

Synthesis of a consultative stocktaking process to inform

The Dutch DGIS Strategic Knowledge and Innovation Agenda in relation to SDG2

Contributing to sustainable and inclusive food systems in low and middle income countries through knowledge and innovation



Food & Business
Knowledge Platform



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The consultative stocktaking, carried out by the Food & Business Knowledge Platform (F&BKP), on which this report is based, was commissioned by the Ministry of Foreign Affairs. The content of this report does not necessarily reflect the views of the F&BKP.

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Preface

In autumn 2019, the Dutch Ministry of Foreign Affairs, Department-General for International Cooperation (MinFA/DGIS), Inclusive Green Growth - Food and Nutrition Security (IGG-FNS) cluster, will present a new Strategic Knowledge and Innovation Agenda (SKIA). An initial concept note was drafted by IGG-FNS early 2019. It provides initial ideas regarding possible directions for the SKIA. This was followed by a consultative stocktaking process (facilitated by the Food & Business Knowledge Platform (F&BKP) in April-June 2019) which involved consulting a range of experts as well as key policy documents and literature. The F&BKP is very thankful to MinFA, the Ministry of Agriculture, Nature and Food Quality (MinAgri), CGIAR, NWO-WOTRO Science for Global Development and all experts that have devoted time to feed the consultation process.

This report is a tentative translation of the consultative stocktaking process in the view of core policy documents which present current Dutch policy on Food and Nutrition Security (FNS), including the recent policy letter of MinFA and MinAgri “*Op weg naar een wereld zonder honger in 2030: de Nederlandse inzet*” and as defined by MinAgri in a.o. “*Nederland als koploper in kringlooplandbouw vraagt om kennis en innovatie met impact*”. The process included 1) Input sessions with representatives from MinFA and MinAgri; 2) Interviews with selected experts from embassies, research organizations, policy institutions, INGOs, and private sector partners (analyzed and synthesized anonymously); 3) A desk study to summarize key information on recent and ongoing relevant research programmes funded by the Dutch government and by the EU; 4) Relevant literature as referred to in the course of the consultative stocktaking; and 5) Specific input from CGIAR including the evaluation of the NL-CGIAR Strategic Partnership and NWO-WOTRO on evaluations and reports of running research programmes.

The time frame in which this report had to be developed was short, limiting the scope of literature research and the number of experts that could be consulted. This also means it was not possible to work with MinAgri on one joint/complementary strategic knowledge agenda, nor to explore and define a broader knowledge policy including knowledge exchange, capacity building and use (by for example policymakers and practitioners). This report is therefore pragmatic in focus, neither involving a wider analysis of the role of knowledge in MinFA/DGIS IGG-FNS policy, nor extended options for strengthening policy and programmes. The intention is to streamline the MinFA and MinAgri knowledge and innovation agendas and look for synergy and complementary actions.

1. Introduction

1.1 Background and purpose of this agenda

For many years, the Netherlands has invested in the development of knowledge and innovation, and their use, through research in the field of FNS in low and middle income countries (LMICs). Since 2016, this is guided by the framework of the Sustainable Development Goals (SDGs). Such research investments are a significant part (around 12%) of the total of Dutch initiatives contributing to FNS through international development cooperation. Findings from related research are meant to inform Dutch policy on investments in FNS-related initiatives in LMICs, and to support, through innovation, wider initiatives towards greater efficacy in relation to SDG2 impact.

Knowledge and innovation emerging from research efforts is critical to be able to effectively contribute to SDG2 impact in LMICs, as underlined by the recent FNS¹ and F&BKP² evaluations. Challenging ideas and new insights are needed to foster breakthrough and improve policy and practices for better SDG2 results. An FNS Research Programme which contributes to SDG2 also strengthens Dutch and LMIC FNS research capacity, keeping research communities committed and supporting effective policy and science connections. Such a programme will therefore remain an important component of wider Dutch policy on investments towards SDG2 impact in LMICs. As recommended by the F&BKP evaluators (2018), alignment with (specific) MinFA and MinAgri policy and programmes in partner countries will be strengthened. To stimulate effective use towards SDG2 impact, research should remain inclusive and match with demands of relevant stakeholders, not only Dutch policymakers, but also other relevant stakeholders mainly within LMICs. Through knowledge networks in which Wageningen UR and CGIAR

