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Impact Assessment Methodology for NRW.BANK Social Bonds

Framework and Rationale

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on behalf of

NRW.BANK

Wuppertal Institut

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The current method paper represents version 3.3 and refers directly to the NRW.BANK Social Bond #2021-1. It is expected that a further update of this methodology will be made available in 2023.

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The paper at hand presents the principles and methods applied for the impact assessment of NRW.BANK Social Bonds. So far, no common methodology has been established for impact assessments of social impact bonds (SIBs). Guidelines, such as the Social Bond Principles by the International Market Association (ICMA, 2020), are currently mainly concerned with categorization and eligibility of proceeds as well as the certification by second party opinion (SPO) providers. It is also suggested that projects and measures are mapped to the Sustainable Development Goals (**all of which are already provided by NRW.BANK and its contractors**). However, impact qualification, quantification and reporting are still in its infancy.

1 Principles of NRW.Bank Social Bonds

Before deciding on a certain method, experts suggest starting with a holistic framework that describes the boundaries of the analysis, its process, the methods applied and the content to be reported (Ruff & Olsen, 2016).

1.1 System Boundaries

The NRW.BANK is the state development bank of the federal State of North Rhine-Westphalia (NRW) and as such a public agency. It manages refinancing and hands out development loans. Its Social Bond refinances investments into public and private institutions in NRW, ranging from the modernization of schools to stimuli into structurally weak regions. All inputs are therefore restricted to NRW and its effects are aimed to improve conditions in the federal State over the next couple of years. However, the outcome of the measures is not restricted to the State and could very well affect additional actors or regions in the long run.

1.2 Process

The NRW.BANK issues a bond by selecting loan programs that are in accordance with its sustainability guidelines as well as the ICMA Social Bond Principles. The SPO provider ISS ESG assesses the sustainability quality of the issuer and its social bond pool on a regular basis. The net proceeds will be allocated to either finance new eligible social expenditures or to refinance social projects whose disbursements occurred no earlier than 36 months prior to the issuance. The Wuppertal Institut (WI) has been asked to qualify, estimate, or quantify the direct and indirect social impacts or outcomes after the fact (ex post evaluation). The WI is independent in its evaluation and applies methods by its own discretion. The required data is provided by the NRW.BANK, publicly available or available for scientific purposes.

1.3 Update of the methodology

The paper at hand includes the first update of the methodology on impact logics and theory-based evaluations of NRW.BANK Social Bonds. Changes to the impact logic are mainly restricted to visuals (e.g., closer alignment of color coding to European energy-efficiency scheme) and the operationalization of hazards and rebounds. All four pathways were also updated in regard to the consistency of their language and their logic. For example, the desired outcome of stabilized rents from homeownership loans now explicitly stems from the availability of additional rental space, while the original impact pathway incorporated this effect indirectly.

