The HIA4SD Project

Health impact assessment for engaging natural resource extraction projects in sustainable development in producer regions

Swiss Programme for Research on Global Issues for Development

PD Dr. Mirko WINKLER

HIA4SD Project multi-stakeholder meeting
Accra, Ghana
17 August 2021

IRSS

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SUSTAINABLE DEVELOPMENT GOALS

Introduction

- **Health is a cross-cutting issue of the 2030 SDG agenda**
  - Health outcomes
  - Determinants of health

33 health-related SDG indicators (total 230)
(GBD 2015 SDG Collaborators, Lancet, 2016)

- **By minimising risks and maximising opportunities:**
  - **Win** (local communities) **– win** (countries) **– win** (projects)
    - ➢ **Smart planning → prospective impact assessment**

Introduction

- **Environmental impact assessment (EIA) common practice**
- **In Africa, not a single country is actively promoting HIA**
- **Health included under EIA**
  - Strong focus on environmental of health
  - Poor methodological guidance
  - Weak inclusion of health sector
  - Weak evidence-base

Countries/regions promoting HIA *(Winkler et al. Bull WHO (2013))*

Resource extraction projects

Public sector

Overarching objective

- **Inform and facilitate a policy dialogue that will strengthen the application of impact assessment as a regulatory mechanism**

The future of impact assessment

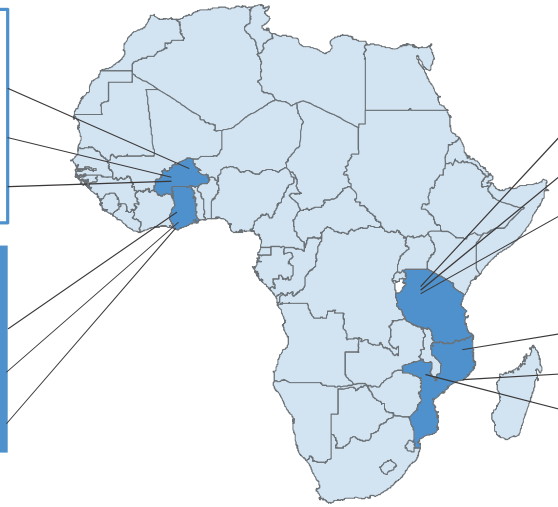
Integrated impact assessments	Intersectoral collaboration
Policies and methodological guidelines that embrace the SDG 2030 agenda	

Methodology

- **Diverse research portfolio:**
  - Multidisciplinarity and transdisciplinarity: epidemiology/public health, political sciences
  - Qualitative, quantitative and ”mixed-methods” approaches
  - Research at the regional (sub-Saharan Africa), national (project countries) and local (three active mining areas per country) levels

Burkina Faso
- Nordgold Mine (Bissa)
- Roxgold Mine (Bagassi)
- Endeavour Mine (Houndé)

Ghana
- **Newmont Ahafo Gold Mine (Asutifi)**
- **Tarkwa Manganese Mine**
- **Edikan Gold Mine (Ayanfuri)**



Tanzania
- **Geita Gold Mine**
- **Bulyanhulu Gold Mine**
- **Buzwagi Gold Mine**

Mozambique
- Montepeuz Ruby Mine
- Kenmare Titanium Mine (Moma, Larde)
- Moatize Coal Mine

