (c) jobs created by the emergence of new companies around tourism, reforestation and ground work in green infrastructure. a) Regenerative agriculture requires more labor compared to conventional agriculture, thus shifting agricultural land towards regenerative agriculture creates jobs. b) New regenerative agriculture companies (e.g. processors or traders of regenerative products) will emerge when shifting agricultural land towards regenerative agriculture creating jobs. c) New tourism companies (e.g. organizing ecological tours) will emerge when natural zones are restored, thus creating jobs. Continues on the next page…



Job creation (2/2)

Detailed explanation of the impacts

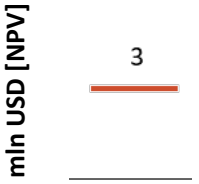
Impact	Job creation
High-level calculation	This is calculated as follows: a) Jobs created on regenerative farms = [total hectares of regenerative agriculture multiplied by increase in labor for regenerative agriculture multiplied by the average wage] + b) Jobs created by new regenerative agriculture companies = [total hectares of regenerative agriculture multiplied by the new regenerative agriculture company emergence rate multiplied with the average amount of positions within the new companies multiplied with the average wage] + c) Jobs created by new tourism companies = [total hectares of restored natural zone multiplied by the new tourism company emergence rate multiplied with the average amount of positions within the new companies multiplied with the average wage]

For model inputs, please see Appendix page 57-60

Income tax (jobs)

Detailed explanation of the impacts

Impact	Income tax (jobs)
Explanation	**Income tax generated** through newly created jobs.
Impact relevant for which stakeholders	**Key stakeholders:** parties that benefit from increased tax income: governments.
Discount rate used	In business as usual: 10% In the intervention case: 10%
Key assumptions and inputs	Income tax generated consists of: (a) the amount of income tax the governments receive from additional job creation due to the intervention, and (b) costs for the government due to remaining unemployment. This is calculated as follows: a) Income tax (jobs) = [Income generated through additional jobs multiplied by the local income tax percentage] - b) Costs due to unemployment = [Number of people remaining unemployed multiplied by the average unemployment benefit (corrected for the unemployment benefit duration in Andalusia, Spain)]

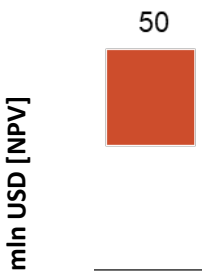


For model inputs, please see Appendix page 57-60

Business tax

Detailed explanation of the impacts

Impact	Business tax
Explanation	**Additional local business tax** arising from more business activities (agriculture and other activities).
Impact relevant for which stakeholders	**Key stakeholders:** parties that benefit from increased tax income: governments.
Discount rate used	In business as usual: 10% In the intervention case: 10%
Key assumptions and inputs	Local business tax arising from more business activities consist of business tax paid by (a) newly emerged regenerative agriculture and trading companies and (b) newly emerged tourism companies. This is calculated as follows a) Business tax regenerative agriculture companies = [total additional earnings from regenerative farmers and traders multiplied by the percentage of business tax] + b) Business tax tourism companies = [total earnings from new tourism companies multiplied by the percentage of business tax][1]

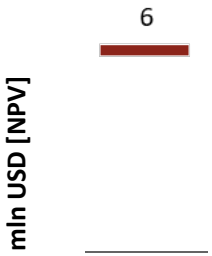


For model inputs, please see Appendix page 57-60

Water retention

Detailed explanation of the impacts

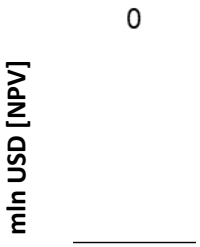
Impact	Water retention
Explanation	Regenerative agriculture practices and natural zone restoration improve **water retention** and local **water availability.**
Impact relevant for which stakeholders	**Key stakeholders:** parties that benefit from de-risking the area: private investors, farmers, governments
Discount rate used	Correction based on below
Key assumptions and high-level calculation	Restoration activities in the landscape will yield improved water retention and high soil quality that will last for longer periods. This results in more secure yields compared to conventional agriculture, meaning that future investments in the landscape are less risky with respect to the agriculture output. The de-risking due to the increased sense of purpose is quantified through a lower discount rate. The discount rate reduction of -1,5% is equally split between sense of purpose (-0,5%), water retention (-0,5%) and erosion prevention (-0,5%).



Carbon sequestration

Detailed explanation of the impacts

Impact	Carbon sequestration
Explanation	Regenerative agriculture practices in the combined zone and restoration of natural zone result in **additional carbon sequestration. In the conservative scenario we assumed that no mechanism exists to monetize carbon sequestration.**
Impact relevant for which stakeholders	**Key stakeholders:** we assumed that in the conservative scenario no mechanism exists to monetize carbon sequestration (e.g. through selling carbon credits). Therefore there are no parties (i.e. CO_2 intense industries) in this scenario that would be interested in investing in this impact.
Discount rate used	In the intervention case: 10%
Key assumptions and inputs	• We assumed that restored **natural zones sequestrate 4,5 tonnes of CO_2** per hectare per year[1] (compared to 0,5 tonne of CO_2 per hectare of non-restored natural zone). • We assumed **regenerative agricultural lands sequestrate 2 tonnes of CO_2** per hectare per year (compared to 0,5 tonne per hectare of non-regenerative lands)[1]. • We assumed that in this scenario no mechanism exists to monetize carbon sequestration. In the Vision scenario and the Upside scenario it is assumed that a voluntary carbon market exists where carbon credits for carbon sequestered in regenerative agricultural land can be sold to parties interested in investing in this impact, see page 43.



1) Expert input: Commonland and Environmental Sciences of the Copernicus Institute of Sustainable Development

Biodiversity

Detailed explanation of the impacts

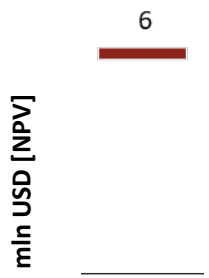
Impact	Biodiversity
Explanation	Regenerative agriculture practices and natural zone restoration improve biodiversity, increasing pollination which positively influences the **agricultural yields** also for farmers that are not part of the intervention scope.
Impact relevant for which stakeholders	**Key stakeholders:** Government that receives higher business tax due to increased yields.
Discount rate used	In the intervention case: 10%
Key assumptions and high-level calculation	Regenerative agriculture increases biodiversity which improves pollination, thus increasing the yields also for non-regenerative farmers in the area indirectly. This increase in yields in the intervention case is reflected in the improved profitability in the financial return. The value of biodiversity is reflected in the additional tax that the government will benefit from, resulting from the higher yields of farmers out of the intervention scope. The total farmers indirectly affected by biodiversity is given as an input to the model. Increased yield due to biodiversity increase for non-regenerative famers = [total hectares of out of scope non-regenerative agriculture multiplied by yields over time multiplied by yield increase due to pollination] We assumed a yield increase of 7% (non-compounding)[1]

1) International Center for Biosaline Agriculture

Erosion prevention

Detailed explanation of the impacts

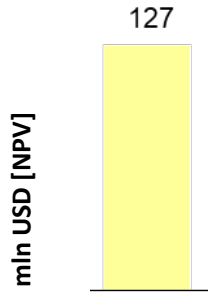
Impact	Erosion prevention
Explanation	Regenerative agriculture practices and natural zone restoration prevent land erosion, **lowering future risk**.
Impact relevant for which stakeholders	**Key stakeholders:** parties that benefit from de-risking the area: private investors, farmers, governments
Discount rate used	Correction based on below
Key assumptions and high-level calculation	Restoration activities in the landscape will limit erosion effects and ensure high soil quality that will last for longer periods. This results in more secure yields compared to conventional agriculture, meaning that future investments in the landscape are less risky with respect to the agriculture output. The de-risking due to the increased sense of purpose is quantified through a lower discount rate. The discount rate reduction of -1,5% is equally split between sense of purpose (-0,5%), water retention (-0,5%) and erosion prevention (-0,5%).



True return

Detailed explanation of the impacts

Impact	True return
Explanation	**Total sum** of all created impacts minus the required funding.
Impact relevant for which stakeholders	**Key stakeholders:** all stakeholders that receive a return: governments, philanthropists, farmers, private investors.
Discount rate used	Impact dependent, see previous pages.
Key assumptions and high-level calculation	The true return is the total sum of all impacts minus the required funding for the interventions to create those impacts. This is calculated as follows: [Financial return] + [Sense of purpose] + [Job creation] + [Income tax (jobs)] + [Business tax] + [Water retention] + [Carbon sequestration] + [Biodiversity] + [Erosion prevention] – [Funding required].



