

# The Higher Ground Foundation



To create a future where the best responses to climate change are the choices the world wants to make.



# Overview

1. Introduction to The Higher Ground Foundation
2. Climate Impacts and Adaptation
3. Why VRCs™? What is a VRC?
4. VRCs in Action
5. What's Next for Higher Ground



# 1. Introduction to The Higher Ground Foundation

## 1. Introduction to The Higher Ground Foundation



# 1. Introduction to The Higher Ground Foundation

Diverse team encouraging climate adaptation through a credit instrument and governance regime that decisionmakers can trust

## REQUIRES:

Developing/applying  
quantitative and qualitative  
principles and approaches

Encouraging improved  
decision making: for  
target setting, evaluation,  
and incentivizing

Testing through pilot  
projects in diverse,  
climatically vulnerable  
systems



# 1. Introduction to The Higher Ground Foundation



Central to the aim of The Higher Ground Foundation is introducing the climate  
Vulnerability Reduction Credit (VRC™)



## 2. Climate Impacts and Adaptation

## 2. Climate Impacts and Adaptation





LANDSLIDES



# PROJECT EXAMPLES

FLOODING



AGRICULTURE



HEALTH



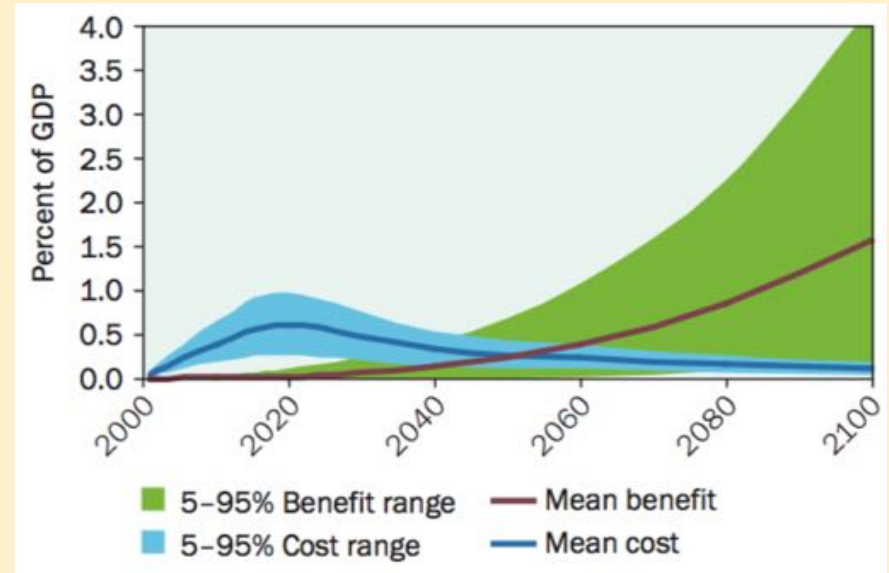
## 2. Climate Impacts and Adaptation

### Adaptation benefits outweigh costs

#### SE Asia Coastal Protection:

By 2100:

