

INNOVATIVE FINANCE FOR NUTRITION



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SUMMARY

Malnutrition is a major public health problem, for which global development assistance current falls far short of needs. As such, it is important to consider non-traditional sources and mechanisms to increase the funding available to support nutrition, particularly in low- and middle-income countries where the burden is highest. This paper aims to do this by reviewing different types of ‘innovative finance’ and how they can be—and in some cases, have been—applied to improve nutrition.

Innovative finance mechanisms can be grouped into four clusters: 1) grants and technical assistance (TA) as part of ‘blending’ approaches or as a precursor to investment; 2) outcome funding, impact bonds, and impact-linked finance; 3) various debt and equity instruments; and 4) first-loss capital and guarantees. Among these, grants and TA are the most widely used and well-established mechanisms, including with a food and/or nutrition focus. Debt and (to a lesser degree) equity are also widely used – though not necessarily with a specific focus on nutritious foods. In contrast, approaches that apply impact-related funding within nutrition are only just being developed. First-loss capital has been widely used in other development sectors, but with limited application to date in nutrition, whereas guarantees are less widely used and have not yet been applied within nutrition. Examples of innovative approaches include the Good Food Innovation Fund (Rockefeller Foundation and Intellect Advisory Services), the Nutritious Foods Financing Facility (GAIN), and Save the Children and Power of Nutrition’s results-based financing approaches.

However, all these mechanisms have potential for further application within nutrition. In particular, impact-related funding could be applied widely, including to non-market-based approaches, and guarantee approaches (successful in other sectors) could be tested with a focus on nutritious food value chains. Developing and deploying any of these approaches will require new partnerships between the nutrition and finance sectors as well as careful documentation and sharing of insights and lessons learned from their initial, exploratory applications.

KEY MESSAGES

- There are four main clusters of innovative finance, and nutrition-related approaches have been or are being developed in all of these.
- Grants and TA and debt and equity are fairly widely used, with less application of impact-related finance, first-loss capital, and guarantees.
- While all these approaches have been used in related development sectors, there remains untapped potential to test and scale up their application to nutrition.
- Developing these approaches further will require novel and creative collaborations between the nutrition and finance sectors.

BACKGROUND AND OBJECTIVE

Malnutrition in all its forms continues to be a major public health challenge worldwide: 22% of young children remain stunted (too short for their age), while about 20% of children and 40% of adults are overweight (1). Moreover, progress in improvement has been very slow, with no country on track to meet global nutrition goals and the number of people affected by hunger or unable to afford a healthy diet rising in recent years (1,2). Malnutrition has major negative consequences for individuals and societies, including increasing mortality, reducing wellbeing, shortening lives, and limiting educational attainment (3). Indeed, poor diets are estimated to be responsible for more deaths than any other risk factor, including smoking (4).

Malnutrition also has large economic costs: the Food and Agriculture Organization (FAO) estimates that malnutrition costs the global economy approximately US\$3.5 trillion per year, or 5% of global GDP (5), and the OECD estimates that treating obesity-related diseases will cost US\$425 billion per year across 52 countries (6). Due to these high social and economic costs, investing in nutrition interventions has been argued to be one of the most efficient ways for countries to achieve and sustain their economic wellbeing (7). Indeed, nutrition investments have a high benefit-to-cost ratio: the International Food Policy Research Institute has estimated that every US\$1 invested in preventing malnutrition delivers US\$16 in net social benefits (8).

Yet investment in nutrition currently falls far short of the need. The 2021 *Global Nutrition Report* estimated that nutrition-specific¹ financing needs to meet select maternal, infant and young child nutrition targets were US\$10.8 billion per year over 2022–2030—and nutrition-sensitive needs were estimated at US\$39–50 billion per year (9). While major summits like Nutrition for Growth have helped to increase attention paid to nutrition financing, and some countries' domestic nutrition budget allocations have been increasing (10,11), investments in nutrition still lag far behind what is needed. Indeed, nutrition funding globally has leveled off in recent years, with nutrition-specific official development assistance (ODA) at US\$0.96 billion in 2019, down from US\$1.07 billion in 2017 (9). This represents just 0.50% of total ODA (compared to 1% on malaria control, for example), and just 0.018% of ODA was allocated to obesity and diet-related NCDs, with much of this going to upper-middle-income countries (1,9).

Domestically, most countries have allocated only very small amounts of their budgets to nutrition-specific programmes (10), and agriculture spending has also fallen: globally, the share of government expenditure on agriculture relative to the share of GDP from agriculture fell from 0.42 in 2001 to 0.26 in 2017 (12). The estimated funding needed to transform agriculture in Africa is estimated at US\$40 billion a year from 2016-2025, but only US\$8 billion of this is currently available from traditional sources (ODA, donors, and government) (13).