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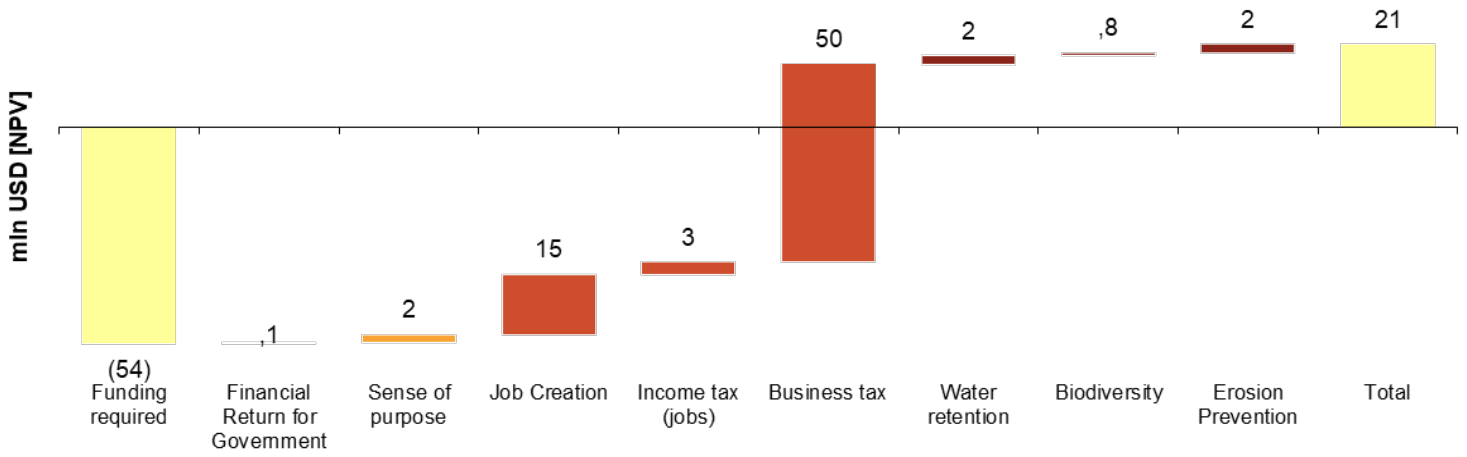
Value for and funding from each stakeholder in the conservative scenario

Funding case for governments in the Conservative scenario

Stakeholder	Governments

Business case



Key insights / messages

If governments provide 45% of the funding: USD 54 mln. (NPV), they would still have a positive return*.

Key returns are from additional business taxes (USD 50 mln. NPV), which are a result of the additional income for farmers and the associated trading companies. Additional business taxes are also captured from the biodiversity effect on non-regenerative farmers outside of the intervention area (USD 771k NPV).

Further, 165 new jobs are created resulting in additional income for local communities (USD 15 mln. NPV) and some income taxes related to these new jobs (USD 3 mln. NPV).

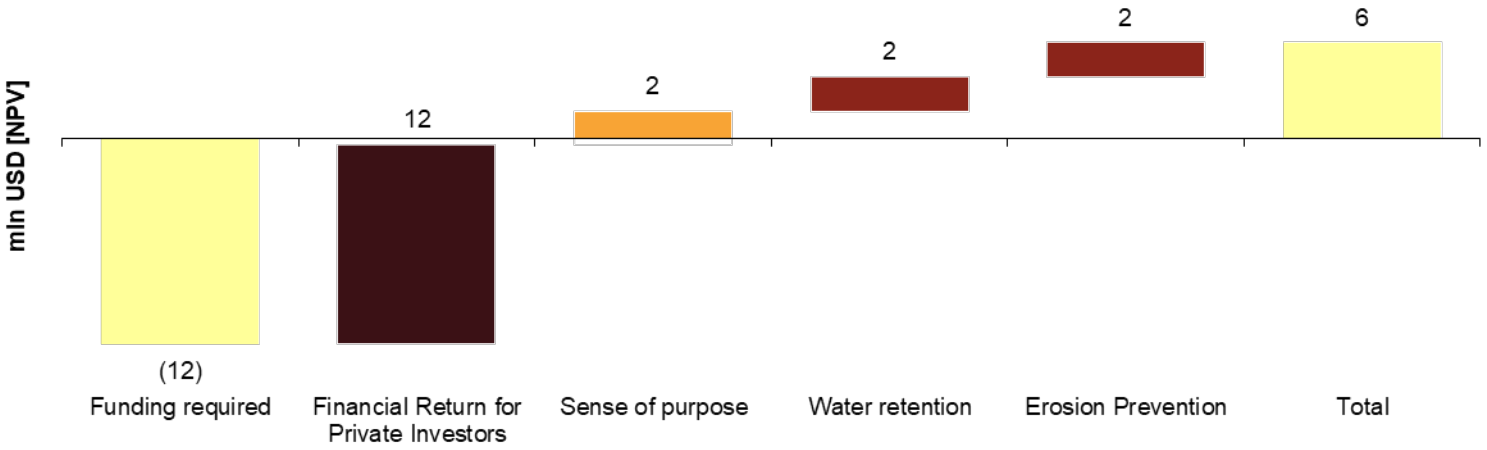
Governments receive risk reduction returns for the landscape, due to benefits from the sense of purpose, improved water retention and erosion prevention, totaling (USD 6 mln. NPV)

* Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in this value bridge.

Funding case for private investors in the Conservative scenario

Stakeholder	Private investors

Business case



Key insights / messages

Internal Rate of Return[1] (IRR): 6%

If private investors provide 10% of the funding: USD 12 mln. (NPV), they would obtain positive returns.

Key returns are from the interest payments from the trading companies: USD 12 mln. (NPV).

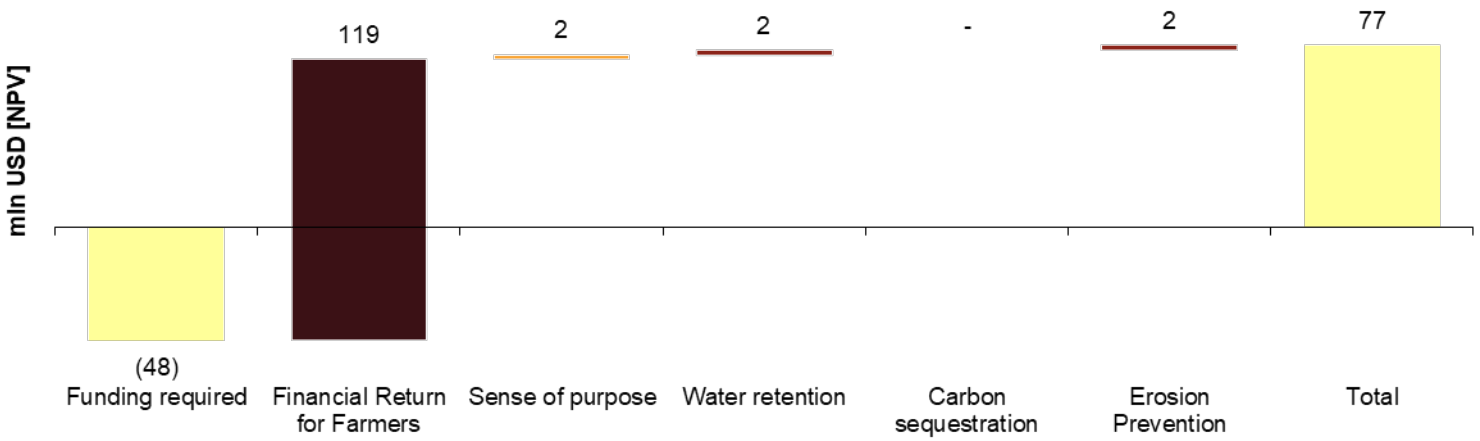
Risk reduction returns are relevant for investors, which are a result of more sense of purpose, more water retention and erosion prevention in the landscape, which total USD 6 mln. (NPV).

1) Internal Rate of Return estimates the profitability of investments, it behaves like a discount rate that makes the NPV of all cash flows equal to zero. IRR calculations rely on the same formula as NPV does. IRR's are calculated, however because of the spread in financing needed and spread of returns, they should be interpreted together with other information such as NPV results.

Funding case for farmers in the Conservative scenario

Stakeholder	Farmers

Business case



Key insights / messages

If farmers provide 40% of the funding: USD 48 mln. (NPV), they would obtain positive returns.

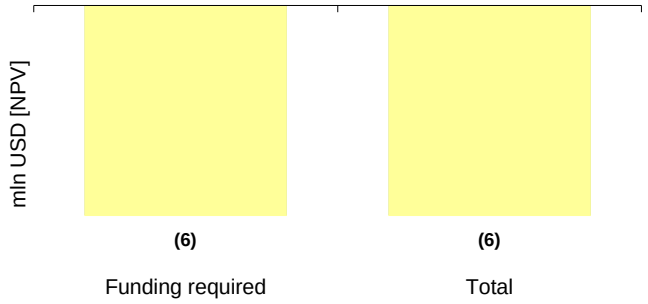
Key returns are from the improved earnings: USD 119 mln. (NPV). This is a result of a higher price for the crops and because of more stable yields due to regenerative agriculture practices.