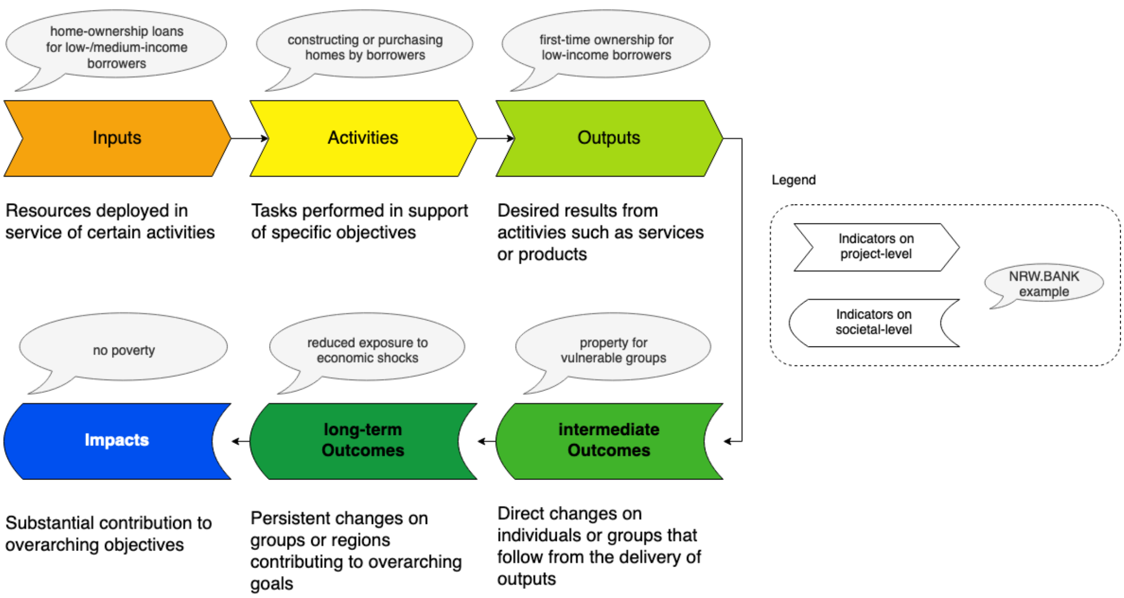
2 Method: Theory of Change

Theory of Change is a theory-based evaluation method that allows to evaluate measures that promote social change (the following information is largely based on Jackson, 2013; Taplin et al., 2013; Taplin & Clark, 2012). Its strength lies in its open design (tailored to the needs and perceived influence of the issuer), the definition of a *responsibility ceiling* and its ability to distinguish between *inputs* and *outputs* of measures as well as their *intermediate* and *long-term outcomes*. An ideal theory of change not only shows the impact of the institution that applies it, but also its interactions with other stakeholders and conditions along the cause-effect chain. For social impact assessments, it is a tool to identify and qualify indicators and a map that shows at which point these investments enable broader societal goals.

2.1 Outcome Pathways

The ToC defines impacts in an *outcome-pathway*. These *outcomes* represent changes in conditions, while *impacts* represent the ultimate goal of an institution or project. Usually, these impacts and outcomes cannot be achieved by the evaluated measure alone but require additional conditions and stakeholders. A ToC often starts at the top with the overarching goals of a project (*impacts*) and is then traced back to *long-term outcomes*, *intermediate outcomes*, *outputs, activities,* and *inputs*. Figure 1 shows the schematic of an outcome pathway and defines each step.

Figure 1: Outcome-pathway



Source: own compilation based on Jackson, 2016

2.2 Accountability Ceiling

It is also common to define a so-called *accountability ceiling*, which defines for which changes the institution holds itself accountable. For a bank, this can be restricted to the inputs as they represent loans, although defining loan conditions can also shift the accountability ceiling higher up to also cover activities and outputs (*outputs are currently assumed to be that ceiling*).

2.3 Narrative

Each outcome pathway is accompanied by a narrative, that explains the logic of the pathway and key assumptions. A narrative may include contextual and background information, especially in regard to the empiric evidence for its logic. The purpose of a narrative is to convey the theory quickly to others and to better understand how the elements of the pathway work as a whole.

2.4 Indicators

Indicators in a ToC are visible evidence of meeting goals and can involve qualitative as well as quantitative information. They are ideally developed before starting the process and built around specific monitoring targets in regard to the number of people reached, a threshold for what has to change and a timeframe by when the change needs to occur. For the methodology at hand, impacts are evaluated after the fact and based on the information provided. As such, they are activity-/output-/outcome-indicators that are quantitative but not attached to quantitative targets, thresholds, or timeframes. Any qualitative information on empirical evidence is covered by the narrative instead.

3 Indicator Classification for NRW.BANK Social Bonds

Indicators for Social Bonds measure or estimate desired activities, outputs and outcomes that can be traced back to the original inputs by the issuer. Ideally, these effects lead to a positive progression of the desired outcome. However, potential negative effects should be reported as well if known.

For the NRW.BANK Social Bond, indicators are classified according to their position in the outcome pathway and their type. They range from A to E, following the example of energy efficiency standards in the EU (see Table 1). The highest standard (A) is attributed to a measured effect (indicated with +) that is visible evidence for a desired long-term outcome. In opposition, lower standards are attributed to indicators that are restricted to activities (D, standard practice) or can only be estimated (indexed with 0 for baseline). The minimum for a quantitative indicator (E) is proof that a certain amount of money was delivered to the intended beneficiaries (usually covered by the SPO certification or the use-of-proceeds).

It is currently (2022) highly unlikely that any impact analysis would measure effects on A or B-level, as data, model and monitoring requirements are very high for these contexts. Best-practice at the moment is therefore the quantification on C-level, which we try to achieve as much as possible in our impact report.

Negative effects in this scheme can and should be reported as well. They usually take the form of control variables that should be monitored because they show the risk of reduced outputs (F) or even unintended negative side-effects for society (G).

