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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 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.

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).

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 modernisation 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.

Process

The NRW.BANK issues a bond by selecting loan programmes 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.

Methods

The WI considered 3 impact methods for the NRW.BANK impact assessment methodology: sustainable livelihood (SL), social return on investment (SrI) and theory of change (ToC). SL focuses on improving the livelihood of low-income households and would therefore not fully cover the direct effects of loans for SME companies or broader investments into education in NRW (such as digitalization of schools). SrI is restricted to effects that can be monetized, but the authors think that there are several societal outcomes that are evident but cannot be monetized in a reliable manner. The theory of change on the other hand allows for a heuristic definition of outputs, short-term outcomes and conditions for long-term societal benefits. It is deemed to be an appropriate rationale and illustration of the NRW.BANK Social Bond impacts.

Method: Theory of Change

Theory of Change is a methodology 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.

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

	Inputs	Activities	Outputs	intermediate outcomes & longterm outcomes	Impact
Definition	Resources deployed in service of certain activities	Tasks performed in support of specific objectives	Tangible results from actitivies such as services or products	Changes on individuals or groups that follow from the delivery of outputs	Changes on society as a result of achieved outcomes
Example NRW.Bank	home construction & purchasing loans to low-income households	building homes in urban areas	new homes built in areas with high rents	lower rents in targeted regions (short term) in order to provde affordable housing (longterm outcome)	more sustainable cities and communities

Source: own compilation based on Jackson, 2016

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*).

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.

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.

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 practise) 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 (2021) 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-practise at the moment is therefore the quantification on C-level, which we try to achieve as much as possible in our impact report.

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

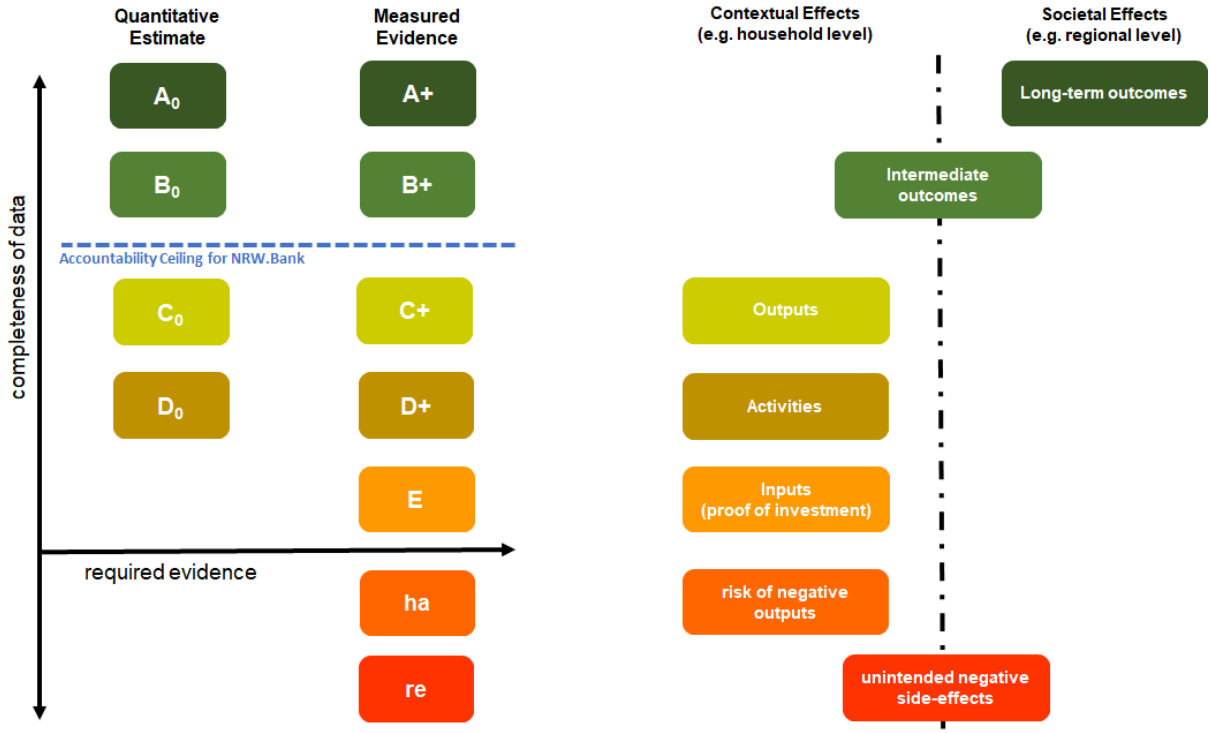
Class	Indicator-Type	direction	Context	Current Qualifiability in SIBs "Whats likely to happen?"	Current Quantifiability in SIBs "How large is the effect?"
A	long-term outcome	positive	regions	low – can be based on studies that deal with related research questions	very low (best needed) – requires monitoring on state level 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
ha	harzard	negative	target population	medium – can be based on qualitative risk assessments or observed effects	low – requires scenarios or quantitative risk assessments
re	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.