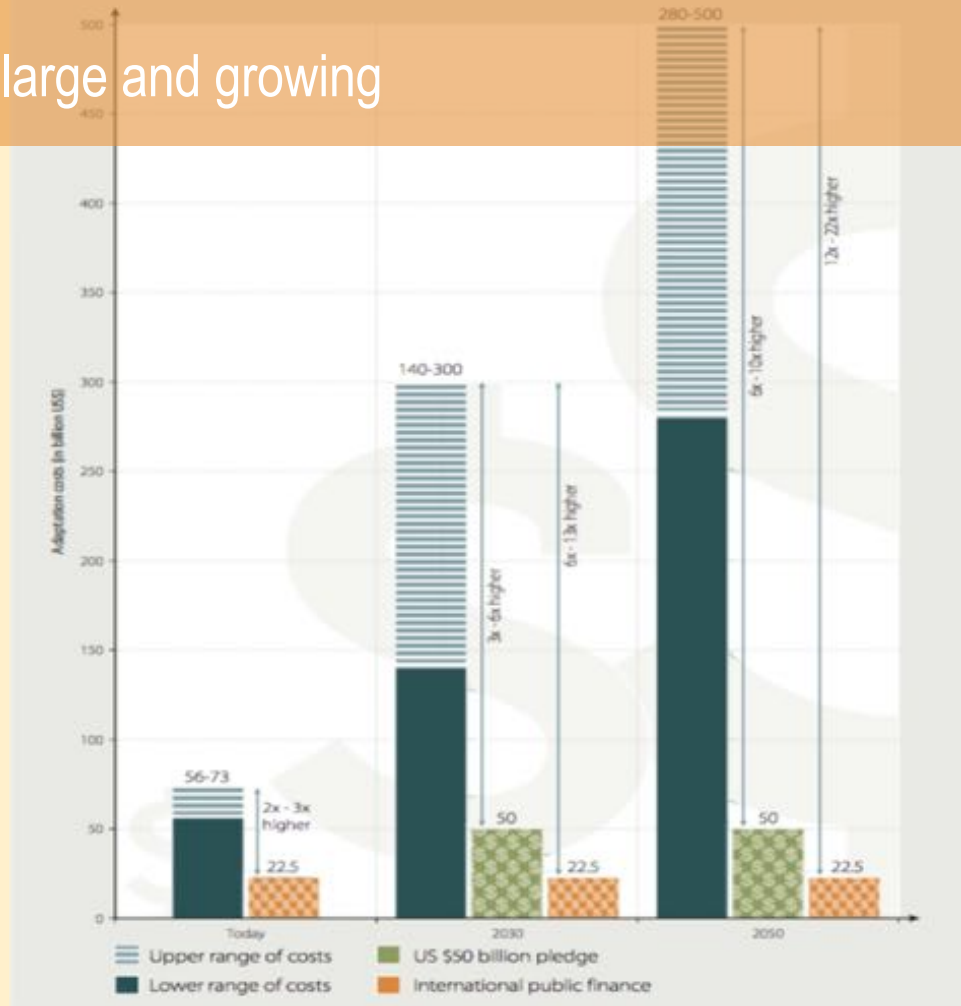
- Benefit = 1.9 % of GDP
- Cost = 0.2%



Source: *The Economics of Climate Change in Southeast Asia - Regional Review, 2009*, Asian Development Bank



# Adaptation finance gap is large and growing



## 2. Climate Impacts and Adaptation

### There are many challenges for Climate Adaptation

- Inadequate **funds and incentives** for behavioural change
- **Comparability** of actions: are funds and policies going for maximum climate vulnerability reduction?
- Identifying **good adaptation practices** and **infrastructure**
- Lack of **robust, dynamic, whole-system approaches** to developing baselines, monitoring, and evaluation
- Maintaining the **sustainability** of vulnerability reduction measures

### 3. Why VRCs? What is a VRC?

## 3. Why VRCs? What is a VRC?



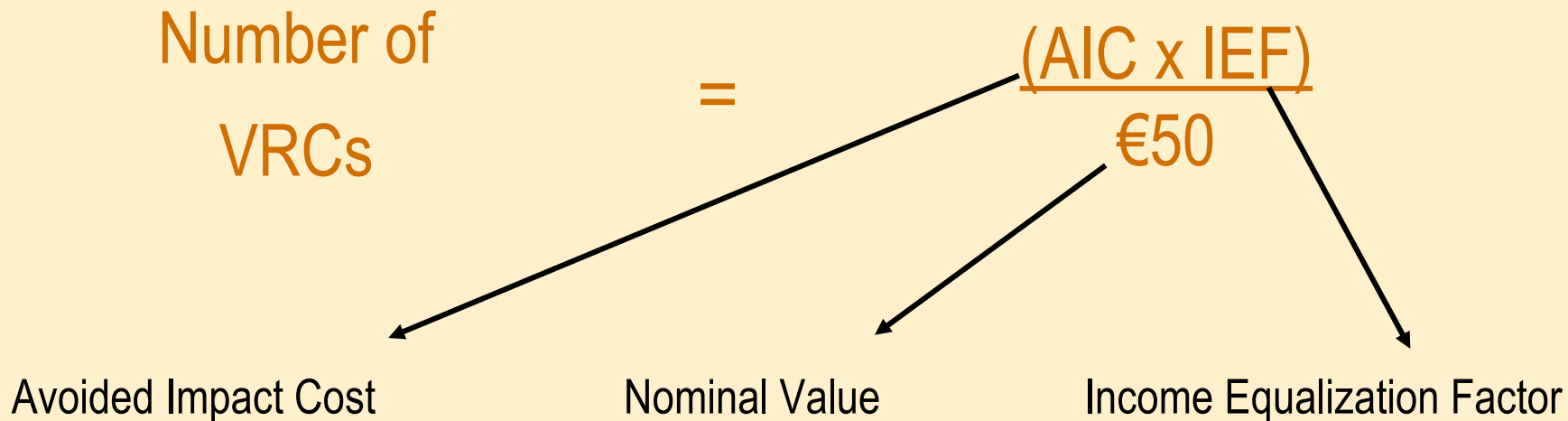
### 3. Why VRCs? What is a VRC?