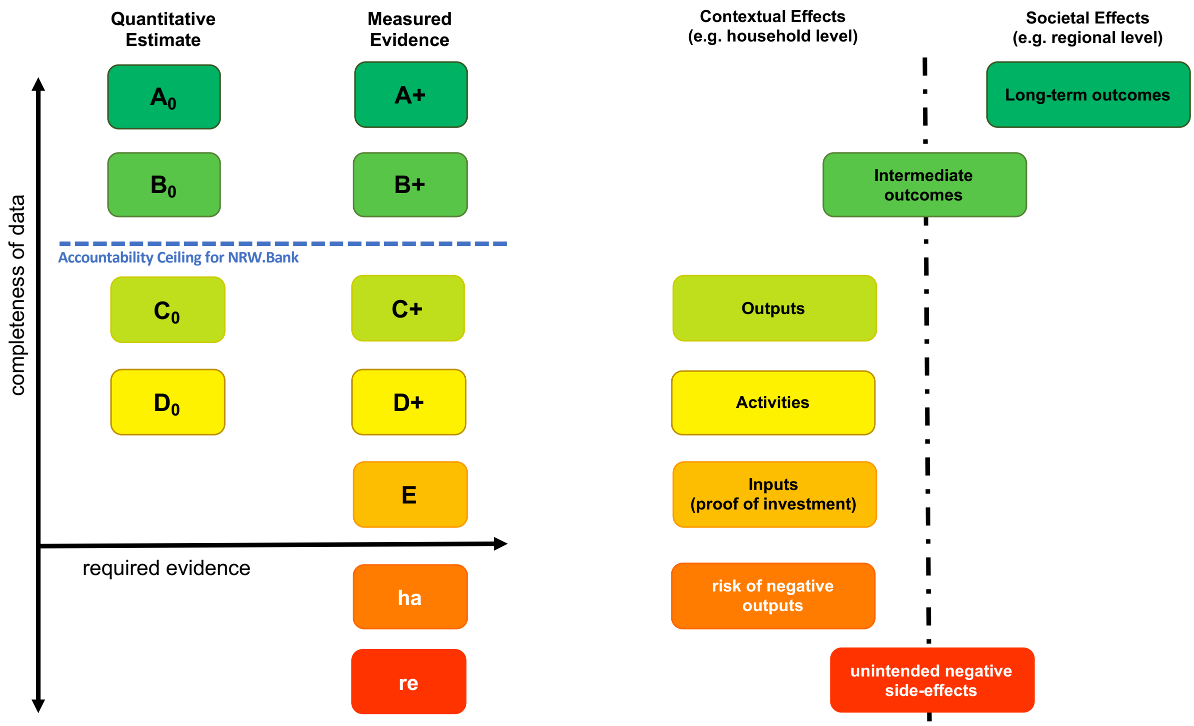
Table 1: Indicator types, direction, context, qualifiability and quantifiability in SIBs

Class	Indicator-Type	direction	Context	Current Qualifiability in SIBs "Whats likely to happen?"	Current Quantifiability in SIBs "How large is the effect?"
A	long-term outcome	positive	regions	low – can be based on studies that deal with related research questions	very low (best needed)– requires monitoring and data on control groups
B	intermediate outcome	positive	communities	medium – can be based on observed policy effects in similar communities	low (best-in-class) –requires monitoring on community level
C	output	positive	target population	medium – can be based on statistics and/or literature	medium (best practice) – requires data by issuer but also other sources
D	activity	positive	beneficiaries	high – can be based on eligibility assessments	high (standard in SIB reporting) –requires mainly data by issuer
E	input	neutral	beneficiaries	very high –can be based on standards & guidelines	very high– minimum requirement for reporting
F	harzard	negative	target population	medium – can be based on qualitative risk assessments or observed effects	low – requires scenarios or quantitative risk assessments
G	rebound	negative	communities	low – can be based on ex-post evaluation	very low – requires studies on non-intended side-effects of policies

Source: own compilation

Figure 2 shows the resulting classification system for indicators in the NRW.BANK Social Bond impact assessment. As shown there, data requirements increase for higher quality indicators that show effects on larger populations (intermediate outcomes) or even whole regions.

Figure 2: Indicator classification system for NRW.BANK SIBs



Source: own compilation

4 Outcome Pathways

The use of proceeds differentiates 4 types of impacts: **affordable home ownership**, **SME financing**, **access to essential services (education)** and **access to public goods & services**.