Risk reduction returns are less relevant for farmers due to the higher direct financial returns. The total risk reduction is USD 6 mln. (NPV), which is a result of more sense of purpose, more water retention and erosion prevention in the landscape.

Funding case for philanthropists in the Conservative scenario

Stakeholder	Philanthropists

Business case



Key insights / messages

Philanthropists can contribute to the landscape restoration through funding, especially in the beginning of the process, to accelerate the start of the project.

We assumed philanthropists provide 5% of the funding, and don't expect a financial return.

Non-financial returns are:
- Jobs created: 165
- Tourism attracted: 10.000 people
- Natural zone restored: 25.000 hectares
- Regenerative agriculture: 60.000 hectares
- Carbon sequestered: 2,6 mln. tonnes CO_2

What are the benefits for funders?

FUNDER	BENEFITS						
	Stable and long term financial return	De-risking	Increase in tax income	Retention and return of inhabitants	Growth of local economy and job creation	Contribution to SDG's[1]	Restored natural capital
Farmer	✓	✓		✓			✓
Local communities		✓		✓	✓		✓
Local, regional and national governments		✓	✓	✓	✓	✓	✓
Pension funds	✓	✓				✓	✓
Private investors	✓	✓				✓	
Impact investors	✓	✓				✓	✓
Foundations				✓	✓	✓	✓
Insurers	✓	✓		✓		✓	
Water intense industries		✓				✓	✓
CO_2 intense industries		✓				✓	✓

1) In the appendix the link to specific SDGs is further elaborated, see page 62

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Appendices

I. Mechanisms and assumptions
II. Value for and funding from stakeholders in the Vision scenario
III. Value for and funding from stakeholders in the Upside scenario
VI. Model inputs in the different scenarios
V. Sensitivity analysis of the discount rate
VI. Sustainable Development Goals
VII. Results with loan from investors to farmers
VIII. Disclaimer

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Mechanisms and assumptions

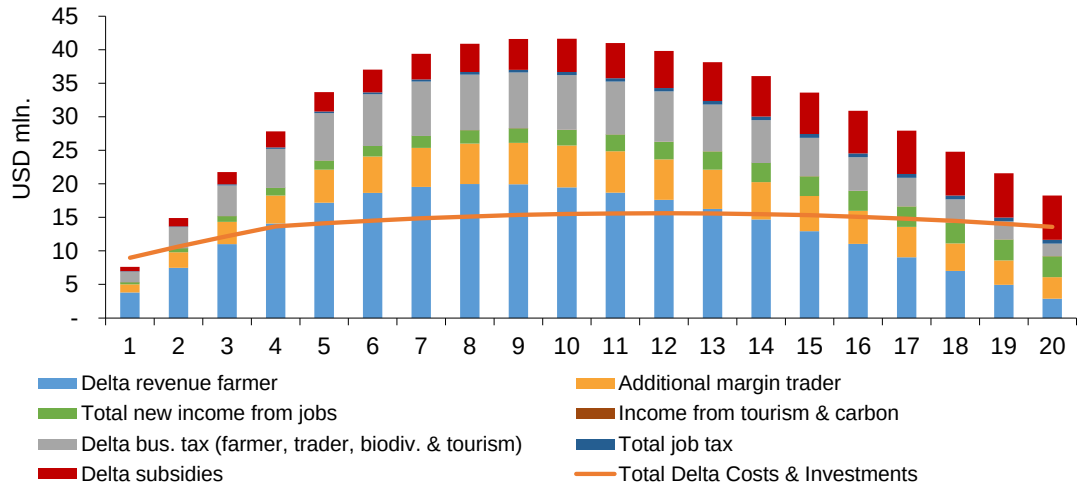
Mechanisms and assumptions used in the Conservative scenario

Conservative Scenario

Outcomes:

- True return*: USD 127 mln. (NPV)
- Private Investors IRR*: 6%

Delta revenue vs delta costs intervention (non-discounted)**



Mechanisms and assumptions:

- ✓ Price premiums for regenerative products decrease overtime due to expected increase in supply. Thus, a gradual decrease in price premium from +130% to +20% over 20 years is assumed.
- ✓ The switch to regenerative farming causes a drop in subsidy income for farmers of up to USD 6,6 mln per year in year 20. This loss in subsidies for farmers is a gain for government (at EU level).
- ✓ Change of land value is not included. All agricultural land is owned by farmers, natural zones are owned by governments.
- ✓ Crop yield in the BaU case decreases by 25% over the 20 year period, whereas in the regenerative case it decreases by 20% over the same period.
- ✓ In the intervention case, crop yield gradually increases over a 5 year period and then stabilizes at +18% due to pollination, compared to BaU.
- ✓ The intervention case requires 10% more workers than BaU
- ✓ Trading companies pay a 2,5% interest-premium to private investors, based on the revenues of the regenerative cash crop.
- ✓ Restored land in the natural zone attracts additional tourism, which is quantified as cash flow in the financial returns.
- ✓ Restored land sequesters more CO_2 per hectare compared to non-restored land (restored natural zones: 4,5 tonnes/ha/yr, compared to non-restored 0,5 tonnes/ha/yr; regenerative agriculture lands: 2 tonnes/ha/yr, compared to BaU 0,5 tonnes/ha/yr)
- ✓ Impacts represented by sense of purpose, water retention and erosion prevention serve as a de-risking mechanism, thus reducing the discount rate.

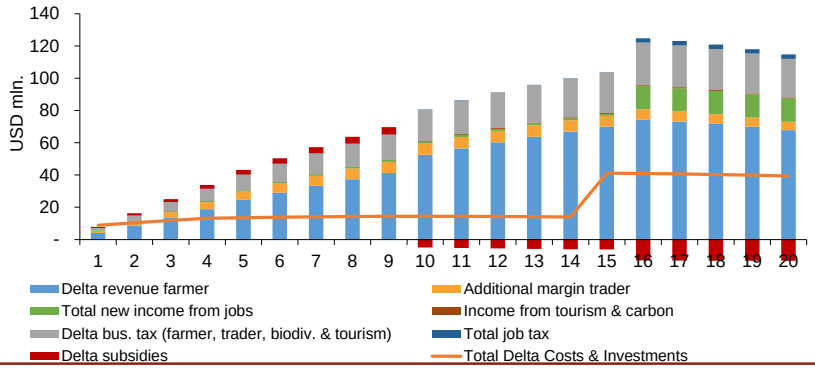
*Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in the True Return and IRR
** Based on revenues, costs and investments for all parties, including lower subsidy expenses for EU

Mechanisms and assumptions used in the Vision and Upside scenario

Vision Scenario

Outcomes
True return*: USD 415 mln. (NPV) Private Investors IRR*: 6%

Delta revenue vs delta costs intervention (non-discounted)**



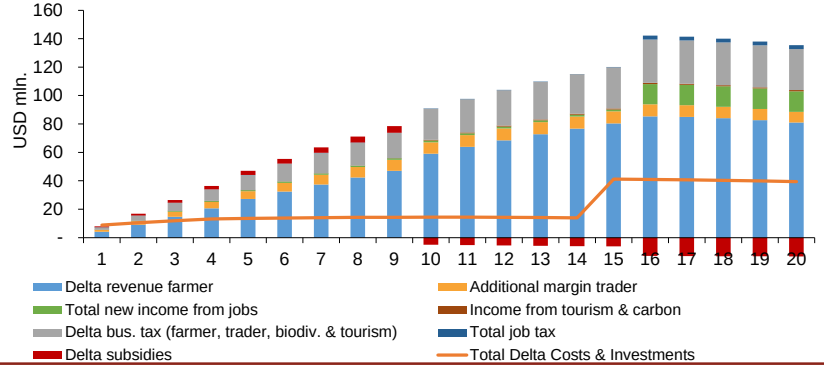
Additional mechanisms/assumptions:

- ✓ Price premium decreases from 130% down to **50%** over the 20 year period**.**
- ✓ 10% of regenerative agricultural land is owned by private investors and is sold at the end of the 20 year restoration period, rest of the agricultural land is owned by farmers. Further, land value of agricultural land decreases by **20%** in BaU case and by **5%** in the intervention case (due to the fact that soil quality is maintained for longer period in the intervention case). All natural zones are owned by governments.
- ✓ Crop yield in the BaU case decreases to 0% after 15 years from start of intervention, as lands become fully depleted and no agricultural processes are possible any more. This means that revenues, costs and subsidies for agricultural processes become zero after 15 years.
- ✓ Crop yield gradually increases over a 5 year period and then stabilizes at **+18%** due to pollination in the regenerative case.
- ✓ There is a shift in farming subsidies in year 10 (i.e. regenerative farmers receive a higher subsidy than conventional ones).
- ✓ Labor costs increase in the BaU case by 20% over the 20-year period.
- ✓ Soil carbon sequestered in farm land is aggregated and sold on the voluntary carbon market for a price of **USD 6 per tonne*****,** expenses related to preparatory work for carbon monetization have not been taken into account. Additional carbon monetization opportunities related to e.g. reforestation, agroforestry, fertilizers and possible subsidies under the EU Green Deal have not been included in the model.