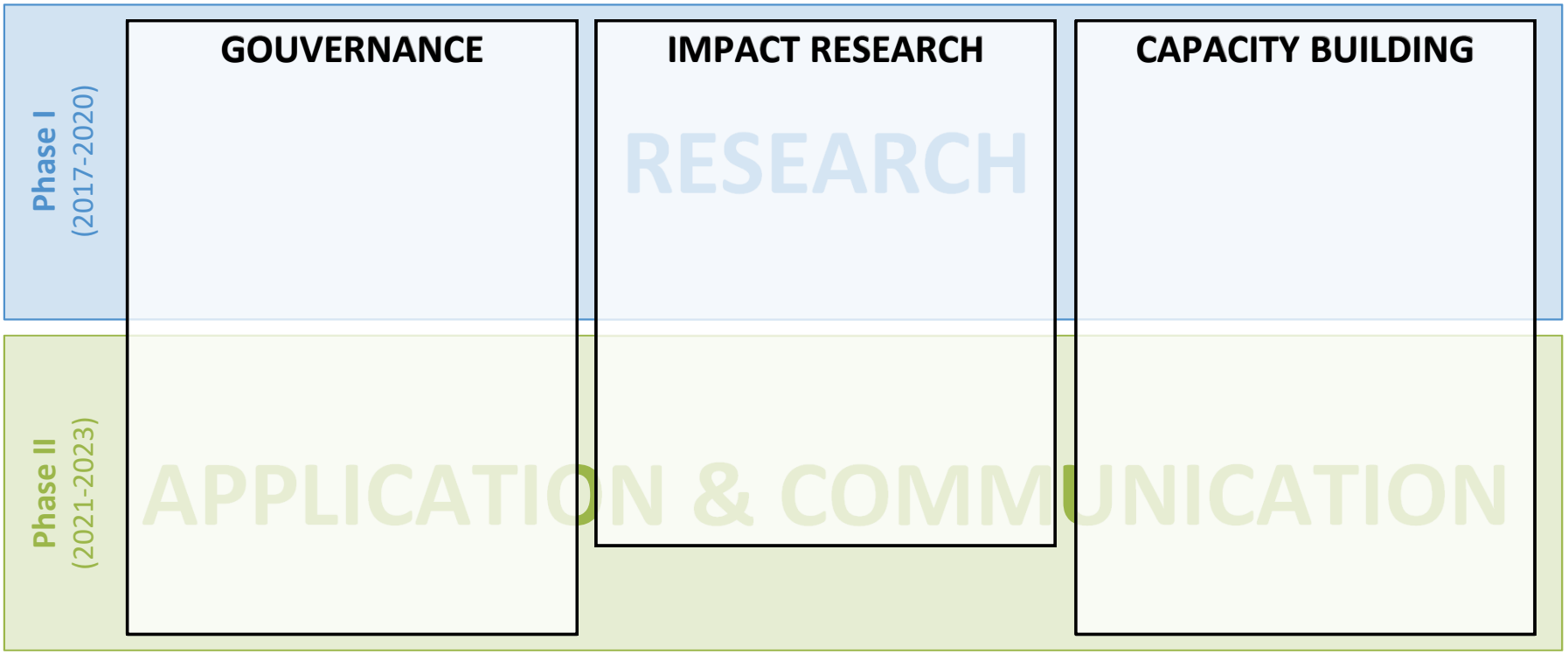
Organisation of the project

Phase I (2017-2020)

Phase II (2021-2023)

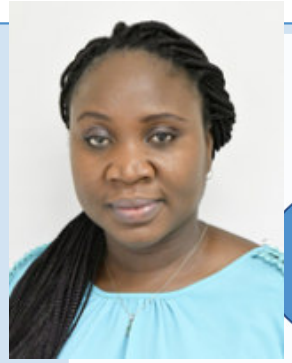
AP ON

Organisation of the project



Organisation of the project

Phase I
(2017-2020)



6 PhDs at the core of the research phase

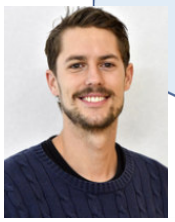
Health systems
Belinda Nimako
(Ghana)

Health economics
Hyacinthe Zabré
(Burkina Faso)

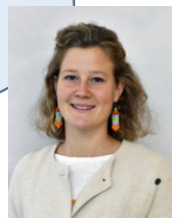
Child & Maternal health
Herminio Cossa
(Mozambique)

Morbidity & mortality
Isaac Lyatuu
(Tanzania)

Environmental determin. of health
Dominik Dietler
(Switzerland)



Social determinants of health
Andrea Leuenberger
(Switzerland)