Given these large gaps and the limited ODA funding available, it is essential to think creatively about how to expand the pool of financing available to support nutrition by attracting diverse funders via innovative structures, as well as deploying traditional aid in innovative ways allowing, for instance,

¹ Nutrition-specific investments have traditionally focused on services delivered through health systems and public-health organisations; most ODA for nutrition focuses on these areas. Nutrition-sensitive investments have focused on other public services (e.g., education or water and sanitation) or on agriculture.

recycling of capital. This paper aims to do this by reviewing different types of ‘innovative finance’ and how they can be—and in some cases, have been—applied to improve nutrition.

METHODOLOGY

This paper is based on a non-systematic review of the literature to identify different types of ‘innovative finance’ across all development sectors. This was accomplished through searches for relevant sources using Google Scholar, checking the websites of key organisations involved in nutrition and development financing (including the Bertha Centre for Social Innovation & Entrepreneurship, Nutrition for Growth, the Power of Nutrition, Roots of Impact, UN Capital Development Fund, the Swedish International Development Cooperation Agency, the African Guarantee Fund, Sight and Life, the International Labour Organisation, Scaling Up Nutrition (SUN), and the OECD), and review of reports already known to the authors. This yielded an overall mapping of the options for innovative financing; whether and how these could be applied to nutrition was interpreted by the authors, based on their understanding of both nutrition and financing mechanisms. In addition, the authors contacted organisations known to be working on innovative finance applications within nutrition and asked them to share their approaches and experiences, using a case study template to obtain comparable information across approaches.

FINDINGS

Although the term ‘innovative finance’ is widely and frequently used, there is no agreed-upon definition of the concept. As the foundation for this working paper, we use the following definition:

Innovative finance is ‘a set of financial solutions and mechanisms that create scalable and effective ways of channelling both private money from the global financial markets and public resources towards solving pressing global problems. This concept incorporates two distinct facets: (i) innovative financing as a complementary source of resources to traditional development finance; (ii) innovative financing as a way of making development projects more effective and efficient by linking financing to results, redistributing risk, improving the availability of working capital, engaging technology, and matching the length, or tenor, of investment with project needs’ (14,15). This includes blended finance, impact investment, and outcomes-based finance (16).

Although closely connected concepts, blended finance is seen as a subset of innovative finance that primarily focuses on leveraging development finance in a strategic way to mobilise additional commercial capital towards sustainable development. In contrast, innovative finance is a broader, overarching concept that encompasses both public and private money to be used in the solutions and mechanisms (17). The past decades have seen the development of several instruments and tools along the spectrum of innovative finance, with diversified approaches and varied uptake across different sectors. To provide an overview of the different tools, this paper uses the framework of the Blended Finance Project, where financing instruments are grouped in four clusters (as shown in Figure 1): 1) grants and technical assistance (TA); 2) outcome funding, impact bonds, and impact-linked finance (all instruments connecting impact with financial rewards); 3) various debt and equity instruments; and 4) first-loss and guarantees. While grants or TA might not be seen as ‘blended’ in themselves, they can provide blending within a transaction and blending over time with other sources of capital (16).



Figure 1 – Cluster Map (Adapted from Project Blended Finance Report (16). Permission not required)

Using the above framework, this paper maps the options for innovative financing currently used in (or in development for use in) nutrition as well as those with potential to be deployed in nutrition, based on insights from other development sectors.

CLUSTER 1: GRANTS AND TECHNICAL ASSISTANCE (WITHIN BLENDED TRANSACTIONS)

Grants and TA, funded by development and philanthropic actors, have played a major role in advancing the fight against malnutrition to date. In addition to their traditional application, they can be leveraged for innovative finance mechanisms when blended within a transaction, as well as over time, prior to, and during main investment activities.

A shared characteristic is that these instruments do not seek a financial return. While traditionally grants and TA do not require the capital to be returned, recently they are increasing being deployed in the form of returnable grants. Beyond their traditional use as a basic instrument in development, they play a significant role in innovative finance, for instance by financing design funding, market research, and market development prior to and during main investment activities, as well as developing a pipeline of investment opportunities. Grants and TA are often used in combination with other instruments, to support these instruments in achieving impact goals.

	Basic Description	Financial Return
Grants	Transfers made in cash, goods, or services that are free of interest and often with no provision for repayment (18)	No return
Technical Assistance	Process of providing targeted support to an organisation with a development need or problem, with no intention of seeking any financial return	

In 2022, the World Resources Institute published a paper titled ‘Unlocking Early-Stage Financing for SDG Partnerships’, listing a number of initiatives where grant funding was key in the initial stages to attract investors to finance projects that stretch beyond their comfort level (19). It mentions GAIN’s Nutritious Foods Financing Facility (N3F; discussed in detail in Cluster 4, below), a programme comprised of an impact investment fund, a TA facility, and a monitoring and learning component, where initial grant funding was instrumental in the design of the facility and the development of a nutrition impact framework and metrics. Embedding a TA facility in its design, the N3F blends TA to de-risk the fund investments (e.g., by supporting improved financial management practices within firms) to achieve both financial and development impact.