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 (ha or hazard-indicators) or even unintended negative side-effects (re or rebound-indicators).

Figure 2: Indicator classification system for NRW.BANK SIBs



Source: own compilation

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

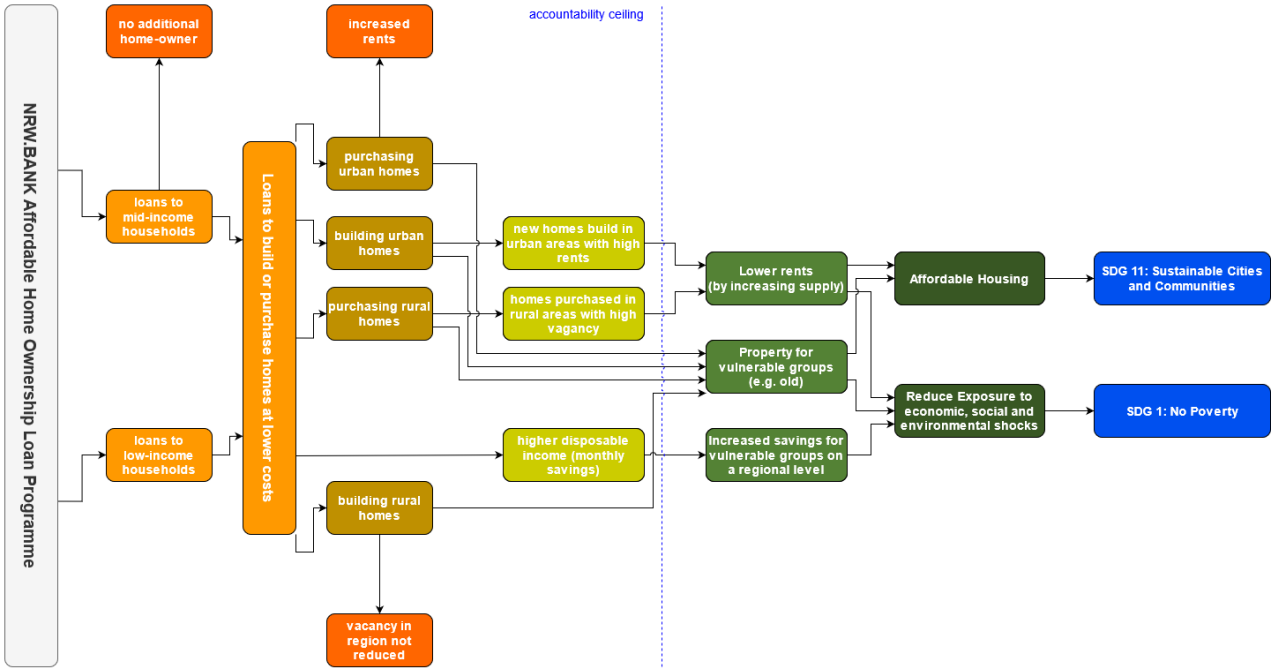
Each category requires its own outcome-pathway and definition of indicators that are shown on the following pages.

Affordable Home Ownership: Narrative

Housing loans can help to lower the financial risk and provide affordable housing for the recipients. They can also lead to more sustainable cities and communities (SDG 11) if rents can be lowered, and property is provided for vulnerable groups. This desired outcome is often reduced if new buildings are constructed in rural areas with high vacancy rates, buildings are purchased in urban areas with already increasing building prices or high-income households already planned to build/purchase housing regardless of the loan conditions provided (free-rider effect).

Additional benefits on the contextual level can occur if the disposable income of low-income loan recipients can be increased during the process. This reduces their exposure to economic, social and environmental shocks and therefore poverty (SDG 1).