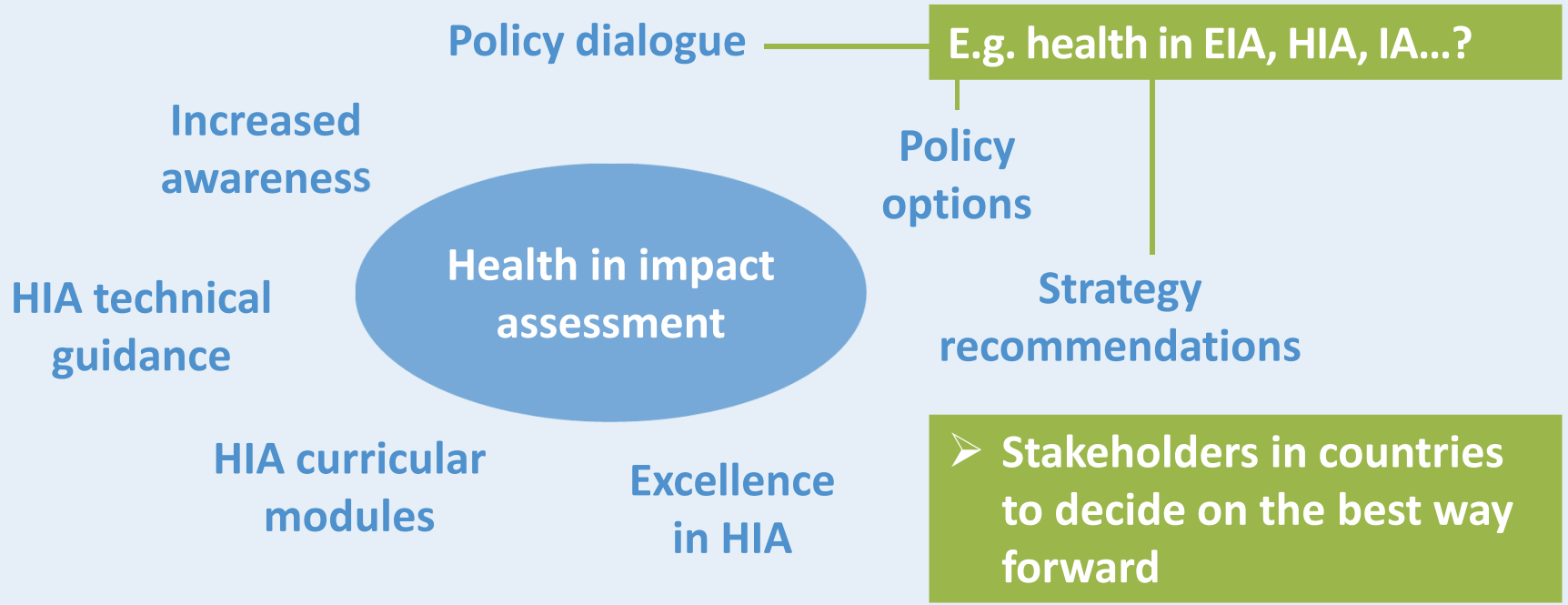
Organisation of the project

- **Dissemination of results at the national and local level**
- **Policy options and policy dialogue**
- **Teaching and training in health impact assessment** (post-graduate course and integration at universities)

Phase II (2021-2023)

APPLICATION & COMMUNICATION

Contributions of the project (in addition to scientific evidence)