The NRW.BANK Social Bond framework (as well as the future impact report) can be found at:
https://www.nrwbank.com/opencms/en/investor-relations/Issuance_NRW.BANK.Social_Bond.html

Each category requires its own outcome-pathway (see following section on operationalization) and definition of indicators that are shown on the following pages.

4.1 Operationalization of outcome-pathways

The outcome pathways for each category are drawn horizontally from the outside inwards.

The first step is the definition of inputs and impacts (in form of Sustainable Development Goals (SDGs)). These definitions are provided by the issuer's framework (NRW.BANK, 2022).

The second step relates to the definition of long-term outcomes. These are based on both the issuer's framework as well as the official SDG targets (see United Nations (2022)).

In the third step, the intermediate outcomes are defined by the authors. These desired outcomes are both related to the pre-conditions for long-term outcomes as well as the desired outcomes of the issuer.

The fourth step then connects the inputs by the issuer to the physical (or monetary) realization in form of activities. This "materialization" is both affected by the defined outcome-pathways and information of the issuer's loan programs.

The fifth step then connects activities to outputs and outputs to outcomes. The convention here is that no activity is connected to more than one output and that there are no connections between activities. The outputs, which are defined as effects "that increase/decrease" or "improve" conditions, are not restricted in that way. More than one output can be connected to an outcome and some outputs contribute to more than one pathway.

The six and final step relates to hazards and rebounds. Hazards are outputs that describe potential negative trade-offs between activities of the same actor (shown as red-dotted lines) or with activities of other actors. Rebounds relate to the compensation or overcompensation of outcomes from hazards. They are described by red borders around intermediate outcomes and red-dotted connections back to the hazards they relate to.

4.2 Attributability and Additionality of the Social Bond Framework

Recent studies have questioned the credibility of sustainability claims by issuers of social or green securities. It is argued that the expectations of investors cannot be met in regard to their understanding how the funds are spent (attributability), how the funds lead to new projects (additionality) and how these investment strategies might make it harder for non-sustainable players to obtain capital (Krahnen et al., 2021).

And there is no doubt that some of these products can be considered a *rebranding without additionality*. One indication for this issue is the higher growth rate of these financial products compared to the growth rate of overall investments into sustainable sectors (Migliorelli, 2021).

While the question of segregation and diverted "brown" assets can only be answered for the market as a whole, the first two claims on attributability and additionality can be investigated within the framework of a particular bond. However, we first need a working definition of sustainable finance that can be applied to the bond. We use Migliorellis' (2021, p. 10) definition of *finance for sustainability* for that purpose: "*finance to support sectors or activities that contribute to the achievement of, or to the improvement in, at least one of the relevant sustainability dimensions*".

In the case of the NRW.BANK loans, two statements hold true that indicate that investments here actually lead to desired societal effects.

First, we look at the issuers' role in the region. NRW.BANK is the promotional bank of the State of NRW for the completion of its' structural and economic policy tasks. It is limited to the three promotion areas of "economy", "housing" and "infrastructures/municipalities" and a full set of sustainability guidelines is in place (exclusion criteria). There is also a "not paying out dividend" policy in place. Earnings are only used to strengthen the reserves.

Secondly, the issuer clearly states in his framework: *"An amount equivalent to the net proceeds raised from any NRW.BANK Social Bond/CP issued under this Framework will be allocated, in part or in full, to finance new eligible social expenditures ("Eligible Social Projects") and/or to refinance existing Eligible Social Projects whose disbursements occurred no earlier than 36 months prior to the issuance year" (NRW.BANK, 2022, p. 7).*

These two facts, in addition to the impact assessment by the authors, provide a plausible rationale for the attributability and additionality of the Social Bond. The framework ensures that at least parts of future funds (attributability) as well as net proceeds (additionality) will be allocated to the same type of eligible social projects. The role of the issuer and his sustainability guidelines also ensure that the remaining funds have no risk of an un-sustainable materialization.

Nonetheless, future updates of this methodology will investigate how these claims can be verified in a systematic manner.