€ 50 worth of income adjusted avoided impact costs

$$\text{VRC} = \text{€}50(\text{AIC}_{\text{IEF}})$$

### 3. Why VRCs? What is a VRC?

€ 50 worth of income adjusted avoided impact costs



### 3. Why VRCs? What is a VRC?

#### How VRCs are relevant?

VRCs provide a trusted means of exchange enabling their purchasers (eg government/ NGOs/ private investors) to provide funding for climate adaptation projects with knowledge of the effectiveness that the return on that investment is likely to bring to communities in terms of mitigating climate change effects.

VRCs enable confidence in the sustained effectiveness of this return (or vulnerability reduction) through continuous monitoring and third-party verification for crediting, and periodic revisiting of the project baseline over the lifetime of the project/investment.



### 3. Why VRCs? What is a VRC?

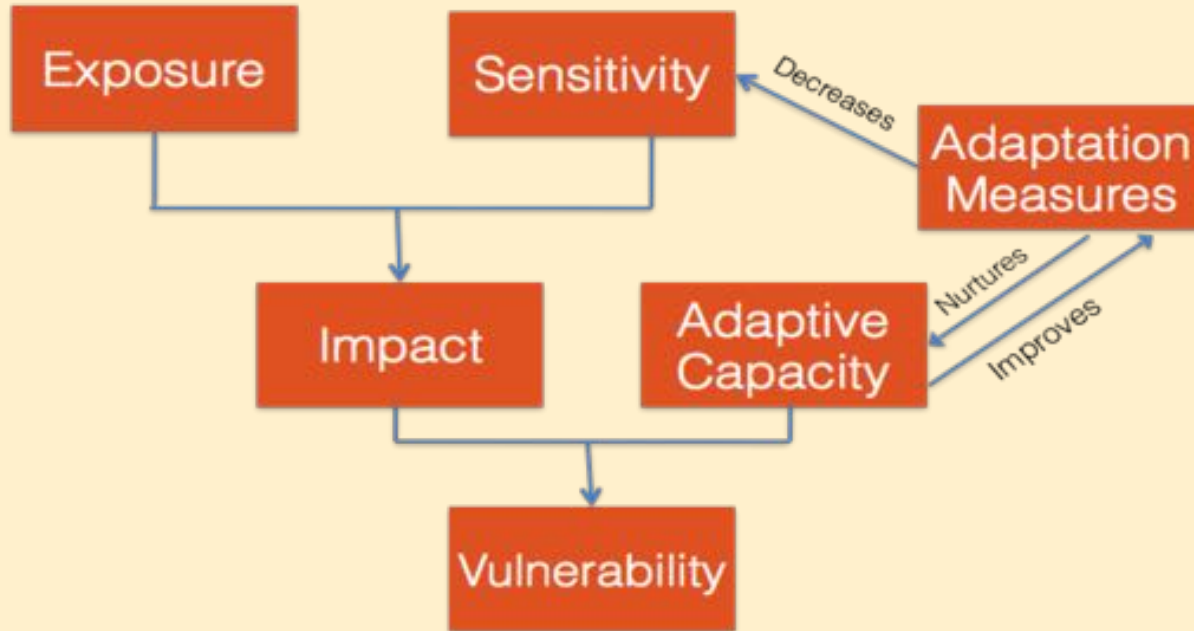


#### How are VRCs relevant? Specific Approaches

- Use VRCs to assess alternative technical options for different sectors
  - Able to compare across sectors and integrate systems - not just stressors
  - Vulnerability Reduction Project Manager (VRPM™) integrations for VRC methodologies to deploy specific technologies
- Policies and planning
  - Targets set in VRCs: results based, fungible, consistent standard across sectors, project types
  - Finance: pricing VRCs = revenue stream for leveraging

### 3. Why VRCs? What is a VRC?

What does vulnerability look like?