Another example of how both grants and TA (as well as market linkages) can be leveraged in a blended form for nutrition impact is the Good Food Innovation Fund (GFIF), a blended finance facility managed by Intellect Advisory Services and focused on making nutritious foods more available and affordable in Sub-Saharan Africa. Launched in 2021 with a US\$5 million financing support from the Rockefeller Foundation, GFIF awarded six African small and medium enterprises (SMEs) with funding totalling over US\$1 million in 2022 and aims to support additional SMEs within East and West Africa over the project implementation period. The innovative aspect of this fund is its blended offering, which comprises multiple components: results-based financing support (see next section), TA support, and capital facilitation support to increase an SME’s potential to access to finance beyond GFIF. Financing is provided in the form of both non-repayable grants and repayable interest-free grants. The repayable grant component is itself another innovative aspect of the GFIF: it enables the recycling of capital, which is then further used to create additional impact. GFIF’s second funding window, for which applications are currently under review, is targeting SMEs focused on institutional markets or low-income populations with fortified whole-grain products, biofortified beans, processed milk, and pelagic fish products. The case study below provides more insights into GFIF’s financing mechanism, highlighting the support provided to a Kenyan SME producing nutritious meal solutions.

Case study: Naturelock, a Good Food Innovation Fund (GFIF) awardee

GFIF Fund manager: Intellecap Advisory Services

Main donors: Rockefeller Foundation

Background info: the GFIF was launched in 2021 with the objective of increasing the supply and enhancing the availability and affordability of, and equitable access to, good foods. The Fund aims to work with SMEs that are already supplying to institutional markets in Sub-Saharan Africa and to provide them with financial and technical support.

The SMEs: GFIF supports SMEs in Kenya, Rwanda, and Burundi that are active in the direct supply chain of good foods or in indirect supporting segments. It plans to expand the programme to Benin and Ghana.

Naturelock Nutrition Solutions, one of the Fund's awardees, is a Kenyan food-processing company that uses preservation technology to dehydrate agricultural produce including vegetables, cereals, and legumes to increase their shelf life.

The company sources raw materials from aggregator companies that work directly with smallholder farmers.

Nutrition focus: The company currently produces meals of mung beans mixed with vegetables such as carrots and cassava to increase the taste and nutritional quality. Naturelock intends to develop nutritious meal solutions, particularly its protein-based stew, in large packaging for schools, workplaces, and emergency programmes.

Deal structure: Naturelock received funding and TA from GFIF. The funding comprises a non-repayable grant as well as an interest-free repayable grant, and the company is contributing 20% in matching funds. The funding will be used for product development, nutritional analysis, and working capital to develop large packaging for these nutritious meals, which are expected to reach over 6 million school-going children (in both primary and secondary schools) and university students and close to 100,000 workers. To date, approximately half of the funds have been disbursed.

CLUSTER 2: IMPACT-RELATED FUNDING

Outcome funding, impact bonds, and impact-linked finance are all instruments that link measurable impact targets to financial rewards. These instruments are used to address measurable impact outcomes that are verified by third-party independent evaluators. Their focus on impact outcomes differentiates them from the instruments under cluster 1, which focus mainly on activities.

	Basic Description	Financial Return
Outcome funding or result-based funding	Outcome funding or result-based funding (RBF) refers to the disbursement of financing contingent on the successful delivery of pre-agreed outcomes or results.	While philanthropic investors and public capital act as outcome funders who seek no financial return, impact investors in bonds seek
Impact bonds	Impact bonds are outcome-based contracts that use private funding from investors to meet upfront capital requirements of a provider to set up and deliver a	

	service. The service is designed to achieve measurable outcomes, and the investor is repaid by the outcome funder if these outcomes are achieved (20).	and expect to receive returns.
Impact-linked finance	Impact-linked finance refers to linking financial rewards for market-based solutions to the achievements of positive social outcomes.	

Outcome funding and impact bonds have been extensively used in adjacent development sectors, such as health, but not so widely within nutrition. With the potential to leverage existing knowledge and funders' familiarity with these instruments, several organisations are exploring deploying these tools for nutrition.