Upside Scenario

Outcomes
True return*: USD 487 mln. (NPV) Private Investors IRR*: 19%

Delta revenue vs delta costs intervention (non-discounted)**



Additional mechanisms/assumptions:

- ✓ Price premium decreases from 130% down to **80%** over the 20 year period.
- ✓ 10% of regenerative agricultural land is owned by private investors and is sold at the end of the 20 year restoration period, rest of the agricultural land is owned by farmers. Further, land value of agricultural land decreases by **20%** in BaU case and by **5%** in the intervention case (due to the fact that soil quality is maintained for longer period in the intervention case). All natural zones are owned by governments.
- ✓ Crop yield in the BaU case decreases to 0% after 15 years from start of intervention, as lands become fully depleted and no agricultural processes are possible any more. This means that revenues, costs and subsidies for agricultural processes become zero after 15 years.
- ✓ Crop yield gradually increases over a 5 year period and then stabilizes at **+22%** due to pollination in the regenerative case.
- ✓ There is a shift in farming subsidies in year 10 (i.e. regenerative farmers receive a higher subsidy than conventional ones).
- ✓ Labor costs increase in the BaU case by 20% over the 20-year period.
- ✓ Soil carbon sequestered in farm land is aggregated and sold on the voluntary carbon market for a price of **USD 8 per tonne*****,** expenses related to preparatory work for carbon monetization have not been taken into account. Additional carbon monetization opportunities related to e.g. reforestation, agroforestry, fertilizers and possible subsidies under the EU Green Deal have not been included in the model.

*Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in the True Return and IRR
** Based on revenues, costs and investments for all parties, including lower subsidy expenses for EU
*** Expert input: Commonland

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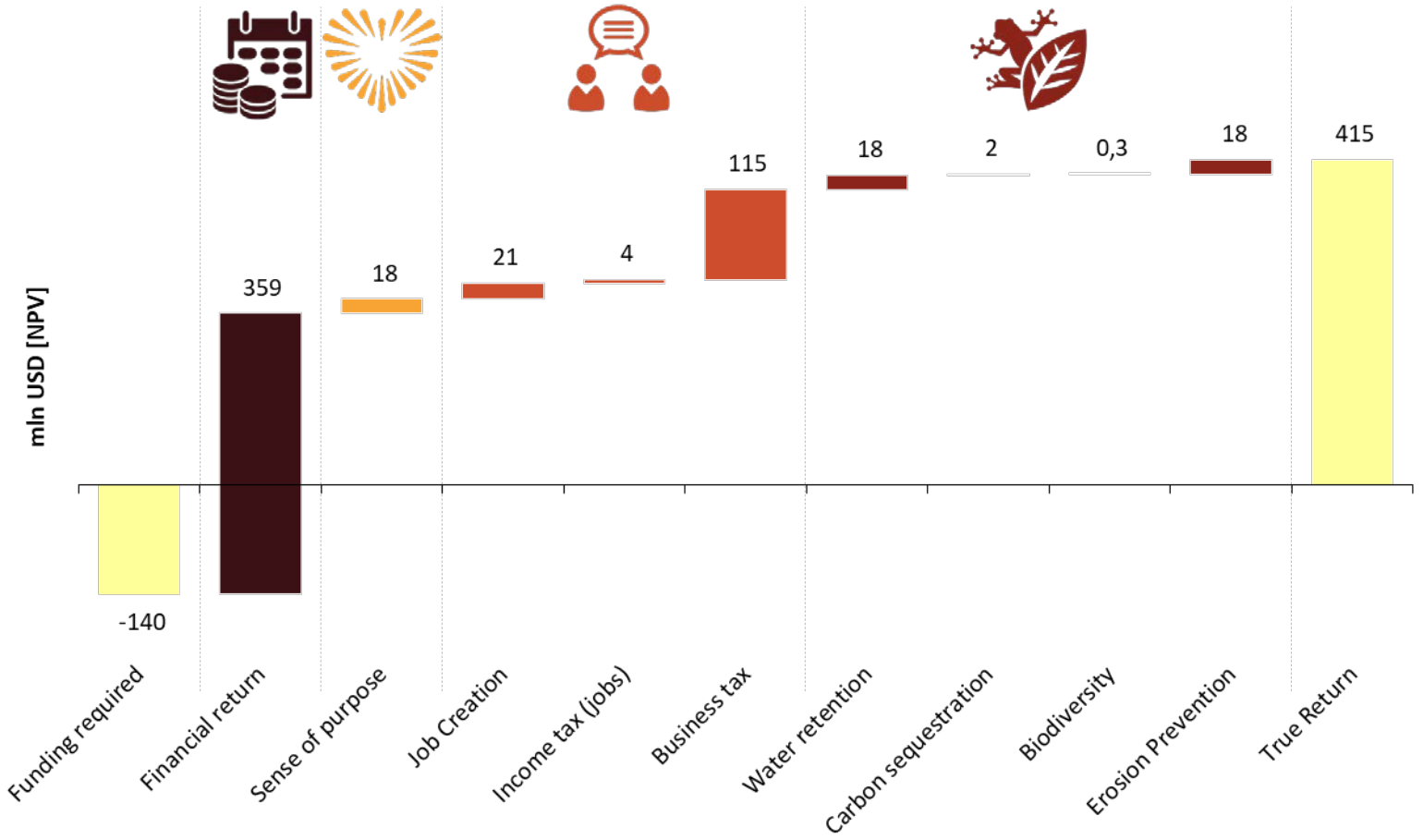
Value for and funding from stakeholders in Vision scenario

The true return of landscape restoration in the Vision scenario is USD 415 mln. and requires USD 140 mln. funding

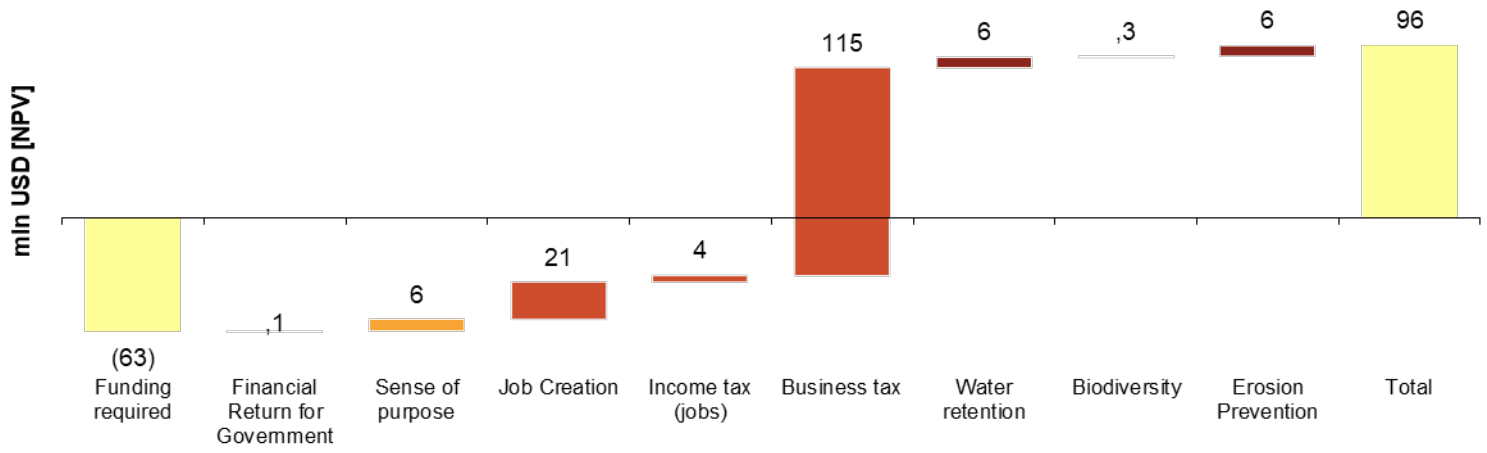


* Based on Altiplano Estepario region (Spain), 20 year timeframe, discount rate of 10% (BaU). Discount rate after interventions varies based on risk reduction from intervention. Numbers are based on current ambitions of Commonland in the region (8,5% of 1 mln hectares is affected).
** Note that the financial return also includes return for the traders, which is not included as a separate stakeholder on the next pages.
*** Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in this value bridge.

Funding case for governments in the Vision scenario

Stakeholder	Governments

Business case



Key insights / messages

If governments provide 45% of the funding: USD 63 mln. (NPV), they would still have a positive return*.