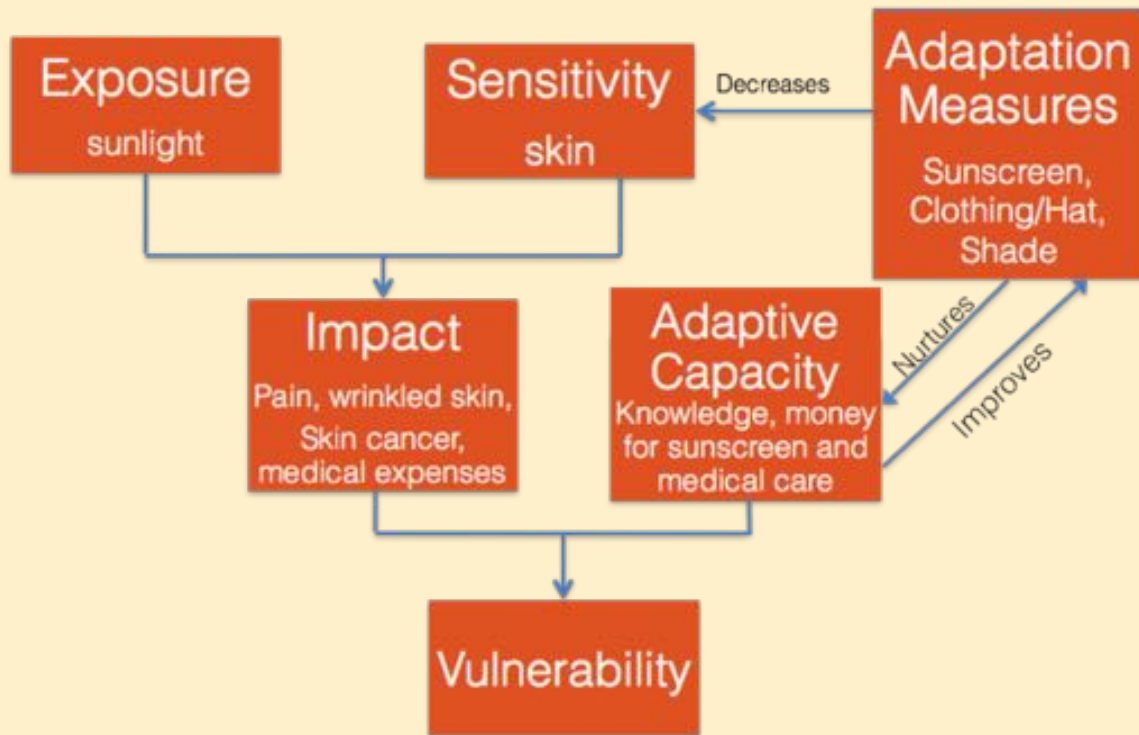


### 3. Why VRCs? What is a VRC?

Vulnerability is a function of exposure, sensitivity, and adaptive capacity.



### 3. Why VRCs? What is a VRC?



### 3. Why VRCs? What is a VRC?

#### The benefits of Vulnerability Reduction Credits: decision making confidence

- Independent, fungible mechanism that:
  - Embeds a **systemic approach** and embraces **dynamic futures**
  - Offers a **framework** for evaluating, prioritising investments, incentivising adaptation, and financing projects
  - Encourages **innovation** and **creativity**
  - Is a **“pro-poor”** means of engaging directly in adaptation support regimes
  - Embraces **sustainable adaptation**, as credits are awarded for actions over programme/project lifetime

### 3. Why VRCs? What is a VRC?

## What do Vulnerability Reduction Credits look like?





### 3. Why VRCs? What is a VRC?

At the heart of the VRC premise:

Human vulnerability is more important than protecting assets

Economic cost/benefits can be a proxy for human vulnerability

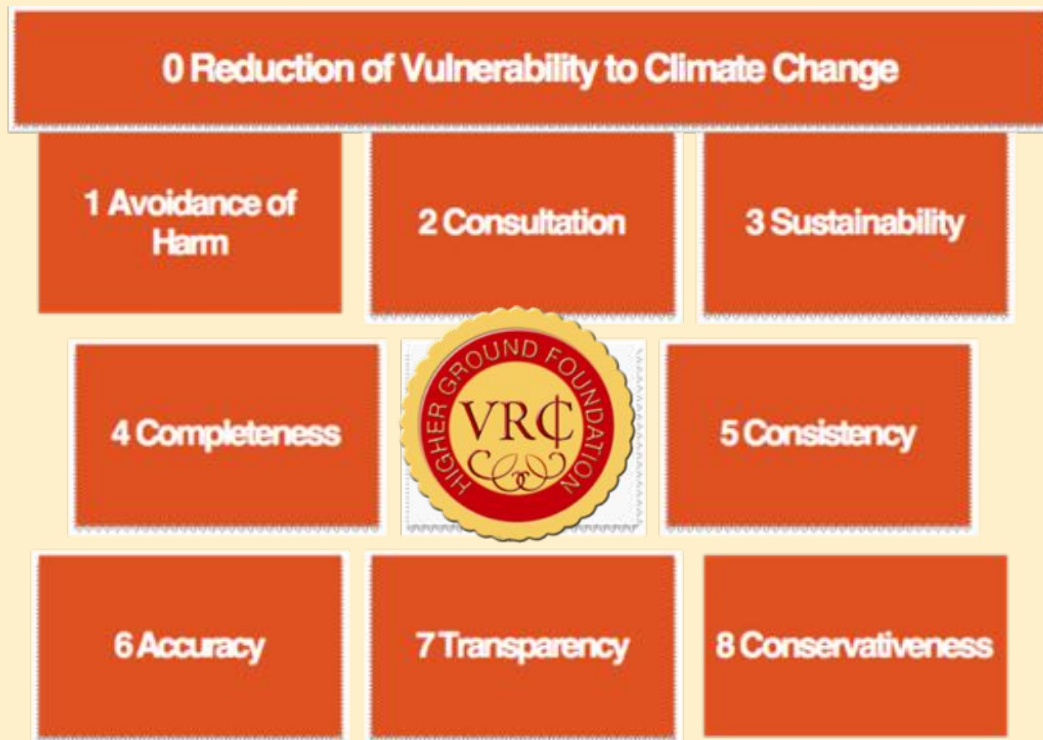
Loss and damage can be equalised for poorer communities by factoring in per capita income

Economic well-being  
≠  
human well-being

VRCs can be used in conjunction with other impact/evaluation methodologies

### 3. Why VRCs? What is a VRC?

Standard  
Framework  
Principles



# Beyond a Metric: VRC Standard Framework



## Vulnerability Reduction Credit (VRC™) Standard Framework

V1.1 (March 2018)

1

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# Beyond a Metric: VRC Standard Framework

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## 0.1 Terminology

### Notes:

When the Framework does not define a term or acronym, the IPCC's Fifth Assessment Report, 2<sup>nd</sup> Working Group glossary may be referenced at:

[http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-AnnexII\\_FINAL.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-AnnexII_FINAL.pdf)

If in the future the Framework is translated into other languages, the legal version shall remain with the original English language version.

### 3. Why VRCs? What is a VRC?

#### Potential Value-Added

<b>Uses</b>	<b>Benefits</b>
Monitoring and evaluation tool	<i>Transparent standard to evaluate a project's contribution to climate vulnerability reduction</i>
Traded/retired credit to leverage finance	<i>Mechanism to support and demonstrate support of adaptation projects, encourages sustainability</i>
International/Domestic policy target setting	<i>Targets set based on transparent, verified results</i>
Rating instrument/investment parameter	<i>Tool to show vulnerability of sovereign or company</i>