The non-government organisation Save the Children, for example, has developed concept notes for two RBF instruments. The first one, developed together with The Power of Nutrition, is aimed at improving the treatment of acute malnutrition by training family members and community health workers in Kenya (please refer to the case study below). The second one is focused on preventing malnutrition in Malawi by providing mothers of children under two years of age with small monthly cash transfers plus caregiving counselling and support. To reduce risk, both programmes use a two-phased approach, with phase one targeting a smaller group of mothers and children to assess the cost, effectiveness, and scalability of the approach, and phase two, referred to as the 'scale up and scale out' phase, scaling up the number of children reached and potentially scaling out activities to other districts in Kenya and Malawi. Both these RBFs are expected to be completed through an outcomes-based contract with outcome payers, whose payments will only be triggered when pre-defined targets are met, therefore de-risking the outcome payers' participation. The outcomes payers will only pay Save the Children in arrears for successful outcomes.

Case Study: RBF Initiative to improve the treatment of acute malnutrition by training family members and Community Health Workers in Kenya

Sponsor: Save the Children

Partner: The Power of Nutrition

Background info: Early identification and treatment by training family members and community health workers is a low-cost, simple way to dramatically reduce the impact of acute malnutrition in children. It differs from the traditional approach in most locations, where children typically receive treatment for acute malnutrition at health facilities or clinics. Save the Children and partners have therefore developed a solution with two components: 1) Train mothers and other caregivers to identify early signs of malnutrition in their children and 2) Support community health workers to diagnose and treat malnutrition in the community (outside of health facilities). The proposed approach combines community-based and facility-based treatment, with the latter included when the clinical need arises.

Nutrition focus: In this programme, specialised food to treat malnutrition will be provided to community health workers, to be distributed to malnourished children. Training mothers and other caregivers enables malnutrition to be detected and treated earlier, preventing complications and leading to fewer hospitalisations.

Structure: In phase 1, the project will target approximately 30-40,000 children under age 5 with acute malnutrition over a three-year period, at an expected outcome payment amount of US\$80-90 per child (excluding the ready-to-use therapeutic foods). In phase 2, the project could scale to reach approximately 250,000 children with significant cost benefits on a per child basis.

Save the Children and The Power of Nutrition are currently seeking outcome funders for phase one and the scale up/scale out phase.

GAIN is conducting a feasibility study for outcome-based finance as a potential future funding mechanism for its [Workforce Nutrition \(WFN\)](#) programme, which aims to improve the nutrition of workers and their families in sectors such as tea, cocoa, and garment manufacturing in Asia and Africa. In its flagship programmes, WFN has improved the diets of tea workers and their families in Assam State in India and addressed chronic malnutrition among garment workers (most of whom are women) in Bangladesh. By using outcome-based contracts such as impact bonds where one or more outcome payers will provide funding only if pre-agreed, measurable outcomes are achieved, WFN aims to attract additional funding from various sources of capital to scale its impact. While outcome payers will benefit from de-risked funding based on evidence of outcomes achieved, investors will bear the risk while gaining the potential for impact and financial return. Assisted by Social Finance and New Foresight, GAIN is currently conducting stakeholder consultations on outcome-based finance for WFN, exploring the different roles that stakeholders can play in an outcome-based finance structure.

Following the World Bank's successful launch of a \$150m bond in 2022, which included an outcomes-based wildlife conservation component to boost South Africa's efforts to protect black rhinos (the

'Rhino Bond' (21)), The Power of Nutrition is seeking outcome funders with whom to replicate the structure for nutrition (22).

Finally, impact-linked financing is a relatively new tool. Impact-linked financing differs from outcome funding in that it targets market-based solutions (i.e., models in which a product or service can be delivered at profit), while outcome funding typically focuses on non-market-based solutions (i.e., models in which a product or service is delivered by an NGO or public-sector provider). There are three impact-linked funds operational to date. While these are not specifically dedicated to achieving nutrition impact, one of them includes nutrition and food security amongst its target sectors. It is the Impact-Linked Fund for Eastern and Southern Africa (ILF for ESA), managed by iGravity and Roots of Impact and sponsored by the Swiss Agency for Development and Cooperation (SDC) and the Medicor Foundation (23). The ILF for ESA provides impact-linked funding to impact enterprises, thus enabling them to scale in both economic and impact terms. The fund is targeting enterprises operating in Eastern and Southern Africa, and the target sectors are health (including nutrition and basic services); water, sanitation, and hygiene; sustainable agriculture and food security; and income and employment. ILF for ESA uses two main forms of impact-linked finance mechanisms:

- Impact-linked loans (figure 2): an impact-linked loan is similar to a traditional loan with the main difference that interest rates (and potentially even repayment obligations) are tied to the borrower's achievement of pre-defined and independently verified social outcomes (24). The higher the impact achieved, the lower the interest rate to be paid (25). The case study below highlights one of the SMEs funded by ILF for ESA through an impact-linked loan.
- Social-Impact Incentives Scheme (SIINC): in the SIINC mechanism, impact enterprises are rewarded with time-limited financial rewards if they achieve additional positive outcomes. These rewards are in general non-repayable (although a SIINC may also include a repayable component) and can be utilised by the enterprise without any constraints.