4.3 Affordable Home Ownership

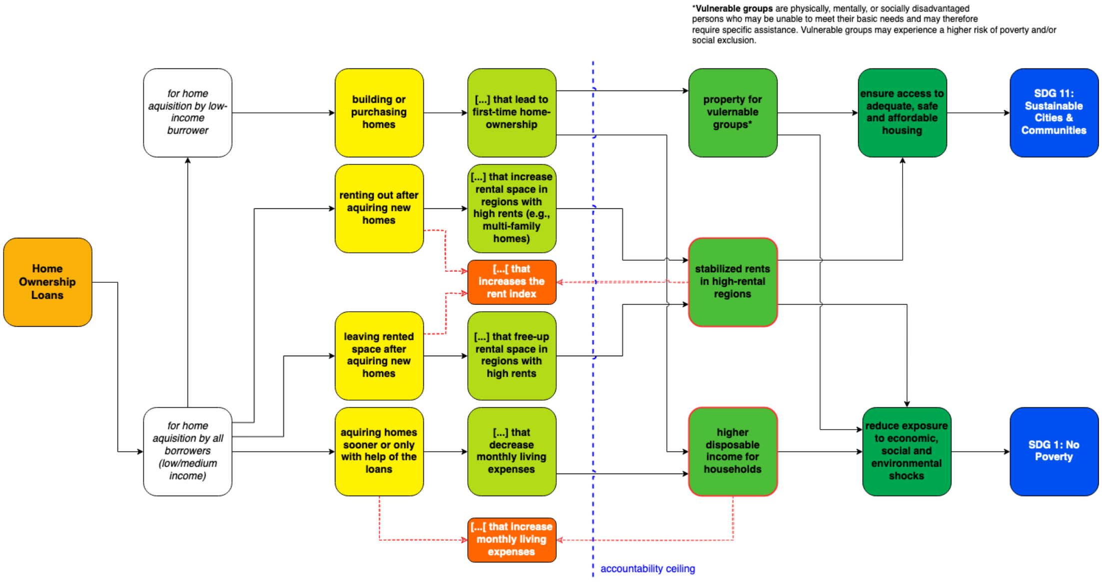
4.3.1 Narrative

NRW.BANKs' homeownership loans contribute to better access to affordable housing (SDG 11) and reducing exposure to economic shocks (SDG 1) for low- and medium-income families by improving the affordability of living space, increasing disposable income for households and stabilizing rents.

To achieve these goals, the financing directly enables first-time home-ownership for vulnerable groups and a decrease in living expenses for the borrowers. In many cases, the borrowers increase the supply of rental living space or rent-out living space after acquisition at rates that are at or below the current renting index.

In terms of hazards, it cannot be ruled out that living expenses might instead increase for some burrowers (if for example the trade-off between former rental rate and loan costs is unfavorable). There is also a risk that the freed-up living space is rented at considerable higher rates than before.

4.3.2 Outcome-pathway



Source: own compilation

4.3.3 Potential Indicators

To achieve both goals (progress towards SDG 11 and SDG 1) the loans should be allocated in terms of household-income (**Input-Indicators**). **Activity-Indicators** could quantify the *number of homes built and purchased* and account for borrowers that have been rentals before. **Output-Indicators** should aim to measure *first-time ownership for vulnerable groups* as well as a *decrease in monthly living expenses* for borrowers. Potential **Outcome-Indicators** could estimate the *higher disposable income of borrowers* as well as *stabilized rents in high-rental regions*.