HGF Approved  
Methodology +  
System and Project  
Details

VRC  
PROJECT  
PROCESS

Design/Project Development

Local Stakeholder Consultation

Validation by Auditor

HGF Registration

Implementation

Monitoring

Verification by Auditor

HGF Credit Issuance

10-Year Revalidation



## 4. VRCs in Action

## 4. VRCs in Action



## 4. VRCs in Action



# FLOOD DAMAGE ADAPTATION

## A Project Process Example



TIME

# Project Supporter

INTEREST  
IN VRCS  
600,000 VRC  
DEMAND

IDENTIFIES  
PROJECT

FORWARD  
PURCHASE  
AGREEMENT

£5/VRC AGREED

VRCS BOUGHT

£3,000,000 PAID

PROJECT BRINGS  
REAL RESULTS TO  
VULNERABLE  
COMMUNITIES

# HGF

PROJECT REVIEW  
REGISTRATION

REG FEE = £10,000

VRCS AWARDED

ISSUE FEE = £20,000

# Vulnerability Reduction Project

PREPARE PROJECT DESIGN  
DOCUMENT, START TALKING  
TO POTENTIAL VRC BUYERS

THIS COSTS £100,000  
INCLUDING 3rd PARTY  
VALIDATION, MONEY  
PAID BY DEVELOPER

PROJECT IMPLEMENTATION AND  
MONITORING OF VULNERABILITY  
REDUCTION, 3rd PARTY VERIFICATION  
AND SUBMISSION TO HGF

£1.5M YEAR ONE CAPEX,  
£75,000/YEAR O AND M;  
£10,000 FOR 3rd PARTY  
VERIFICATION

COMMUNITIES  
BENEFIT FROM FLOOD  
VULNERABILITY  
REDUCTION EFFORTS

REDUCED FLOOD IMPACTS  
REGAINED AT 20 YEAR  
INVESTMENT VALUE = NPV  
OF £1.27M AND IRR = 18%  
(unleveraged)

COMMUNITIES FACE  
FLOOD DAMAGE

£1.27M DISCOUNTED  
OVER 20 YEARS

FORWARD SALES  
AGREEMENT

£5/VRC AGREED

VRCS SOLD

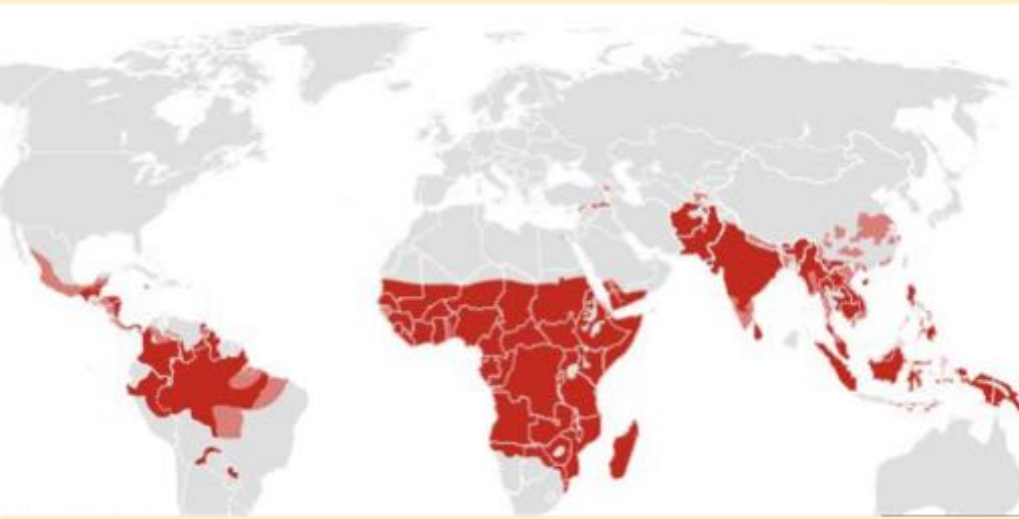
£3,000,000 RECEIVED

PROJECT INTERVENTIONS  
IDENTIFIED

COMMUNITY/PROJECT  
SECURES FINANCE  
BASED ON CONTRACT

£1,800,000 LOAN

## 4. VRCs in Action



# MALARIA PREVENTION

## A VRC Calculation Example

## 4. VRCs in Action

“Quantifying and valuing these effects is possible, expressing them in monetary terms to capture the economic, social and environmental costs borne by society as a whole.”

From: Ebi, K, et al, 2017. “Health Risks and Costs of Climate Variability and Change,” Chapter 8 in *Injury Prevention and Environmental Health, Volume 7 of Disease Control Priorities, Third Edition*, Eds. Jamison, D.T., et al., World Bank. P. 159.