The goal of these impact-linked instruments is to mobilise investments to scale effective, market-based solutions with a social and/or environmental impact, and to provide the enterprise with 'better terms for better impact' (25).

Case study: Kilimo Fresh, an investee of the Impact-Linked Fund for Eastern and Southern Africa (ILF for ESA)

Facility manager: iGravity and Roots of Impact

Main donors: SDC and Medicor Foundation

Background info: ILF for ESA is focused on Eastern and Southern Africa-based enterprises active in sustainable agriculture, food security, and health, including nutrition. It provides innovative finance in multiple forms and uses a variety of non-repayable and repayable financial instruments that link financial terms to realised outcomes.

The SME: Kilimo Fresh, a Tanzanian food distribution company based in Dar es Salaam, purchases fresh produce directly from smallholder farmers in rural areas and delivers it to businesses in the city. The high-quality fresh produce is sourced from farmers in seven regions and thereby the company contributes to improving farmers' incomes, mostly by providing them with stable and efficient access to markets, one of the main challenges for smallholders in the region.

Nutrition Focus: Kilimo Fresh aims to tackle smallholders' limited access to markets, which leads to low income levels as well as higher food loss and waste. By improving the supply chain and market access, food waste can be decreased by up to 75% and there is increased access to high-quality produce for rural consumers (through decreased waste) and in lower-income urban areas, mainly because the company is expanding into informal vendors' markets.

Deal structure: ILF for ESA provided Kilimo Fresh with an impact-linked loan (Figure 2), with an interest rate tied to Kilimo Fresh's achievements on one Key Performance Indicator (KPI). The pre-defined KPI is aiming to incentivise a higher impact on smallholder women farmers, by providing a lower interest rate if the company increases the proportion of women farmers from whom it sources, as a percentage of its total supplier base. The assessment of the KPI takes place every six months, after which the interest due for the period is calculated based on achieved impact.

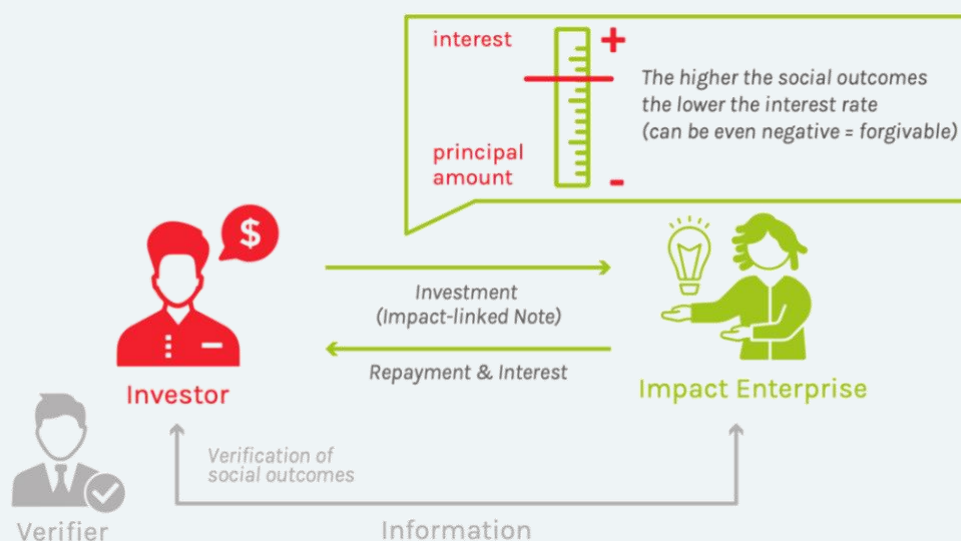


Figure 2 - Mechanism of Impact-Linked Loan (source: (24))

CLUSTER 3: DEBT AND EQUITY INSTRUMENTS

Debt and equity instruments have been slightly tweaked in impact investing to meet the needs of end users and stakeholders.

	Basic Description	Financial Return
Debt	Private debt is the investment of debt instruments into companies, via direct lending and/or microcredit (26).	Depending on the instrument, can generate a return below, at, or above market rate.
Equity	A category of instruments comprising all financial resources provided to firms in return for some ownership interest, or shares, issued to the investor (27).	

Two traditional financial tools are debt and equity investment, as broadly defined in the table above. When used to achieve development goals and other social goals, their applicability is limited due to several factors such as ownership dilution (i.e., the reduction in the percentage of existing shareholders' ownership in a company when it issues new shares of stock for new equity investors), difficulty of exiting investments, or misalignment in investment horizons – as well as no necessary focus on societal impact in addition to financial returns.