HIA4SD Project: main findings

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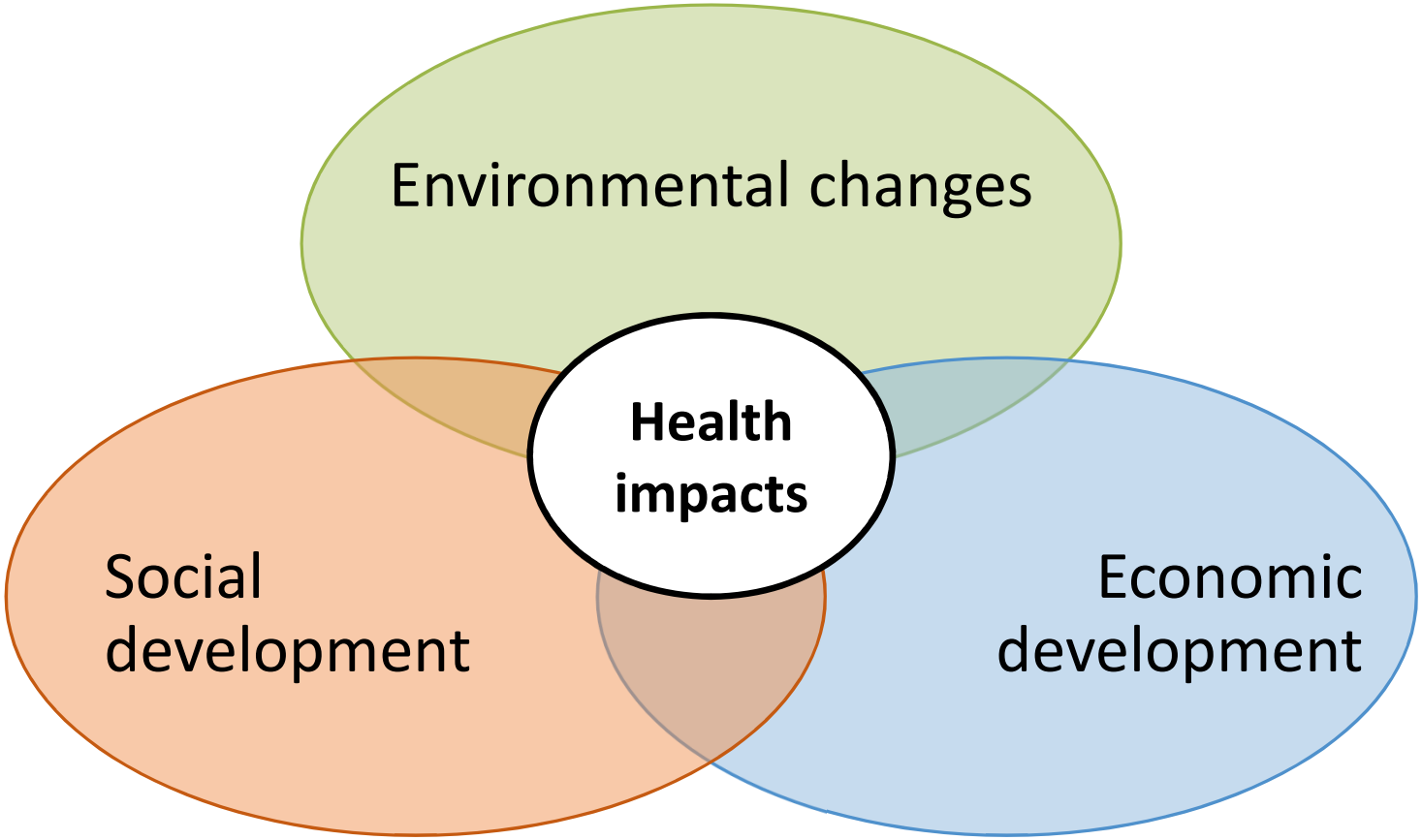
HIA4SD HEALTH IMPACT ASSESSMENT FOR SUSTAINABLE DEVELOPMENT