# 4. VRCs in Action

## Health

### Impacts

- Heat waves, fires, bringing injury, disease and death
- Undernutrition through diminished food production
- Food/water/vector borne disease

### Adaptations

- Disaster preparedness and response
- Climate-resilient agriculture
- Water and sanitation
- Essential health care: eg vaccination, child health services



## 4. VRCs in Action

Impact cost factors relevant for health climate adaptations.

A whole system perspective is important

- E.g. systemic, heterogeneous climate hazards like flooding and drought have direct impacts: damage to infrastructure, livelihoods and agriculture, direct and indirect health impacts

Direct health related impact cost categories:

- Resource costs: medical treatment costs
- Opportunity costs: lost productivity
- Welfare costs or disutility: pain, suffering, concern, disruption to family/other



## 4. VRCs in Action

### Example: Malaria Prevention - baseline scenario

- A mountainous region in Upper Vectorovia
- Impacted community per capita income \$2000/year
  - (ie Income Equalisation Factor (IEF) = 2)
- Malaria has spread from lowlands in the past decade from zero to 2,300 prevalence
- Other medical/hygiene circumstances have not changed materially
- Temperature and precipitation is increasing
  - IPCC RCP 4.5 climate downscaling shows trends are expected to continue/accelerate





## 4. VRCs in Action

### Example: Malaria Prevention - the project

#### Aims to reduce vulnerability to climate change:

- Insecticide-treated bed nets
- More effective case management
- Environmental and social changes
  - Reduced water trapping
  - Sanitation measures
  - Public education
  - Collaboration (between health services, school district and regional administration/municipal public works, sanitation departments)



**Total anticipated project costs (2019 - 2028): €10 million**

## 4. VRCs in Action

### Example: Malaria Prevention - the costs of not acting



#### Impact Cost Factors

- Health care costs of treatment
  - e.g. 10 year weighted average (€400/case) x (6,400 cases) = €2.56m/year
- Lost labour productivity
  - e.g. weighted average daily wage (€40) x (6,400 cases/year) x (21 days lost/case/year) = €5.38m/year
  - Well-being related impact costs (using willingness to pay or accepted compensation)

Does not include costs of adaptation measures for purposes of VRC calculations

VRCs are not net cost/benefits of a project; they are avoided net impact costs without considering project costs

# 4. VRCs in Action

## Example: Malaria Prevention - the VRC calculation (2019-2028)



### Impact Costs

€80m (average €8m/year)

### Avoided Impact Costs (AIC)

€40m (average €4m/year)

### Income Equalisation Factor (IEF)

2

### Anticipated VRCs Generated/year

No. VRCs = **(AIC x IEF)/€50**

= **(€4m x 2)/€50**

= 160,000 VRCs per year

### Monitoring Report (for 2019)

- Based on project document monitoring guidelines, **80%** of expected activities verified (e.g. not all getting deployed, etc.)

Actual Annual VRCs issued = 80% x 160,000

= 128,000 VRCs issued for 2019

## 4. VRCs in Action

### Example: Malaria Prevention - the economics



For 2019 - 2028

Project Costs = €10 million

VRCs Generated (@ 80% efficiency) = 1.28 million

Avoided Impact Costs: €40m x 80% efficiency = €32 million

So, in this case, VRCs are earned at a cost of €7.81 per VRC.

Per definition, each VRC is worth €50 of adjusted avoided impact cost. In this case with an IEF of 2, each VRC is worth €25 of avoided impact costs.

# 4. VRCs in Action

## Summary of VRCs

- € 50 worth of income adjusted avoided impact costs
- VRCs offer a **whole-systems approach** to encourage better climate adaptations with many applicable uses
- The approach is underpinned by a robust **Standard Framework** with **human vulnerability** reduction at its heart
- The **whole span of adaptation interventions** are a subject of interest, as VRCs apply where cost : benefit analysis tools apply

## 5. What's Next For Higher Ground

# 5. What's Next for Higher Ground



# 5. What's Next For Higher Ground

## Next Steps for The Higher Ground Foundation



We have launched our **VRC Standard Framework** and **Pilot Implementation and Partnerships Phase (PIPP)** at COP-23 in November 2017

- We are focused on partnering with relevant institutions and experts
- We are piloting VRC approaches in different sectors with different adaptation projects

# For more information and to discuss:

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**The Higher Ground Foundation**

- stand up to climate change