In contrast, impact investment refers to investments in which an investor seeks financial returns alongside a measurable positive impact on social or environmental goals. To address the abovementioned challenges with conventional debt and equity, the evolution of the impact investment space has gone beyond traditional debt and equity structures to make their investments more inclusive, responsive, and relevant for the context and achievement of impact. Two examples of how traditional debt and equity instruments and structures are being tweaked in impact investing are:

- Revenue-based financing: an instrument used in place of equity, where repayments to investors are based on the investee's revenues. It is used as a technique for realising an alternative exit, where the entrepreneur maintains more ownership and control of the business than she/he would under equity financing.
- Permanent capital vehicle: an investment entity created for managing capital for an unlimited period of time. Unlike a limited-life investment fund, with an average life of 10 years, a permanent capital vehicle has the advantages of allowing for longer-term patient capital (often required to achieve sustainable impact) and time for proof of concept of innovative solutions.

Impact investing has channelled considerable support towards certain social goals, such as green energy, but it is currently not addressing gaps in nutrition funding in the Global South. While blended finance and impact investing volumes have been growing, only a small percentage is allocated to food and agriculture (28). Further, many of these agriculture and food funds focus on export crops, often with limited nutritional value, such as coffee or cocoa, that are not meant for consumption by people in the low- and middle-income countries (LMICs) where they are produced. Most investment funds in Africa and Asia are focused on increasing the quantity of foods for export markets, not the quality of nutritious foods that is produced for the local markets. To address this gap, a few organisations are leading the way in using these tools for nutrition.

Since 2022, food system finance is one of the five thematic areas of the UN Capital Development Fund's (UNCDF) new strategic framework (29). UNCDF uses a combination of capital and development triggers to support SMEs and address the gap in the development finance architecture. With two facilities, the UNCDF (i) provides concessional revolving capital bridging the development finance gap, helping build a track record and targeting companies in frontier markets through its BRIDGE facility; and (ii) provides loans, quasi equity (a hybrid form of finance with characteristics of both debt and equity investments), and equity to early-growth SMEs through its BUILD fund, managed by fund manager Bamboo Capital. The BRIDGE facility has a broad sector focus, including food security and nutrition, as well as financial inclusion and digital innovation, green economy and renewable energy, local public infrastructure, blue economy, and women's and youth economic empowerment. In line with its strategic framework which aims at expanding UNCDF's role as 'the United Nations flagship catalytic entity' to serve the wider United Nations Development System, UNCDF is planning strategic partnerships with other UN agencies to support nutrition. UNCDF contributes its finance expertise, and other UN agencies bring their thematic expertise on food systems, creating synergies. For instance, UNCDF and the World Food Programme (WFP) announced in 2022 that they will be joining forces in a strategic partnership to drive action against hunger through innovative financing (30). More specifically, UNCDF is working with WFP on a specific BRIDGE Facility window managed by UNCDF at the service of WFP's development goals on food security. In 2023 the facility will be launched with a pilot in Rwanda, deploying revolving financial instruments, loans, and guarantee to address WFP beneficiaries' finance needs.

GAIN, in partnership with Incofin Investment Management (Incofin), has been working on the launch of a permanent capital vehicle, the N3F, introduced in Cluster 1, a nutrition-first impact investment fund that will provide debt financing to SMEs in Sub-Saharan Africa that produce, process, distribute, or otherwise support safe and nutritious foods within the continent. The N3F debt fund has a blended finance structure, including first-loss capital, and is therefore discussed in more detail as part of the analysis of cluster 4.

1.1. CLUSTER 4: FIRST-LOSS CAPITAL AND GUARANTEES

First-loss capital and guarantees are de-risking instruments used primarily to crowd in risk-averse capital; the provider of the first-loss or guarantee usually has no intention to seek a return.

First-loss capital and guarantees are used in addition to other instruments, such as equity and debt, to reduce the risk associated with a transaction and attract private capital that would otherwise not participate in impact-driven investment (28). These instruments are usually used as an additional supporting layer for other instruments. Since the capital provider of first-loss capital or a guarantee needs to have sizable assets, it is often a suitable instrument for larger development and philanthropic actors.

	Basic Description	Financial Return
First-loss	A risk mitigation instrument in which a donor or other entity agrees to be the first to take losses generally if a business is unable to pay back investors (16).	No return or partial return

Guarantee	A risk-mitigation instrument that promises to repay all or some of the invested amount to the lender or investor in the case of default (16,31).	
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The N3F, first introduced in cluster 1, is the first nutrition-focused debt fund using a blended finance structure and aims to attract a variety of investors interested in improving nutrition in Sub-Saharan Africa (figure 3). The structure includes a first-loss mechanism that aims to de-risk and attract further capital into the fund itself. The case study below provides further details on the N3F financing mechanism.