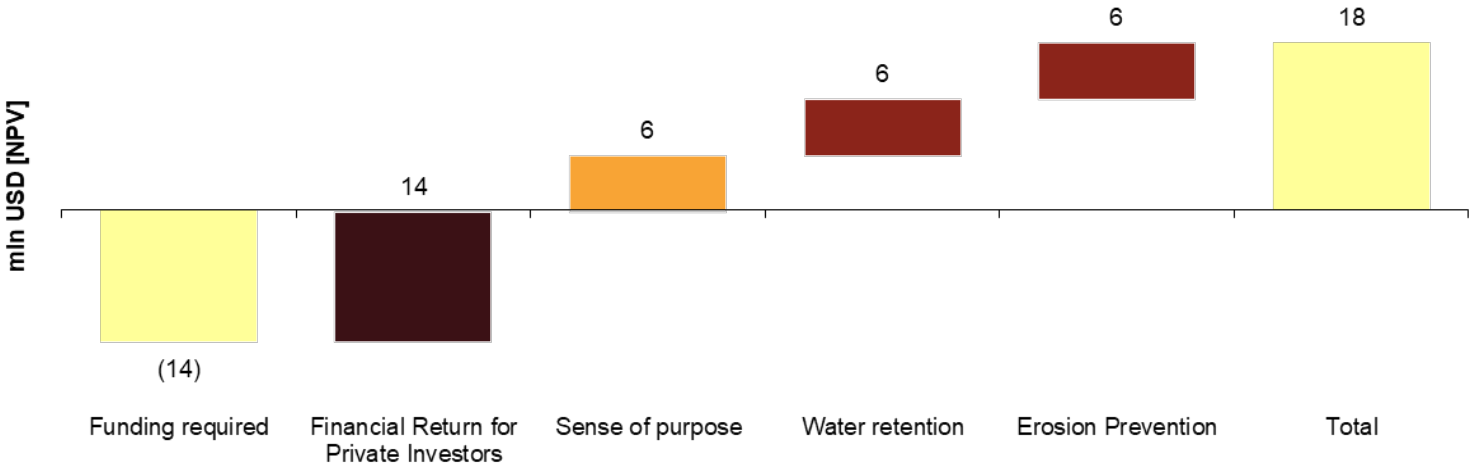
Key returns are from additional business taxes (USD 115 mln. NPV), which are a result of the additional income for farmers and the associated trading companies. Additional business taxes are also captured from the biodiversity effect on non-regenerative farmers outside of the intervention area (USD 348k NPV).

Further, 165 new jobs are created resulting in additional income for local communities (USD 21 mln. NPV) and some income taxes related to these new jobs (USD 4 mln. NPV).

Governments receive risk reduction returns for the landscape, due to benefits from the sense of purpose, improved water retention and erosion prevention, totaling (USD 18 mln. NPV).

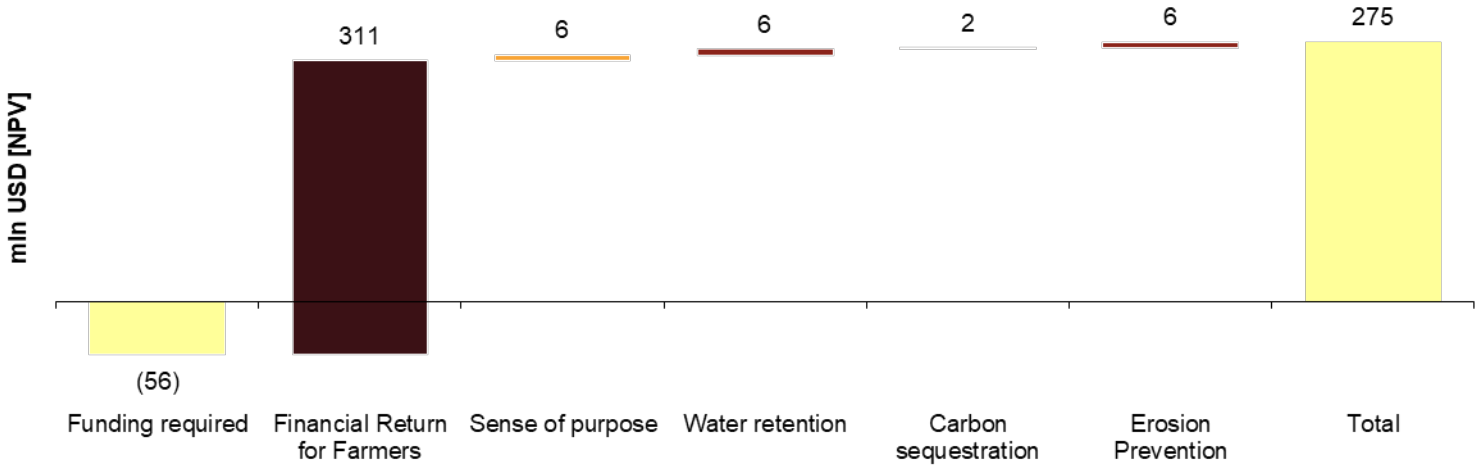
* Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in this value bridge.

Funding case for private investors in the Vision scenario

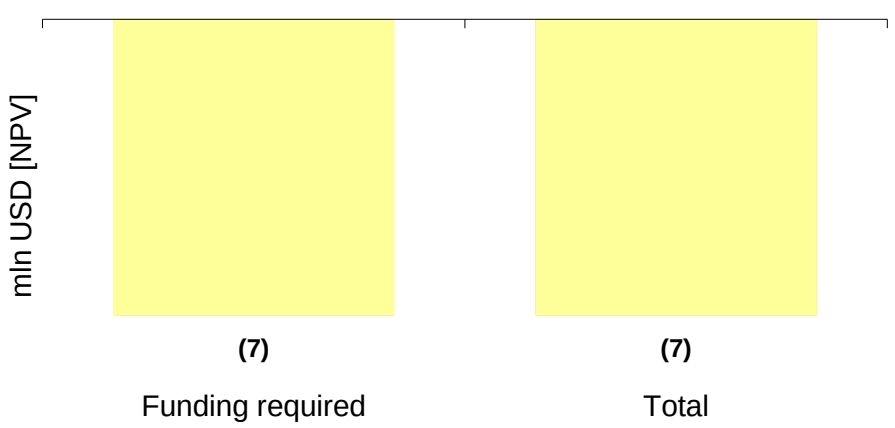
Stakeholder	Private investors
Business case	
Key insights / messages	**Internal Rate of Return[1] (IRR): 6%** If private investors provide 10% of the funding: USD 14 mln. (NPV), they would obtain positive returns. Key returns are from the interest payments from the trading companies: USD 14 mln. (NPV). Risk reduction returns are relevant for investors, which are a result of more sense of purpose, more water retention and erosion prevention in the landscape, total USD 18 mln. (NPV).

1) Internal Rate of Return estimates the profitability of investments, it behaves like a discount rate that makes the NPV of all cash flows equal to zero. IRR calculations rely on the same formula as NPV does. IRR's are calculated, however because of the spread in financing needed and spread of returns, they should be interpreted together with other information such as NPV results.

Funding case for farmers in the Vision scenario

Stakeholder	Farmers
Business case	
Key insights / messages	If farmers provide 40% of the funding: USD 56 mln. (NPV), they would obtain positive returns. Key returns are from the improved earnings: USD 311 mln. (NPV). This is a result of a higher price for the crops and because of more stable yields due to regenerative agriculture practices. Farmers also benefit sequestration of additional carbon, which they capture through a voluntary carbon market: USD 2 mln. (NPV). Risk reduction returns are less relevant for farmers due to the higher direct financial returns. The total risk reduction is USD 18 mln. (NPV), which is a result of more sense of purpose, more water retention and erosion prevention in the landscape.

Funding case for philanthropists in the Vision scenario

Stakeholder	Philanthropists
Business case	
Key insights / messages	Philanthropists can contribute to the landscape restoration through funding, especially in the beginning of the process, to accelerate the start of the project. We assumed philanthropists provide 5% of the funding, and don't expect a financial return. Non-financial returns are: • Job creation: 165 • Tourism attracted: 10.000 people • Natural zone restored: 25.000 hectares • Regenerative agriculture: 60.000 hectares • Carbon sequestered: 2,6 mln. tonnes CO_2