Environmental changes
Health impacts
Social development
Economic development

Environmental impacts

- **Water access & quality**

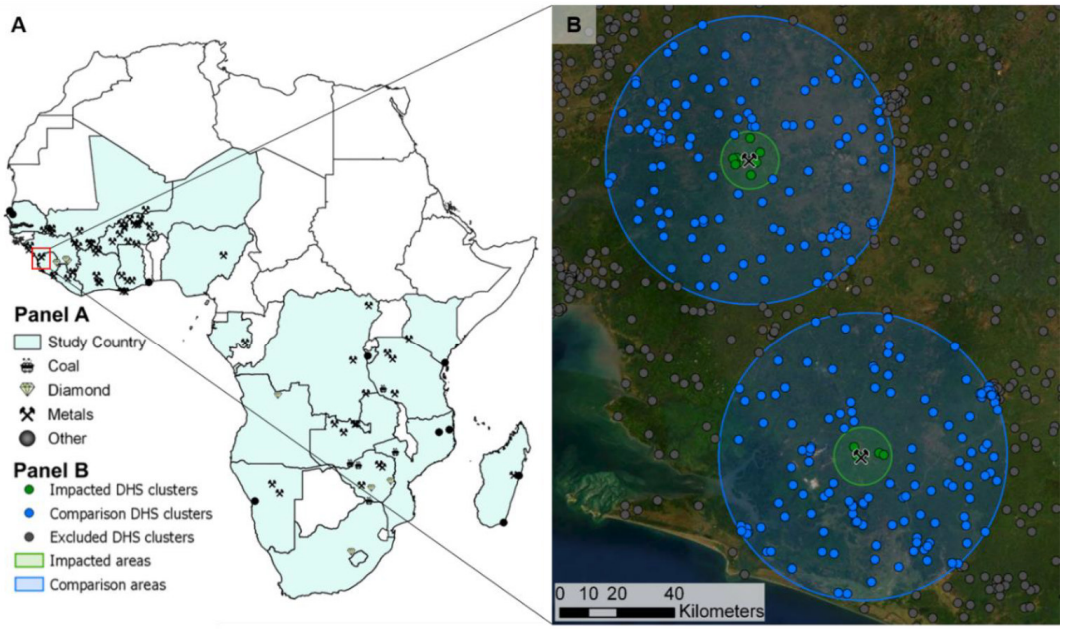


Figure 1. Spatial distribution of mines (panel A) and visualization of the selection of Demographic and Health Survey clusters (panel B). DHS: Demographic and Health Survey.

Included in the data analysis:

- **711 mines** from 27 African countries
- **189,992 households** located within 100 km of active mines

Source: Cossa et al. PLoS Medicine (under review)

Environmental impacts

- **Water access & quality**

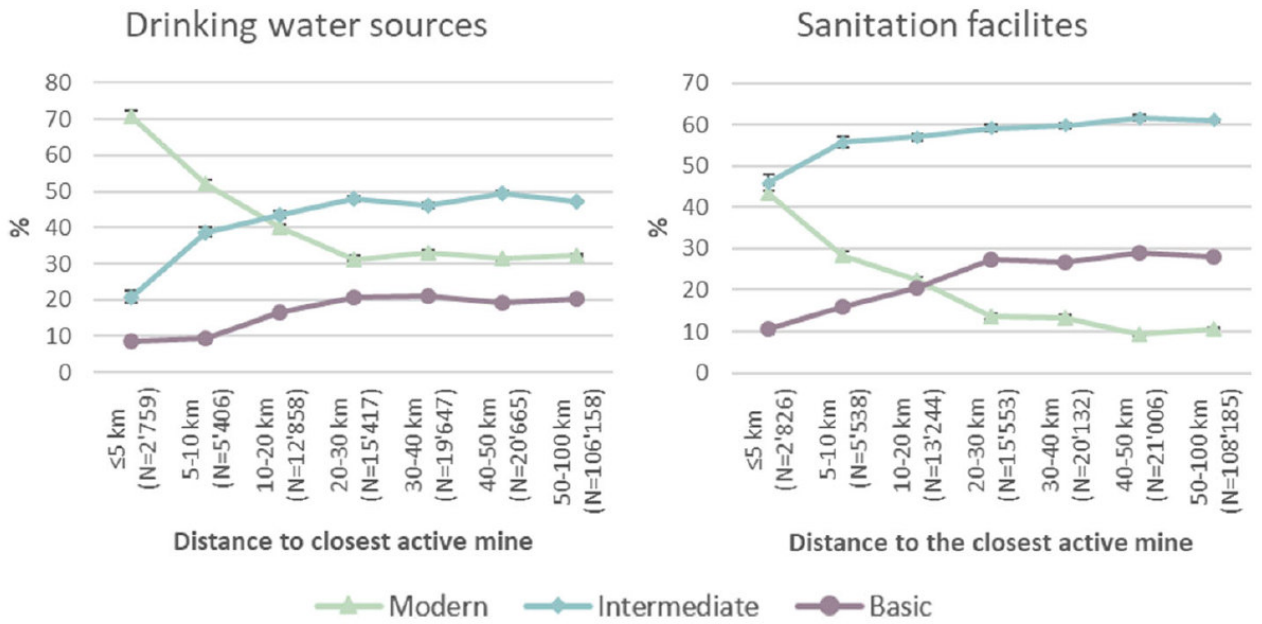


Fig. 2 Percentage of drinking water sources and sanitation facilities by distance to the closest active mine. Error bars show 95 % confidence intervals

Dietler *et al. Globalization and Health* (2021) 17:70
https://doi.org/10.1186/s12992-021-00723-2

Environmental changes

- **Water access & quality**
  - Communities in mining areas have better access to water & sanitation
  - Concerns about pollution of water sources around mines
- **Air pollution**
  - Dust often noticed as a major problem
- **Soil pollution**
  - Farmers particularly affected