Case study: Structure of the Nutritious Foods Financing Facility (N3F)

Fund manager: Incofin Investment Management

Background info: N3F aims to support SMEs involved in nutritious food value chains in Sub-Saharan Africa.

Structure: N3F uses a blended funding structure with different capital tranches based on risk-return expectations to attract a variety of investors (Figure 4). In particular, the catalytic share class will attract investors with higher risk appetite, as this class will serve as first-loss; the redeemable share class aims to attract investors looking for liquid instruments; and the locked-up share class targets long-term investors seeking some financial upside.

In addition to the Fund component, the N3F comprises a Technical Assistance Facility and a Monitoring, Evaluation, and Learning component, both managed by GAIN. The TA will help de-risk investments and improve SMEs' operational efficiencies.

The N3F is expected to be launched in late 2023.

Nutrition Focus: N3F is the first impact investment fund explicitly focused on improving access to nutritious food in Africa, particularly for lower-income consumers.

In addition to being assessed in terms of financial viability, potential investee SMEs are evaluated through nutrition impact screening to ensure alignment with the nutrition impact targets set by the fund. Over the last 2 years, a pipeline of over 100 diverse agribusinesses across Sub-Saharan Africa has been built, with most SMEs active in the processing and production stages and in the cereals, fruits and vegetables, poultry, and dairy value chains.



Figure 3 3 - N3F's blended finance structure

While the N3F represents an example of a first-loss mechanism included in a facility with a nutrition focus, the authors of this paper were unable to identify any applications of guarantee mechanisms to nutrition investments. However, as these mechanisms have been widely used in adjacent sectors, such

as sustainable agriculture and smallholder farmer financing, there is likely some potential to leverage them for nutrition. Looking at adjacent sectors, such as sustainable agriculture and smallholder farmer financing, offers two examples of guarantees.

In order to encourage banks and other investors to invest in small businesses, the Swedish International Development Cooperation Agency (SIDA) established a guarantee instrument. The guarantee was created following SIDA's observation that many SMEs in developing markets, particularly those led by women or young entrepreneurs, have difficulty obtaining finance. The guarantees were intended to enable businesses and entrepreneurs in LMICs to access capital more easily, thereby facilitating investments that help reduce poverty. SIDA offers guarantees in 30 countries in Africa, Asia, Latin America, and Europe, available in four different forms: a Loan Portfolio Guarantee (covering several loans in a financial institution's portfolio on an ongoing basis), Project Finance Guarantees (guaranteeing a single loan between an identified lender and borrower), a Fund Structure Guarantee (covering a fund set up to attract capital for a certain purpose), and a Balance Sheet Guarantee (leveraging Sweden's high credit rating, so the lender can increase its lending) (32). With a guarantee that is backed by the Swedish government and thereby acts as insurance for the lender, banks and investment funds take the risk of offering loans to small businesses and entrepreneurs, resulting in increased capital mobilisation for development purposes. Most of SIDA's guarantee projects cover part of the lending to SMEs in key sectors, such as agriculture and health. By the end of 2021, the total guaranteed amount in SIDA's active portfolio amounted to SEK 10.3 billion, equivalent of US\$988 million (33). The SIDA guarantee has not been employed to grow the portfolio of nutrition-focused SMEs to date, but there is potential to start leveraging it for this sector in the coming years.

A similar instrument is offered by the African Guarantee Fund (AGF). AGF is a non-bank financial institution with the mandate to facilitate access to finance for SMEs. Its shareholders are Danida (Denmark), AECID (Spain), AfDB, AFD (France), and the Nordic Development Fund (NDF). With the provision of several types of guarantees, AGF wants to contribute to economic development in Africa, as African SMEs often have difficulties accessing finance from the formal financial sector for growth and innovation, while they are widely recognised as major drivers of economic growth. AGF assists financial institutions to partially cover the risks associated with SME financing through its guarantee facility, which can be complemented by capacity-building support through its capacity-building facility. An example of AGF's work is its partnership with responsAbility Investments, an impact investor that specialises in investing in emerging markets. Through an AGF Loan Portfolio Guarantee facility of US\$5 million, responsAbility will increase financing to SMEs in agricultural value chains, specifically to businesses engaged in crops and farming products or commodities (34). Although this facility is not explicitly targeting SMEs in nutritious food value chains, in theory it could add a focus on businesses growing nutritious crops or providing the inputs and services needed to do so, thereby leveraging this guarantee to help improve nutrition.