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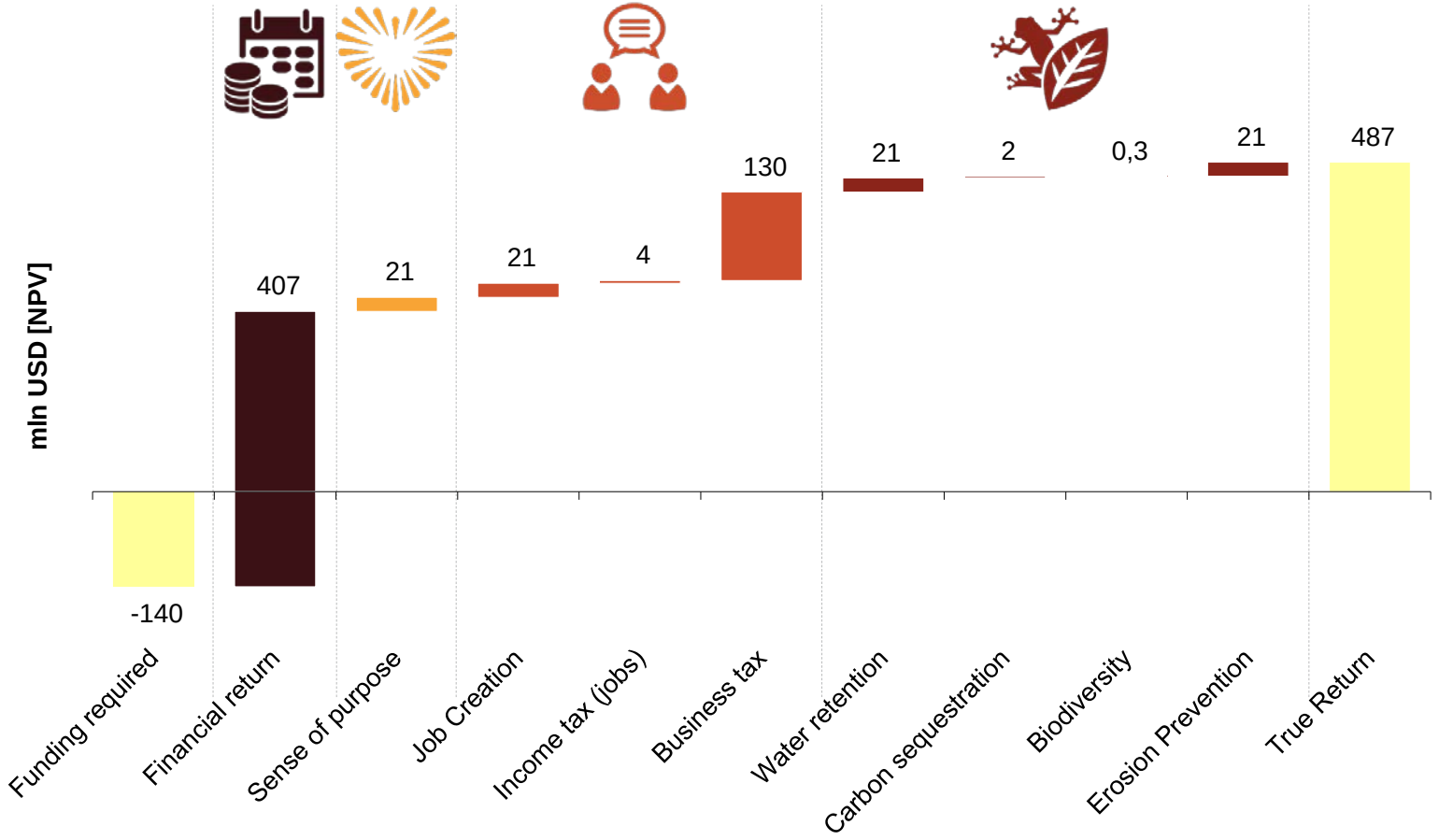
Value for and funding from stakeholders in the Upside scenario

The true return of landscape restoration in the Upside scenario is USD 487 mln. and requires USD 140 mln. funding

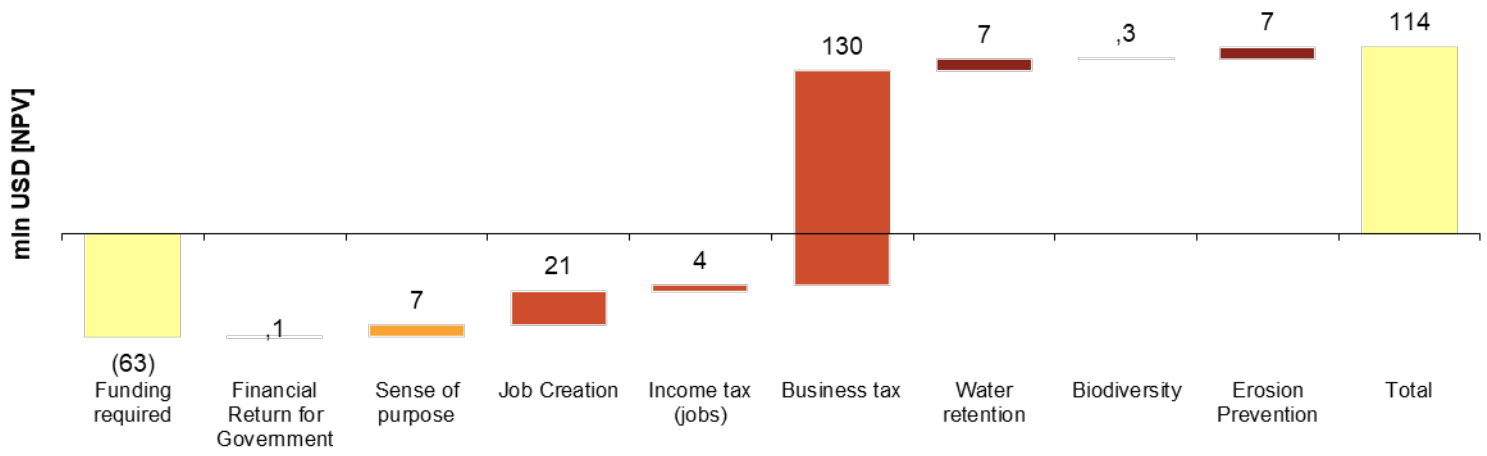


* Based on Altiplano Estepario region (Spain), 20 year timeframe, discount rate of 10% (BaU). Discount rate after interventions varies based on risk reduction from intervention. Numbers are based on current ambitions of Commonland in the region (8,5% of 1 mln hectares is affected).
** Note that the financial return also includes return for the traders, which is not included as a separate stakeholder on the next pages.
* Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in this value bridge.

Funding case for governments in the Upside scenario

Stakeholder	Governments

Business case



Key insights / messages

If governments provide 45% of the funding: USD 63 mln. (NPV), they would still have a positive return*.

Key returns are from additional business taxes (USD 130 mln. NPV), which are a result of the additional income for farmers and the associated trading companies. Additional business taxes are also captured from the biodiversity effect on non-regenerative farmers outside of the intervention area (USD 348k NPV).

Further, 165 new jobs are created resulting in additional income for local communities (USD 21 mln. NPV) and some income taxes related to these new jobs (USD 4 mln. NPV).

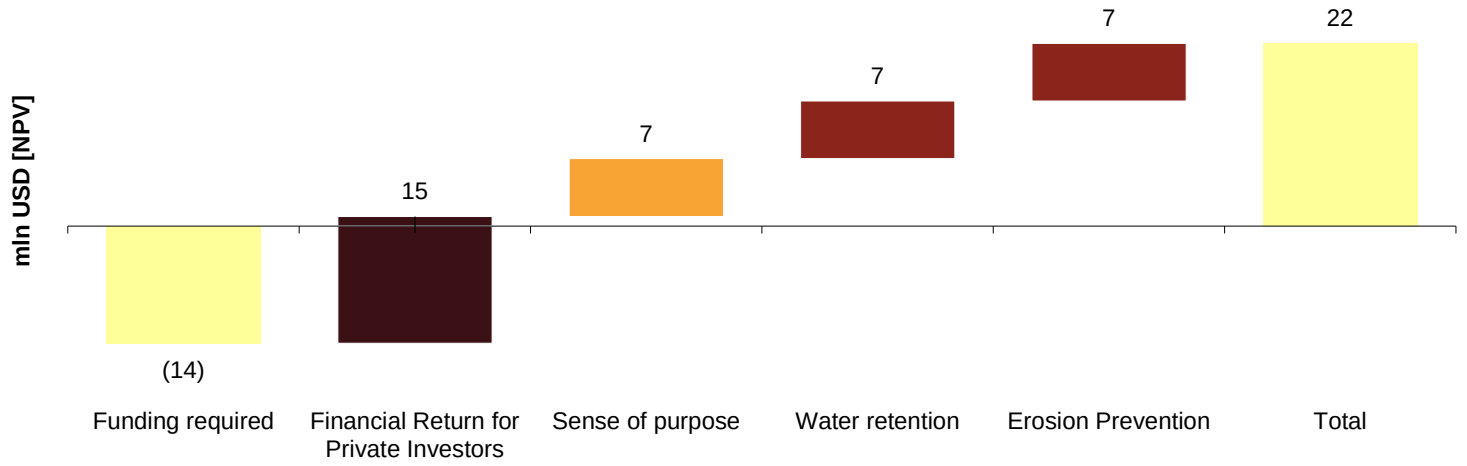
Governments receive risk reduction returns for the landscape, due to benefits from the sense of purpose, improved water retention and erosion prevention, totaling (USD 21 mln. NPV)

* Value for local (and national) stakeholders in the landscape are included. Reduced costs for the EU, as a result of less subsidies, are not included in this value bridge.