- **Often both negative and positive impacts on the environment prevail**
- **Perceived impacts change over time**

Social development

- **Several contributions to the development of mining communities identified**
  - Improved access to water points
  - Improved quality of housing constructions
  - Decreased use of traditional cooking fuels
  - Better access to health facilities and schools
- **Wealthy households benefit more from improvements in infrastructures**
- **Social changes**
  - Sexual transactions with mine employees (e.g. early pregnancies)
  - Job opportunities not equally distributed

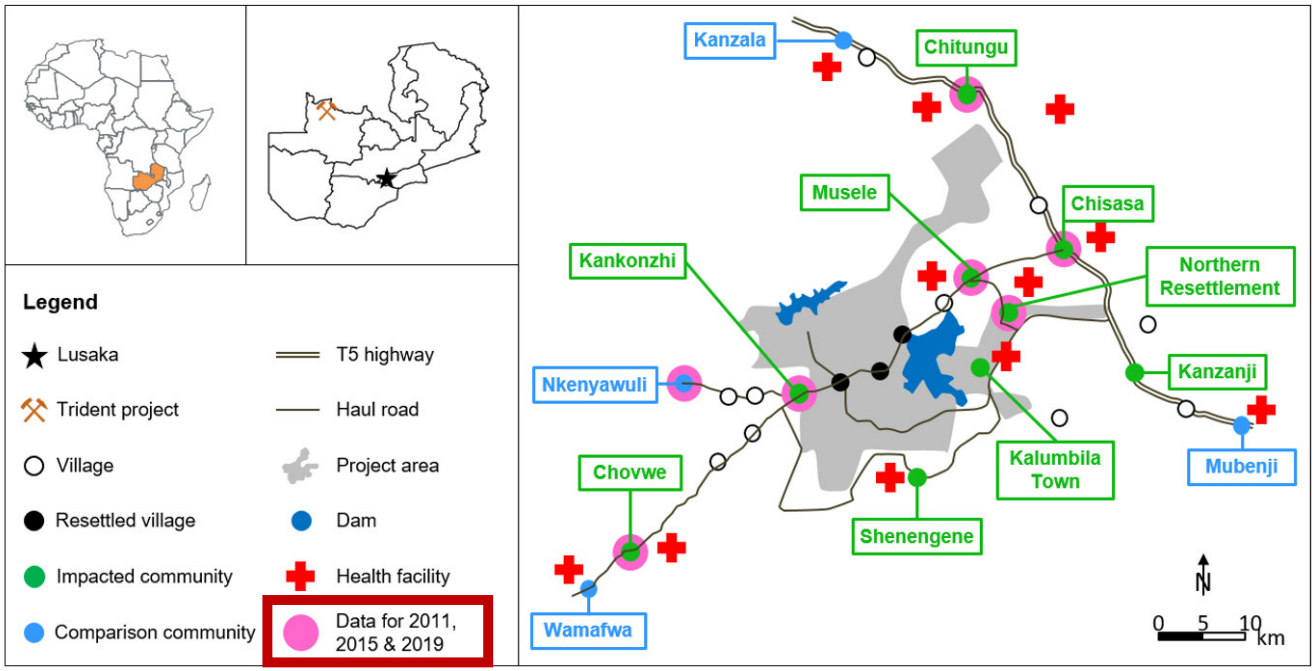
Economic development

- **Local job creation**
  - Direct employment by the mine
  - Indirect employment (catering, organization of events)

Economic development

- **Local job creation**

Study area and surveyed communities, Kalumbila district, Zambia (Knoblauch et al., 2020a)



Economic development

- **Local job creation**

Table 4: Changes of the mean wealth quintile (MWQ) in the study area (2011-2019)

	2011 survey		2019 survey		Change (2019-2011)
	HH	MWQ (SD) *(A)*	HH	MWQ (SD) *(B)*	*(B)-(A)*; (p-value)
Chisasa	58	1.88 (1.01)	66	3.59 (0.82)	+1.71 (<0.001)
Chitungu	30	2.03 (1.22)	32	2.75 (0.98)	+0.72 (0.01)
Chovwe	63	1.67 (0.99)	32	2.97 (0.54)	+1.30 (<0.001)
Kankonzhi	39	1.85 (0.96)	32	3.41 (0.76)	+1.56 (<0.001)
Musele	29	1.72 (1.03)	65	3.35 (0.84)	+1.63 (<0.001)
Wanyinwa/NR	35	2.71 (1.27)	30	3.23 (0.50)	+0.52 (0.03)
Overall	**254**	**1.94 (1.10)**	**257**	**3.28 (0.82)**	**+1.35 (<0.001)**