DISCUSSION AND CONCLUSION

The landscape of innovative finance is vast, with many different options for using financial mechanisms to achieve development goals. However, as this paper has shown, the application of these approaches within nutrition has been rather limited to date. Figure 4 uses the framework

introduced in Figure 1 to map out the main nutrition-related innovative finance approaches that currently exist (or are being developed).



Figure 4 4 – Cluster map with example nutrition initiatives. Dashed line indicates initiative does not explicitly state or monitor nutrition impact

These different approaches do not live in silos, and GAIN’s N3F offers a useful example of how multiple types of innovative finance can be used in one mechanism. It uses a blended finance structure, including a ‘first loss’ function (Cluster 4). With this funding, it provides debt to SMEs (Cluster 3). Some of the pipeline companies have benefited from pre-investment TA to improve their investment readiness, and TA will be further used to de-risk investments once loans are made (Cluster 1). Multiple types of innovative finance can thus be used jointly in a complementary way to reduce risk or increase the overall value of the investment – both for the investors and for the social good.

Our review has indicated that grants and TA, whether within blended finance transactions or (particularly) as a precursor to investment, are probably the most widely used and well-established mechanisms, including with a food and/or nutrition focus. Debt and (to a lesser degree) equity are also widely used – though not necessarily with a specific focus on nutritious foods. In contrast, impact-related funding within nutrition is largely in its infancy, with three initiatives in the exploratory phase or preparing for launch as well as one operational fund that targets some nutrition-related sectors, though without a specific focus on nutrition impact. First-loss capital has been widely used in other development sectors, but with limited application to date in nutrition, whereas guarantees are less commonly used and – to our knowledge – have not yet been applied within nutrition.

However, all these mechanisms have potential for further application within nutrition. To understand which are the most promising, it is helpful to divide nutrition-related products and services into those which can be delivered through profitable, market-based approaches and those which cannot. Products and services that can be profitably provided to LMIC consumers are generally limited to food products – perhaps with some small market for nutrition-related education and/or counselling,

particularly among wealthier groups. In contrast, products and services like prevention and treatment of acute malnutrition among vulnerable children, micronutrient supplementation, and most forms of nutrition counselling and education are generally associated with a low ability or willingness to pay for the products/services at market prices, making it unlikely that they could be provided profitably through market-based approaches. In these cases, the innovative financing options are more limited, but impact-related funding (specifically outcome funding and impact bonds) offer some options, as demonstrated by the Save the Children example. These are particularly promising due to the focus on increasing both financing and impact – implying better outcomes for both the implementer and the investors/funders (as well as the social goals that both are seeking to achieve). At the same time, there will be an ongoing role for ‘traditional’ development funding to play in terms of supporting these types of non-marketable interventions.

For the latter type of approaches, which can be delivered profitably through markets, the options are wider: impact-linked finance can be used in these cases to amplify positive social outcomes, debt and equity can be deployed either in a traditional manner or using novel approaches such as revenue-based financing or a permanent capital vehicle, first-loss capital or guarantees can be used to support these debt/equity investments, and grants and TA can be used as part of blending and to improve investment readiness. Impact-linked finance and guarantees, in particular, emerge as approaches that have shown success in other sectors and have considerable flexibility to be deployed in favour of nutrition. For example, impact-linked finance could be used to reward food companies that make their products more nutritious, more affordable, or more accessible to those at most risk of malnutrition.

Developing and deploying any of these approaches will require new partnerships between the nutrition and finance sectors. Nutrition actors can support their development by engaging with non-traditional collaborators, such as development finance institutions, commercial banks, and investment managers; by thinking creatively about ways to attract new financing approaches to their work; and through the development of the metrics and tools—and evaluation approaches—that can ensure the investments are indeed nutrition-supporting (35). They can also work with those from other sectors that have more experience with innovative financing. This can help both to share approaches and lessons learned and to identify potential areas where both sectors could benefit from aligned, joint approaches. Such ‘double win’ approaches could include supporting foods that have both nutritional and environmental benefits (e.g., biofortified beans, one of the products promoted by the GFIF); innovations that can work to reduce food loss and waste, with both environmental and nutrition dividends (e.g., as done by Kilimo Fresh, the ILF for ESA investee); and supply chains that improve the livelihoods of smallholder farmers while providing nutritious foods to the market (e.g., as is the case for many of the N3F investees, who work with smallholder-focused supply chains).

As this review has shown, many of the attempts to apply innovative finance within nutrition are in their early stages. This indicates an exciting near future for this space, with considerable growth and innovation to be expected. It will be important to carefully document, evaluate, share, and learn from these initial experiences in order to extend the development of innovative finance for nutrition—and in so doing amplify the positive impact that development-sector and private-sector actors can have on reducing malnutrition in LMICs.

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