Figure 3: Outcome-pathway for Affordable Home Ownership



Source: own compilation

Affordable Home Ownership: Potential Indicators

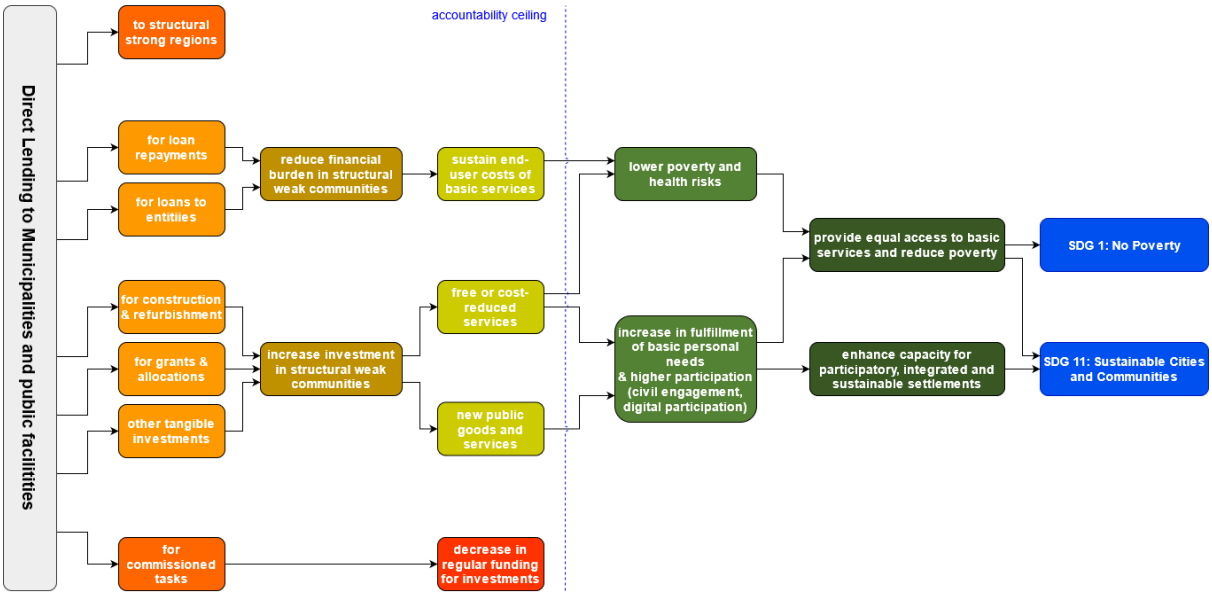
To achieve both goals (progress towards SDG 11 and SDG 1) the loans should be allocated in terms of household-income (**Input-Indicators**). **Activity-Indicators** could quantify the *number of homes built and purchased in urban and rural areas* respectively, while **Output-Indicators** should aim to measure *homes purchased in rural areas with high vacancy* and *homes built in urban areas with high rents* as well as *higher disposable income of loan recipients*. Potential **Outcome-Indicators** could estimate the *higher savings and additional property for vulnerable groups* as well as *decreased rents in urban areas*.

Hazard-Indicators should look at the target populations of the loan programme and the regions where property is acquired. *Decreasing income* and *decreasing property prices* (each compared to a long-term average) might indicate that less people are willing to acquire property overall and that those who do are less likely to be part of vulnerable groups that need to acquire property the most. This reduces or even negates the impact of the programme if the loan modalities are not adjusted as a consequence.

Access to Public Goods and Services: Narrative

Direct municipal loans for self-governed tasks (aka investments) may lead to an increase in public investment or reduce the financial burden in structural weak regions (see Figure 4). As a long-term consequence, they can help to reduce poverty (SDG 1) and lead to sustainable communities (SDG 11) by providing equal access and reducing poverty as well as improving integrative and participatory offers in targeted regions. This is achieved by sustaining or reducing the end-user costs of existing services as well as providing free or new additional services in their region. These outputs of direct lending could be decreased if significant shares of the lending programme are transferred to structural strong regions with a lower financial burden or are primarily used by municipalities to fulfil their mandatory tasks.