Increase of 1.07 when compared to the regional average (North Western province)

Economic development

- **Local job creation**
  - Direct employment by the mine
  - Indirect employment (catering, organization of events)
- **In general, increase in socio-economic level**
- **Some groups may lose their livelihoods**

- **Especially men are employed by mines**
- **Women are disproportionately affected by negative impacts**

Health impacts

Negative impacts

- Sexually transmitted diseases (e.g. HIV)
- Respiratory diseases
- Diarrheal diseases
- Chronic diseases
- Mental Health
- Substance addiction

Extractive projects increase health equity gap

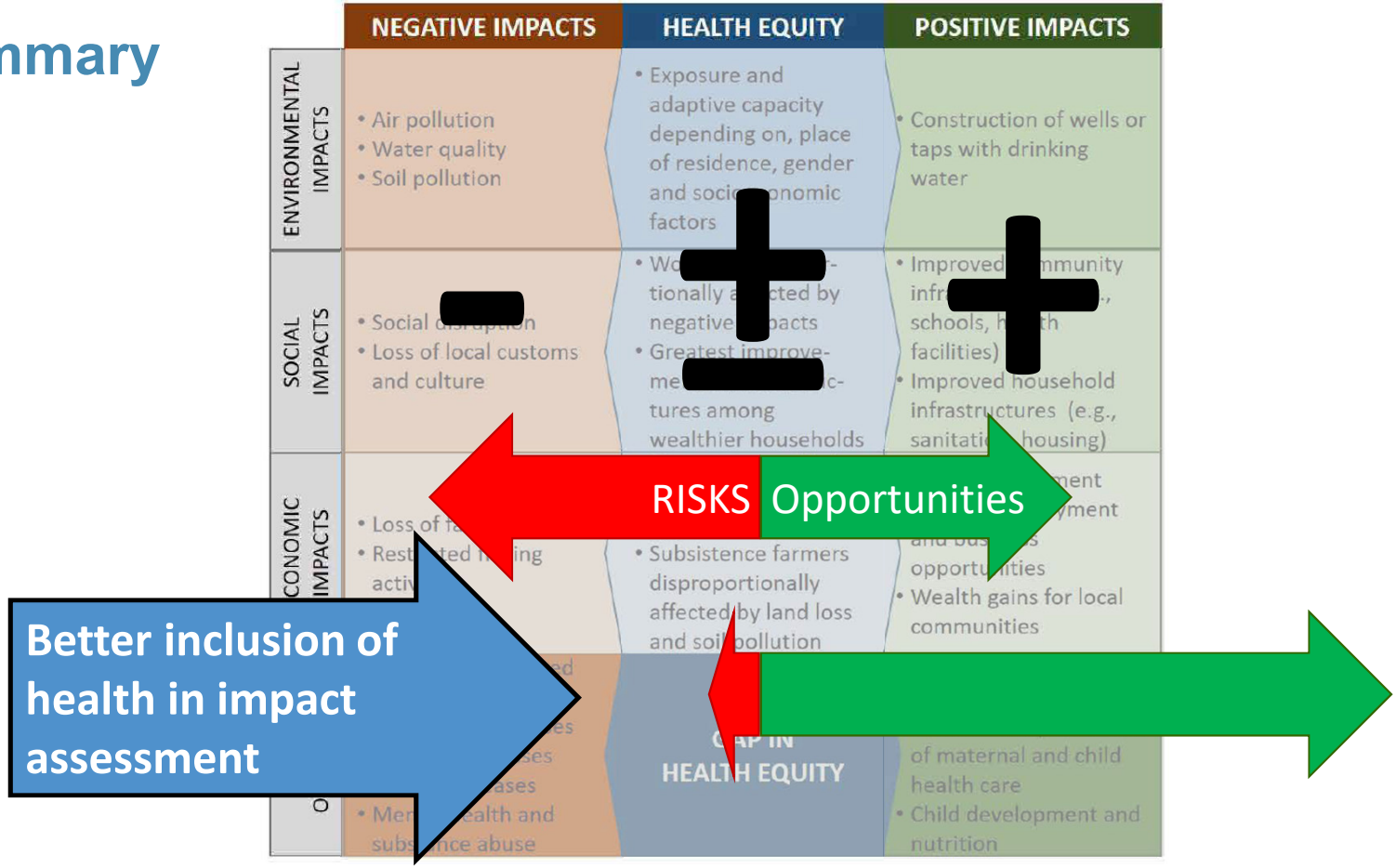
Positive impacts

- Reduced neonatal mortality
- Perceived improvement in maternal and child health care
- Child development and nutrition

Summary

	NEGATIVE IMPACTS	HEALTH EQUITY	POSITIVE IMPACTS
ENVIRONMENTAL IMPACTS	• Air pollution • Water quality • Soil pollution	• Exposure and adaptive capacity depending on, place of residence, gender and socioeconomic factors	• Construction of wells or taps with drinking water