Funding case for private investors in the Upside scenario

Stakeholder	Private investors

Business case



Key insights / messages

Internal Rate of Return[1] (IRR): 19%

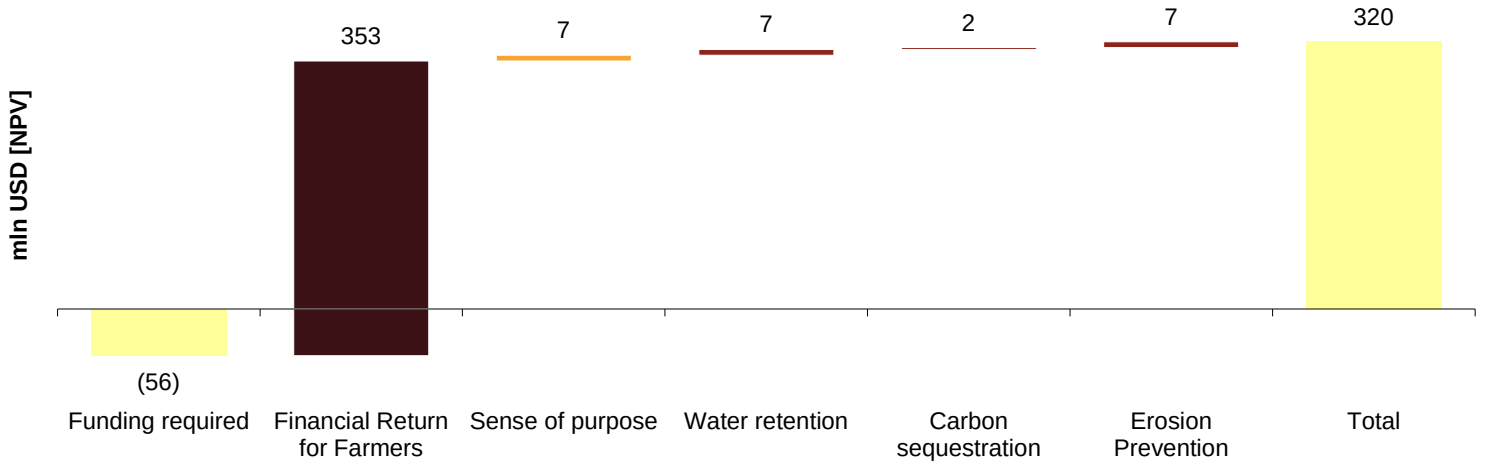
If private investors provide 10% of the funding: USD 14 mln. (NPV), they would obtain positive returns.

Key returns are from the interest payments from the trading companies: USD 15 mln. (NPV).

Risk reduction returns are relevant for investors, which are a result of more sense of purpose, more water retention and erosion prevention in the landscape, total USD 21 mln. (NPV).

1) Internal Rate of Return estimates the profitability of investments, it behaves like a discount rate that makes the NPV of all cash flows equal to zero. IRR calculations rely on the same formula as NPV does. IRR's are calculated, however because of the spread in financing needed and spread of returns, they should be interpreted together with other information such as NPV results..

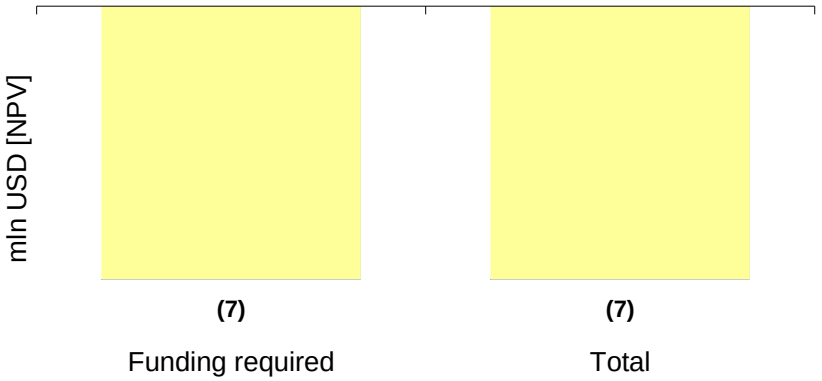
Funding case for farmers in the Upside scenario

Stakeholder	Farmers
Business case	
Key insights / messages	If farmers provide 40% of the funding: USD 56 mln. (NPV), they would obtain positive returns. Key returns are from the improved earnings: USD 353 mln. (NPV). This is a result of a higher price for the crops and because of more stable yields due to regenerative agriculture practices. Farmers also benefit sequestration of additional carbon, which they capture through a voluntary carbon market: USD 2 mln (NPV). Risk reduction returns are less relevant for farmers due to the higher direct financial returns. The total risk reduction is USD 21 mln. (NPV), which is a result of more sense of purpose, more water retention and erosion prevention in the landscape.

Funding case for philanthropists in the Upside scenario

Stakeholder	Philanthropists

Business case



Key insights / messages

Philanthropists can contribute to the landscape restoration through funding, especially in the beginning of the process, to accelerate the start of the project.

We assumed philanthropists provide 5% of the funding, and don't expect a financial return.

Non-financial returns are:
- Job creation: 165
- Tourism attracted: 10.000 people
- Natural zone restored: 25.000 hectares
- Regenerative agriculture: 60.000 hectares
- Carbon sequestered: 2,6 mln. tonnes CO_2

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Model inputs in the different scenarios

General inputs

Name	Unit	Scenario			Source
		Conservative	Vision	Upside	
Discount rate baseline	%	10%	10%	10%	Expert input: Commonland
Risk-reduction effect on discount rate	%	-1,5%	-1,5%	-1,5%	Expert input: Commonland
Inflation rate	%	0,5%	0,5%	0,5%	Expert input: Commonland
Start year of the model	yr	2015	2015	2015	Expert input: Commonland
Duration of the landscape intervention	yrs	20	20	20	Expert input: Commonland
Total area of the region (in ha)	ha	1.037.320,31	1.037.320,31	1.037.320,31	Expert input: Commonland
Total area aimed at regenerative agriculture	ha	60.000,00	60.000,00	60.000,00	Expert input: Commonland
Total area of standard agriculture affected by regenerative practices	ha	6.000,00	6.000,00	6.000,00	Expert input: Commonland
Total area aimed at restored natural zone	ha	25.000,00	25.000,00	25.000,00	Expert input: Commonland

Farmer inputs

Name	Unit	Scenario			Source
		Conservative	Vision	Upside	
Subsidies for non-regenerative farming ($/ha/yr)	$/ha/yr	220	220 (first 10 years)	220 (first 10 years)	Expert input: Commonland
Subsidies for regenerative farming ($/ha/yr)	$/ha/yr	110	110 (first 10 years)	110 (first 10 years)	Expert input: AlVelAl farmers
Capex shift towards regenerative farming (per ha) [TOTAL]	$/ha	1100	1100	1100	Expert input: AlVelAl farmers
Capex spread in years	yrs	1,00	1,00	1,00	Expert input: AlVelAl farmers
Non-regenerative yield Cash crop 1	kg/ha/yr	350	350	350	Expert input: AlVelAl farmers
Yield decrease BaU	%	25%	100% (over 15 years)	100% (over 15 years)	Expert input: Commonland
Yield decrease Regen	%	20%	20%	20%	Expert input: Commonland
Cash crop 1 price premium in year 20	%	20%	50%	80%	Expert input: Almendrehesa
% Of cash crop 1 left after regenerative farming implemented	%	75%	75%	75%	Assumption
Yield increase due to pollination	%	18,00%	18,00%	22,00%	Expert input: Commonland
Years before pollination takes place @ 100%	yrs	5	5	5	Expert input: Commonland
Proximal Yield increase due to pollination	%	7,00%	7,00%	7,00%	Assumption
Yield Cash crop 2	kg/ha/yr	1200	1200	1200	Expert input: AlVelAl farmers
% Regenerative land cash crop 2	%	25%	25%	25%	Assumption
Regenerative selling price (farmer to trader)	$/kg	0,24	0,24	0,24	Expert input: Almendrehesa
Regenerative selling price (trader to wholesale)	$/kg	0,30	0,30	0,30	Expert input: Almendrehesa
Machinery costs non-regenerative farming ($/ha, per year)	$/ha/yr	55	55	55	Expert input: AlVelAl farmers
Change in machinery costs due to regenerative farming (%)	%	-30%	-30%	-30%	Expert input: AlVelAl farmers
Reduction ramp-up (years) machinery	yrs	1,00	1,00	1,00	Assumption
Pesticide costs non-regenerative farming ($/ha, per year)	$/ha/yr	49,50	49,50	49,50	Expert input: AlVelAl farmers
Change in pesticide costs due to regenerative farming (%)	%	20%	20%	20%	Expert input: AlVelAl farmers
Reduction ramp-up (years) pesticide	yrs	1,00	1,00	1,00	Assumption
Fertilizer costs for non-regenerative farming ($/ha, per year)	$/ha/yr	137,5	137,5	137,5	Expert input: AlVelAl farmers
Change in fertilizer costs after shift towards regenerative farming (%)	%	30%	30%	30%	Expert input: AlVelAl farmers
Change in fertilizer costs ramp-up (years)	yrs	1,00	1,00	1,00	Assumption
Average cost per employee (per year)	$	18.877	18.877	18.877	Expert input: AlVelAl farmers
Labour costs increase BaU (total increase in 20 years time)	%	-	20%	20%	Assumption: Commonland
# of employees non-regenerative farming (per ha)	# of employees	0,01	0,01	0,01	Expert input: AlVelAl farmers
Change in # of employees regenerative farming (per ha)	%	10%	10%	10%	Expert input: AlVelAl farmers
Change in # of employees normal to regenerative ramp-up	yrs	1,00	1,00	1,00	Assumption
Material costs for new cash crops for regenerative farming ($/ha/yr)	$/ha/yr	110	110	110	Expert input: AlVelAl farmers
% almonds weight after de-shelling	%	30%	30%	30%	Expert input: Almendrehesa
# traders per ha	#/ha	2,50E-04	2,50E-04	2,50E-04	Assumption
# workers per trading unit	#	2,00	2,00	2,00	Expert input: Almendrehesa
Trader Opex per ha	$/ha/yr	11	11	11	Assumption
Carbon sequestration for regular farming (tonnes/ha)	t/ha/yr	0,50	0,50	0,50	Expert input: University Utrecht
Carbon sequestration for regenerative farming (tonnes/ha)	%	1,50	1,50	1,50	Expert input: University Utrecht
Carbon credit (Voluntary Market)	$/tonne	N/A	6	8	Assumption: Commonland