Figure 4: Outcome-pathway for Access to Public Goods and Services



Source: own compilation

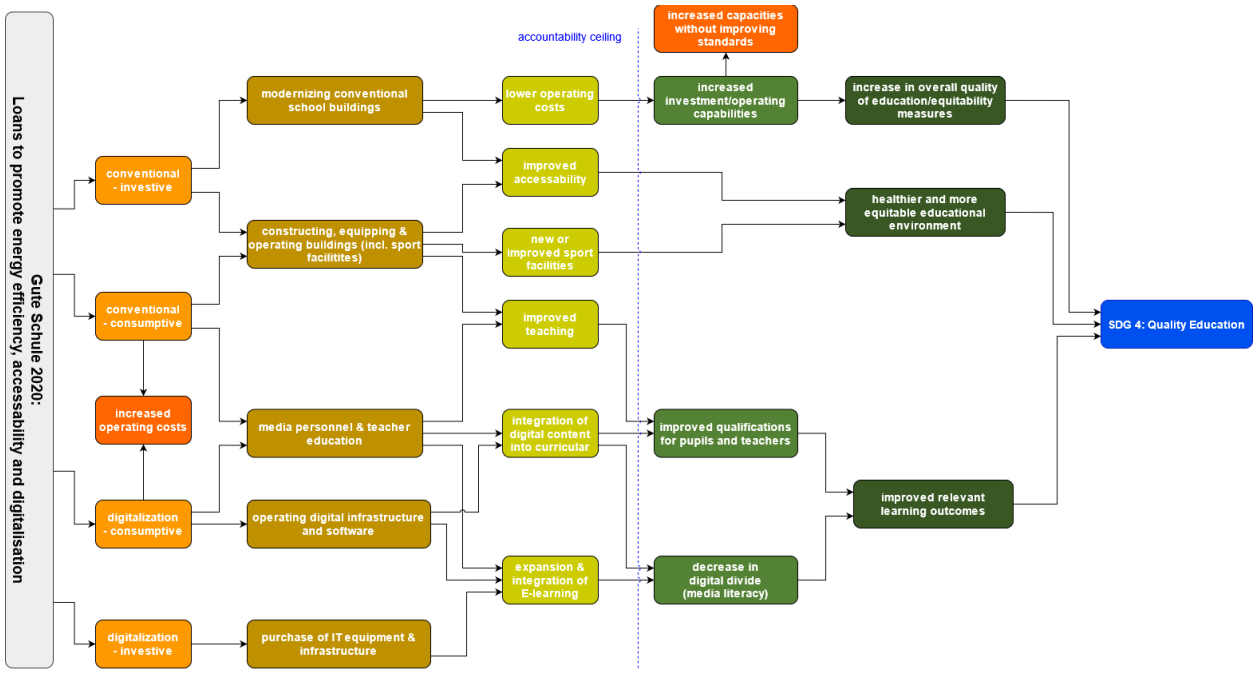
Access to Public Goods and Services: Potential Indicators

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**) –particular in structural weak communities. This requires an *increase of investments* as well as a *decrease of financial burden* (**activity-indicators**). To that end, the loan programme could track loans purposes such as: *additional construction & refurbishment*, *additional grants & allocations to public and private entities*, *additional other tangible investments*, *loan repayment* and *additional subsequent loans to public institutions and banks* (**input-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). A potential **hazard-indicator** should look at changes in the status of structural weakness of targeted communities in form of *higher shares for communities with GRW status D compared to C*. As a **rebound-Indicator**, one could test for a potential long term *increases in the share of expenses for commissioned tasks* (indicating less investments into public goods and services).

Quality Education: Narrative

Both types of loans by the NRW.BANK (liquidity and investment loans) can help to achieve SDG4 (quality education). In the long run (see Figure 5) they can help to increase the extent and quality of measures to improve accessibility and integration, relevant learning outcomes, media/digital literacy and healthy educational environments. This can either be achieved by direct measures (newly build or refurbished buildings and their digital and non-digital equipment) or indirectly by improving the qualifications of teachers and students alike. Both types of consumptive loans aim to provide the required operating, software, and personnel costs. Conventional investive loans result in the required construction or refurbishing activities for buildings and building equipment. Loan for digital investments on the other hand, provide the necessary infrastructure to allow for e-content and e-learning in curricular but also help to reduce the digital divide.