SOCIAL IMPACTS	• Social disruption • Loss of local customs and culture	• Women disproportionally affected by negative impacts • Greatest improvements in infrastructures among wealthier households	• Improved community infrastructures (e.g., schools, health facilities) • Improved household infrastructures (e.g., sanitation, housing)
ECONOMIC IMPACTS	• Loss of farmland • Restricted fishing activities	• Men are more likely to benefit from job opportunities • Subsistence farmers disproportionally affected by land loss and soil pollution	• Direct employment • Indirect employment and business opportunities • Wealth gains for local communities
HEALTH OUTCOMES	• Sexually transmitted diseases (e.g. HIV) • Respiratory diseases • Diarrheal diseases • Chronic diseases • Mental health and substance abuse	GAP IN HEALTH EQUITY	• Reduction in neonatal mortality • Perceived improvement of maternal and child health care • Child development and nutrition

Summary



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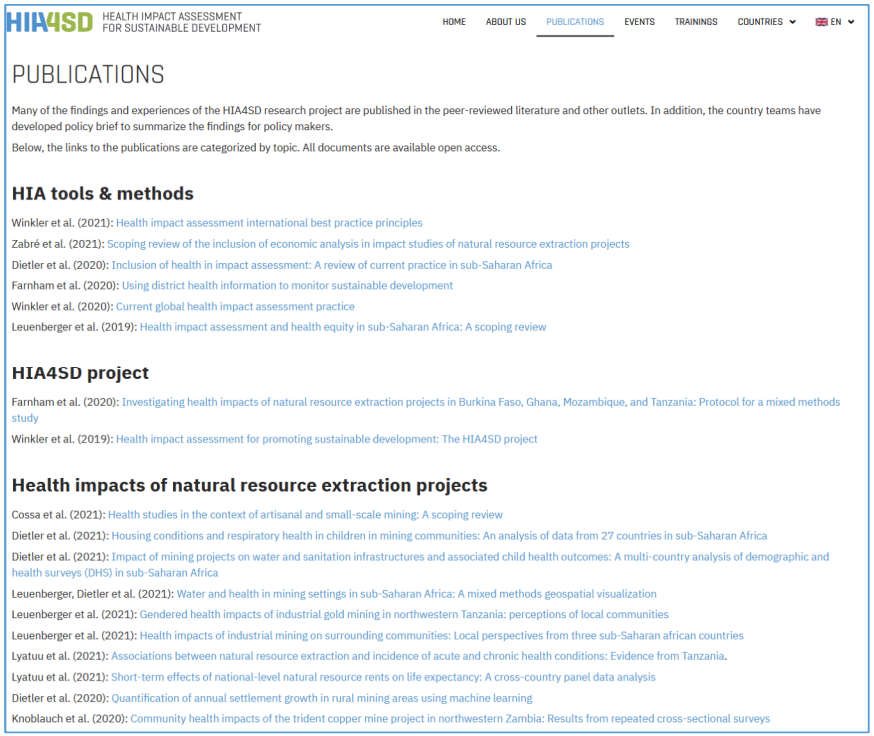
http://www.hia4sd.net



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Further information

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http://www.hia4sd.net

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