4.4 SME Financing and Employment Generation

4.4.1 Narrative

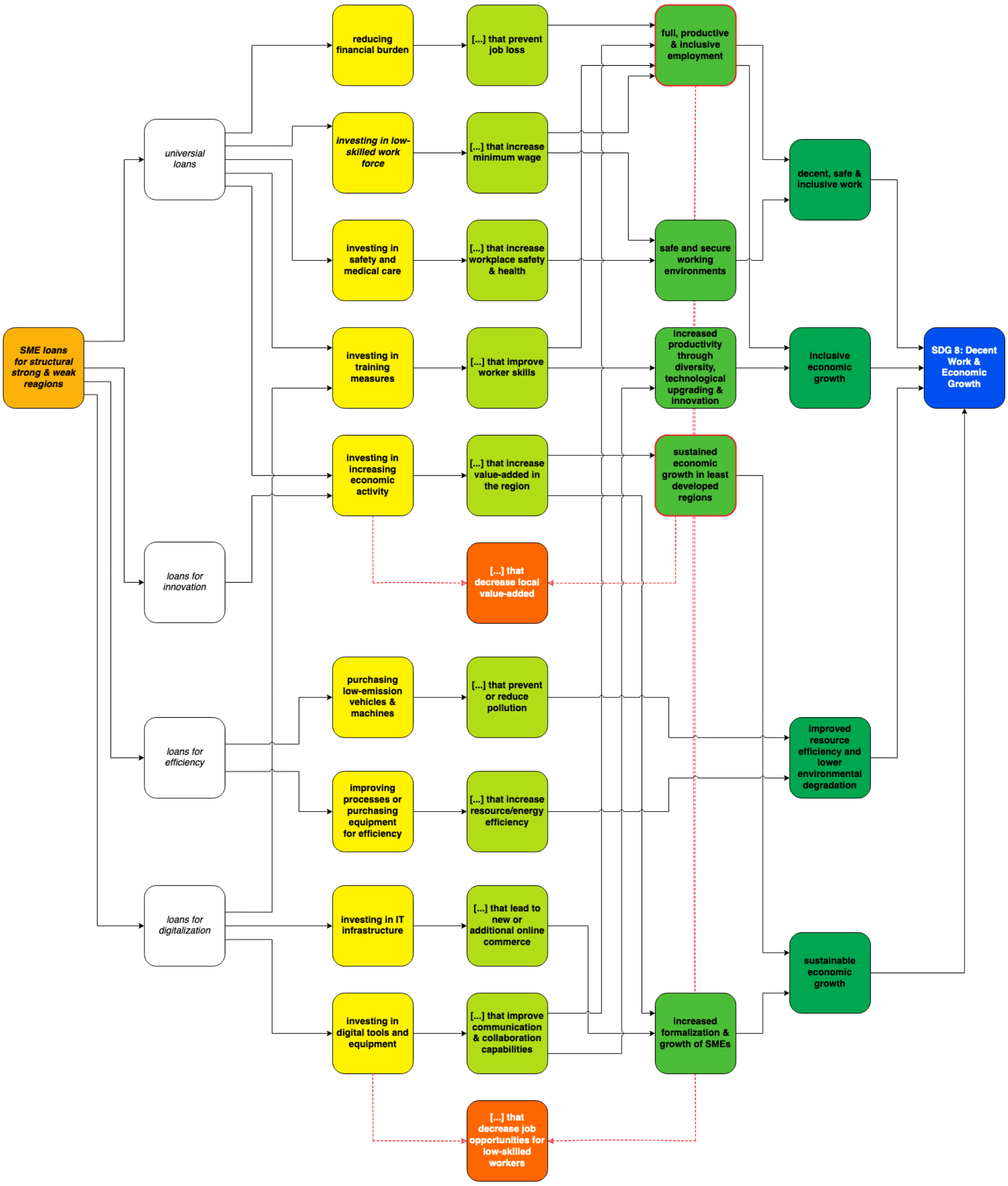
NRW.BANKs' loans for small- and medium sized companies contribute to SDG 8 on decent work and economic growth. They enable decent work by increasing productive employment and ensuring safe and secure working environments. Their economic growth is both inclusive and sustainable from investments into productivity, value-added in the least developed regions, increased formalization of SMEs and improved resource efficiency of companies.

To achieve these goals, financing from universal loans reduce the financial burden of companies (preventing job loss) and leads to investments in the low-skilled work force (increasing minimum wage), worker training (improving worker skills) and additional value-added in local communities. Loans for innovation and efficiency improve the productivity of companies and prevent environmental degradation.

Loans for digitalization improve online commerce by investing in IT infrastructure as well as the collaboration and communication abilities of SMEs by investing into digital tools and equipment.

In terms of hazards, some new economic activities from investments might in fact divert value-added to regions that already thrive (leaving the least developed regions even more behind). There is also a risk that increased digitalization efforts lead to less job opportunities for low-skilled workers.

4.4.2 Outcome-pathway



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4.4.3 Potential Indicators

A contribution to SDG 8 requires input-indicators that attribute the funds to *structural weak regions*, *loans for digitalization* and *general loans for decent work*[1]. **Activity-indicators** could measure the recipient's investments in terms of e.g., worker training, reducing financial burden, purchasing IT-infrastructure. Output-indicators could then relate to e.g., *prevented job loss*, *increased minimum wage*, *increased local value-added* or *improved worker skill*. For desired **outcomes**,

[1] A wide range of options for impact contribution is available here, which is why only examples can be shown here.

indicators could measure the *poverty risk ratio*[2], or *increased productivity* and the *new formalization of SMEs* in the region.