Figure 5: Outcome-pathway for Quality Education



Source: own compilation

Quality Education: Potential Indicators

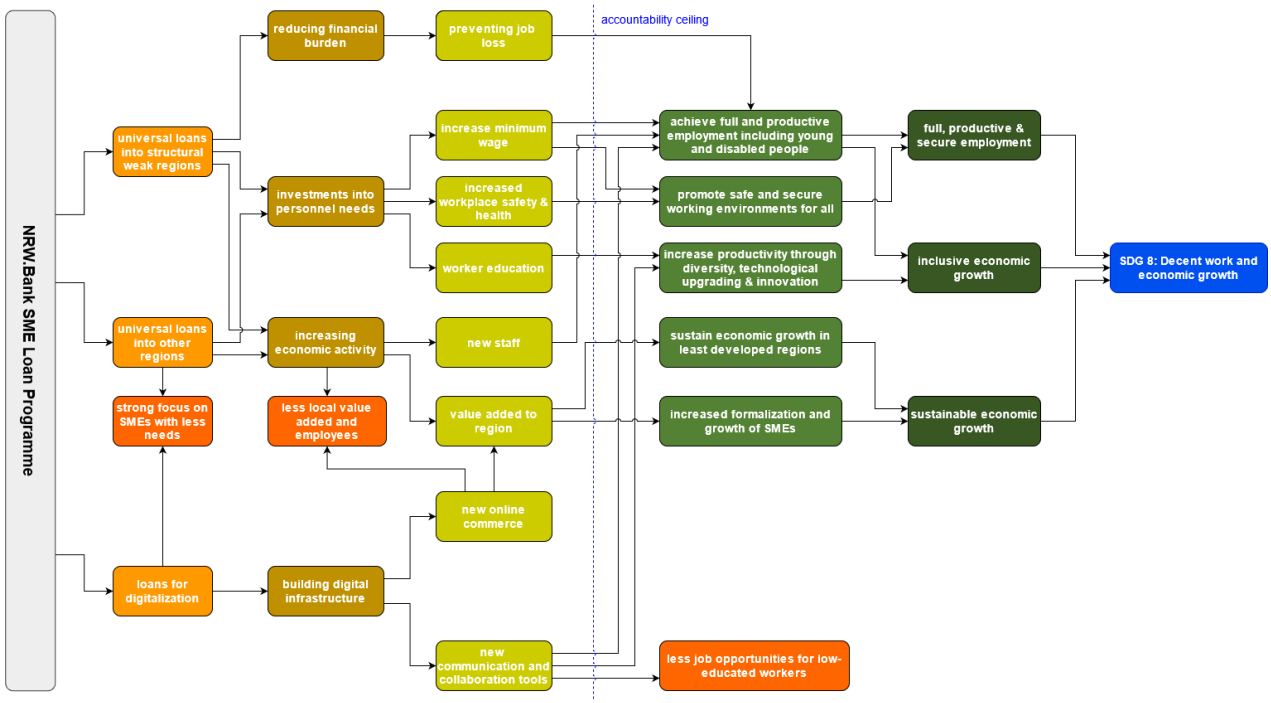
Achieving quality education via loans for schools could be associated with the following **output-indicators**: *decrease in operating costs*, *increase of accessible services*, *additional new or improved sport facilities*, *additional teacher training units*, *new curricular activities*, and *student 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 *new or renovated buildings*, *new equipment and tools*, *new ICT-infrastructure* as well as *increase in personnel expenditures for teacher education and media personnel* (**activity-indicators**). Potential **hazards** for decreased impacts could be assessed via an *increase in annual operating costs* as well as *increase in student capacity*.

SME Financing: Narrative

Both the universal and the digitalization loan can help to achieve SDG 8 but depend on a complex cause-effect chain with many uncertainties. The digitalization loan empowers SMEs to invest in their digital infrastructure. These investments can be used to develop new digital tools that help employees to handle their workload in a better way or increase their innovation potential. It can also help a company to develop its online commerce opportunities. Both lead to more productive employment and more sustainable economic growth but come at the risk of job loss for low-educated workers as well as a shift of added value to regions with less need.

The universal loan can be used to cushion financial needs in crises (preventing job loss) or to increase the economic output (e.g., through expansion). These loans can also be specifically used to fulfil needs of the employees (higher wages, safety and health measures, education). If used in that manner, they can help to increase the share, inclusiveness and quality of employment but also contribute to a more sustainable economic growth. However, it is crucial that these general loans focus on structural weak areas, as the desired outcomes increase proportionally with lower economic activity and employment rates in a region.

Figure 6: Outcome-pathway for SME Financing



Source: own compilation

SME Financing: Potential Indicators

The loans achieve desirable outcomes via two pathways: *share and quality of employment* as well as *inclusive and sustainable economic growth* (**outcome-indicators**). With regard to the digitization loan, **output-indicators** could focus on *increase in online commerce* or the implementation of *new tools for communication and collaboration*. Universal loans could additionally provide outputs like *additional staff*, *increase in worker education expenditures*, or *increase in minimum wage*.

The required **activities** could potentially be measured via *higher investment capacity* (in particular for personnel needs), *increased local economic activity,* and *share of digitalized workload*. On the **input-side**, the local economic parameters should be considered for loan allocation such as *employment rates for different groups* (overall, women, migrants, youth, etc.), *development of corporate taxes in the region*, *GDP per capita*. Potential hazards for lower desired impacts arise from a *shift in loan towards region with less needs*, *increase in rates of global versus regional value added*, and *increase of joblessness for low-skilled workers in the region*.

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