Natural zone restoration inputs

Name	Unit	Scenario			Source
		Conservative	Vision	Upside	
Carbon sequestration for non-restored natural zone (tonnes/per ha/per year)	t/ha/yr	0,50	0,50	0,50	Expert input: Commonland
Carbon sequestration for restored natural zone (tonnes/per ha/per year)	t/ha/yr	4,50	4,50	4,50	Expert input: Commonland
Capex restoration natural zone ($/ha)	$/ha	1430	1430	1430	Expert input: Commonland
Capex spread in years	yrs	5	5	5	Expert input: Commonland
Cost of maintenance natural zone ($/ha/year)	$/ha/yr	55	55	55	Expert input: Commonland

Social capital inputs

Name	Unit	Scenario			Source
		Conservative	Vision	Upside	
Tourism (in # of people per year/ha)	#/ha	0,03	0,03	0,03	Assumption
Tourism income (in $ per person per year)	$	33	33	33	Assumption
Businesses per ha of restored land	#/ha	0,001	0,001	0,001	Assumption
Jobs per business	#	3	3	3	Assumption
Income Tax	%	19%	19%	19%	Desk research
Unemployment benefit amount (in $ per person per year)	$	10.008	10.008	10.008	Desk research
Duration unemployment benefit	yrs	1,64	1,64	1,64	Desk research
Business Tax	%	25%	25%	25%	Desk research
Foundation/NGO money in landscape	$/yr	440.000	440.000	440.000	Expert input: Commonland

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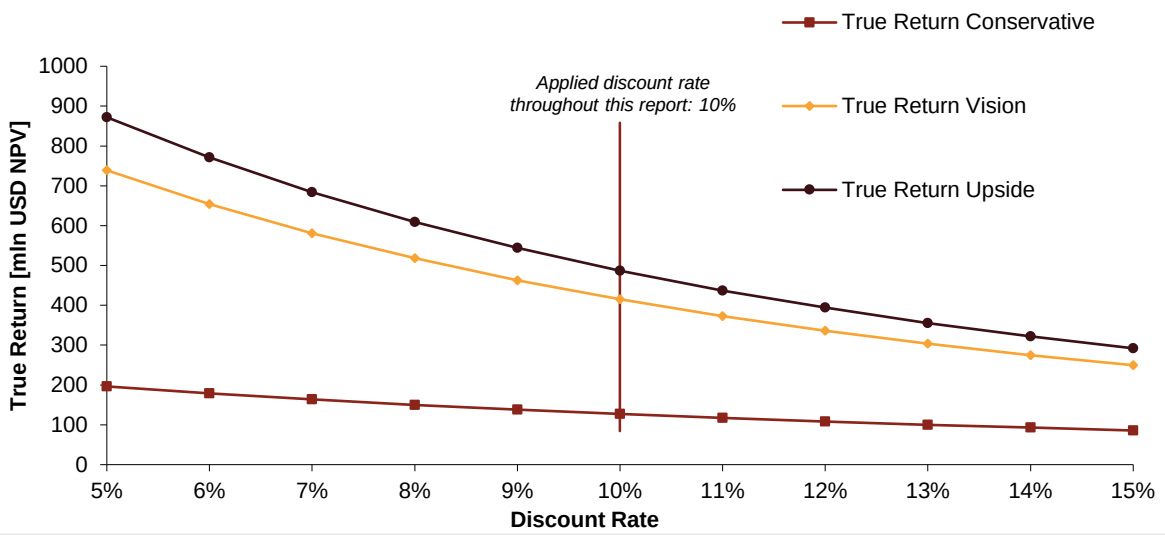
Sensitivity analysis of the discount rate

Discount Rate Sensitivity

Objective	Discount Rate Sensitivity

Sensitivity Analysis



Key insights / messages

The sensitivity analysis provides insights on the effect of varying the discount rate. The outcomes in this report are based on a discount rate of 10%.

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		Discount rate		
		5%	10%	15%
True return in (USD mln.)	Conservative	196	**127**	86
	Vision	739	**415**	250
	Upside	872	**487**	292

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Sustainable Development Goals

Commonland's large-scale landscape restoration approach directly contributes to achieving Sustainable Development Goals

Local agricultural production becomes more resilient and diversified.

Water quality and availability is improved through enhanced water retention and decreased use of pesticide and fertilizer.

Regenerative agriculture enables more sustainable ways of producing food and other products.

Landscapes with marine and wetland ecosystems are actively restored. Improving aquatic biodiversity, water quality and availability are improved.

Women have an important position as they cultivate most small holder land, increasing their influence in society.

Jobs and companies are created in several sectors (e.g. agriculture, tourism), which improves the local economy.

The ecological foundation is actively restored, capturing carbon and combating natural emissions.

Land degradation is reversed, holistically improving biodiversity (including wildlife and native species).

Creating partnerships to realize large-scale landscape restoration.

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Results with loan from investors to farmers

Results including loan from private investors to farmers

For farmers, it could be difficult to fund 40% of the total required funding. Therefore, an analysis was made how the results would look like if private investors would provide a loan to farmers with an interest of 7%. The loan equals to 35% of the total funding of the landscape. As a result, farmers would invest the remaining 5%.

Funder group:	**Governments**			**Private investors**			**Farmers**			**Philanthropists**
Funding provided (% of total)	45%			10% +35% loan = 45%			40% - 35% loan = 5%			5%
Scenario:	Conser -vative	Vision	Upside	Conser -vative	Vision	Upside	Conser -vative	Vision	Upside	All three scenarios
True returns (USD mln. NPV)	9	82	100	1	12	17	88	287	332	N/A
Internal Rate of Return (IRR)[2]	NM.[3]	NM.[3]	NM.[3]	8,3%[4]	8,2%[4]	8,8%[4]	NM.[3]	NM.[3]	NM.[3]	N/A
Key benefits	• Restoration of landscapes (water retention, soil quality) • Economic growth (new jobs & businesses, taxes)			• 2,5% interest from almond trading • 7% interest (loan to farmers)			• More stable income • Higher revenues, from yield and price premium of regenerative crops			• Restoration of landscapes • Carbon sequestration

1) Pollination increasing crop yield has been used as proxy for the return of biodiversity.
2) IRRs are computed based on non-discounted cash flows and only include financial returns, other additional benefits included in the report are not considered in the IRRs.
3) IRR's are not meaningful / cannot be calculated.
4) IRR's are calculated, however because of the spread in financing needed and spread of returns, they should be interpreted together with other information such as NPV results.

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Disclaimer

Disclaimer

The results in this document, are based on financial projections of the interventions by Commonland. Our work was limited to the matters set out in the contract between KPMG Advisory N.V. and Commonland, and accordingly did not include, for the avoidance of doubt, any confirmation or assessment of the commercial merits, technical feasibility or compliance with applicable legislation or regulation, or the factual accuracy of the input data and the suitability, validity or completeness of the underlying assumptions. Commonland has satisfied itself that the results are constructed in such a way as to materially meets their objectives.

KPMG has not independently verified any of the information contained in this document. KPMG nor affiliated partnerships or corporate bodies, make any representation or warranty, express or implied, as to the accuracy, reasonableness or completeness of the information contained in this report. The report includes certain statements, estimates and projections with respect to the anticipated future performance of Commonland in Spain. Such statements, estimates and projections are based on assumptions provided by Commonland, which may or may not prove to be correct and for which Commonland will be responsible.

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