4.5 Access to Essential Services: Education

4.5.1 Narrative

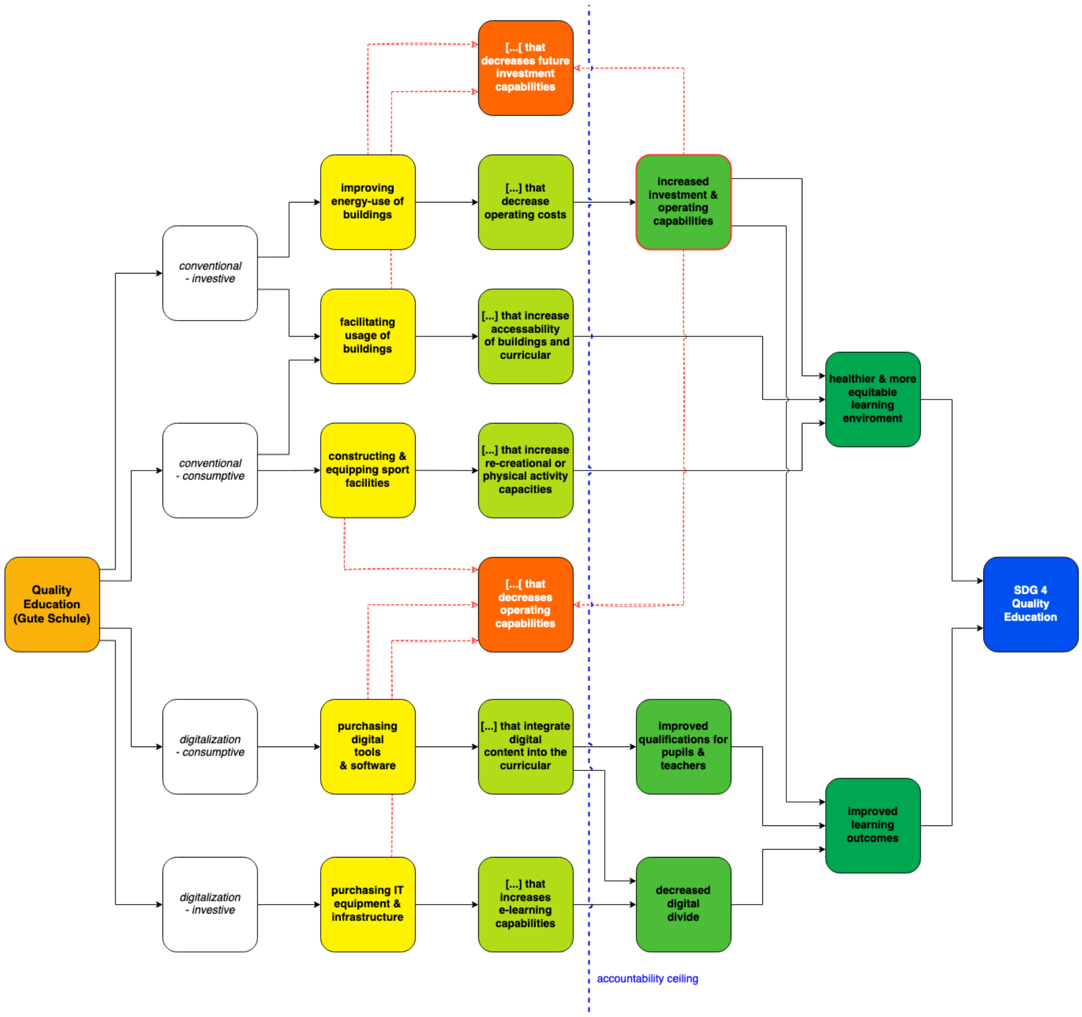
NRW.BANKs' participation in the Gute Schule 2020 programme is in line with SDG 4 on ensuring inclusive and equitable quality education. Firstly, they facilitate healthier and more equitable learning environments by increasing the accessibility of school buildings and the capacities for re-creational and physical student activities. Secondly, they improve learning outcomes by improving the digital qualification of students and teachers alike and decreasing the digital divide between students from different backgrounds.

To achieve these goals, the financing allows for construction and renovation measures of school facilities as well as purchases of IT infrastructures and digital equipment.

In terms of hazards, it cannot be ruled out that these interventions might instead decrease future investment capabilities of schools if the net increase in investments is not fully compensated by the additional funds as well as financial gains from lowering the operating costs.

[2] The poverty risk ratio is an indicator for measuring relative income poverty. It indicates how high the share of persons with an income below the poverty risk threshold of the population is (http://www.integrationsmonitoring.nrw.de).

4.5.2 Outcome-Pathway



Source: own compilation

4.5.3 Potential Indicators

Achieving quality education via loans for schools could be associated with the following **output-indicators**: *decrease in operating costs*, *increase of accessible services*, *additional new or improved sport facilities*, *additional teacher training units*, *new curricular activities*, and *student satisfaction with e-learning*. This leads (in an ideal scenario) to the **intermediate-outcomes** of *increased investment capabilities by schools*, *improved grades*, and *improved media literacy of students* in the region. The pre-condition for these effects is that loans by the NRW.BANK are used for *increased energy-efficiency of buildings* or *better access to buildings*, *new ICT-infrastructure* as well as *increase in personnel expenditures for teacher education and media personnel* (**activity-indicators**).

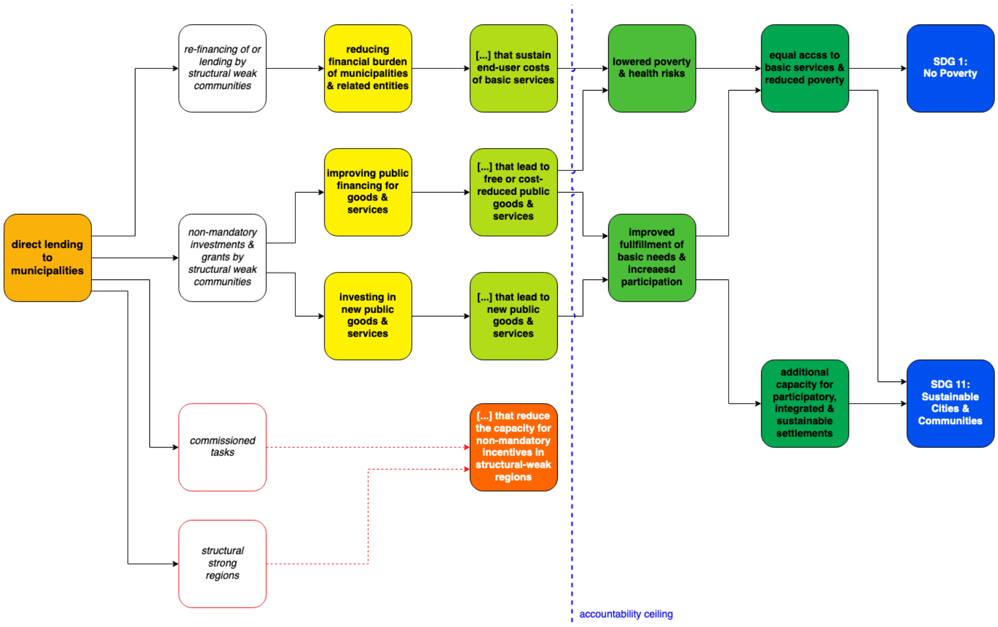
4.6 Access to Public Goods and Services

4.6.1 Narrative

NRW.BANKs' direct lending to structural weak municipalities is in line with SDG 1 (fighting poverty) and SDG 11 (sustainable cities and communities). The loans contribute to reduced poverty, equal access to basic services and increased capacities for participatory, integrated and sustainable settlements by lowering health and poverty risks, improving the fulfillment of basic needs and increasing participation.

Public goods and services are the focus of this process. Firstly, the costs of these services are sustained by reducing the financial burden of communities. Secondly, the costs can be reduced by improving their public financing. Thirdly, new public goods and services are enabled with the help of further non-mandatory investments by the communities.

In terms of hazards, not all funds might be allocated to structural-weak regions and some funds might also be used for mandatory, commissioned, tasks. As a consequence, the overall investments capacities for public goods and services might be reduced.



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4.6.2 Potential Indicators

To achieve both goals (progress towards SDG 11 and SDG 1) direct lending to communities should result in *sustained end-user costs for services*, *additional free or cost-reduced services* and *additional free public goods and services* (**output-indicators**). This requires an *increase of investments* as well as a *decrease of financial burden* (**activity-indicators**). Intermediate-outcomes could track the development of *relative-poverty* and the *decrease of people that dispense of personal needs at least once a month* in targeted regions (both indicators can be found in the NRW Sozialbericht 2020).

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