¹ [Review of Dutch food security policy 2012-2016](#) (IOB, 2018)

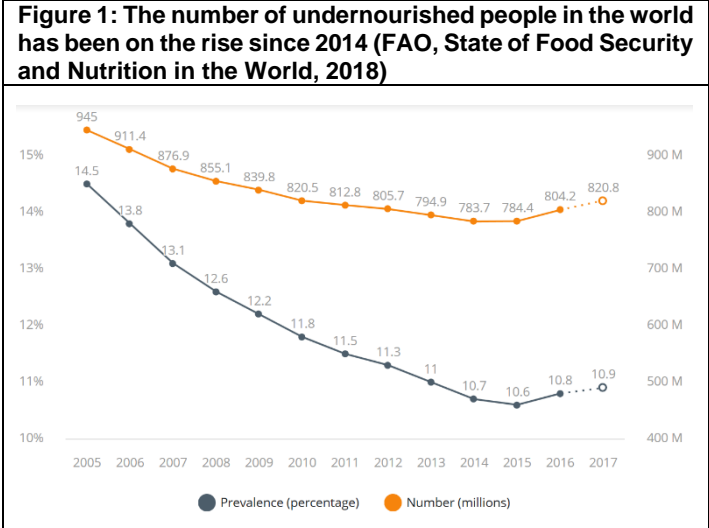
² [Co-creating \(Dutch\) diamonds, gold \(standards\) and silver \(bullets\) in the food security and agricultural business maze](#) (Dietz & van den Broek, 2018)

are dominant, the Netherlands has invested heavily in generating knowledge and technology for agricultural development over the past years. Continued investment is needed to support the Dutch focus regions in solving their food systems challenges and to stimulate smarter policymaking and implementation. The SKIA will focus on the scope of further research and enhance its relevance for potential users of knowledge and innovation. This will help to further reduce fragmentation and enhance use of the potential of research products in policy and practice, the same way as the NL-CGIAR Strategic Partnership has done since 2015. A clear strategic focus and coherence will enhance the efficacy of direct and indirect Dutch contributions to SDG2 impact. It especially includes the need for strengthening connectivity between research and policy/practice and synergy within research. The SKIA responds to this need as well, in line with recommendations from the F&BKP evaluation (2018, see footnote 2) which calls for reducing fragmentation in research agendas and strengthening alignment. A number of research programmes is defined in the SKIA to operationalize its strategic purpose and focus, including the continuation of existing programmes.

1.2 Motivation for this agenda

The need

The number of chronically malnourished people has increased since 2014 (Figure 1) and 113 million people suffered acute hunger in 2018³. Hunger and malnourishment are disproportionately concentrated in Africa⁴. This happens in spite of sufficient food being produced. Moreover, a third of all food produced is lost, mostly as a result of postharvest loss in Africa⁵. There is broad agreement on the need for thinking and acting from a global food systems perspective to address underlying causes. *Agriculture & Food Systems to 2050* (World Scientific Studies/ CGIAR 2018)⁶ argues that research and policy need to re-orient itself to be able to address an emerging perfect storm of global threats and opportunities in relation to dynamics such as urbanization, disruptive technologies, and climate change. The *TEEB report on agriculture and food systems*⁷ further elaborates on emerging challenges related to environmental degradation, employing an additional 1.5 billion people, and developing rural societies, *specifically for youth*. Both studies argue that food systems thinking is needed to identify synergies and trade-offs between the SDGs and to identify leverage points for policies and interventions to be able to address these challenges. This translates, in particular, to a challenge to securing access to sufficient food and healthy diets for poor populations which are growing and mobile, and securing such access in socially, economically, and environmentally sustainable ways. The above reports, including the *EAT Lancet report* (2019)⁸, represent a widely recognized need for substantial shifts in food systems, which subsequently requires a shift in common approaches related to FNS and to food systems thinking and action (Ruben et al. 2019⁹). The SKIA is meant to connect to such challenges, identifying a matching and appropriate focus and orientation of related research and innovation. Sections 3 (page 8) and 4 (page 19) elaborate on this.



The opportunity and responsibility

The recent IOB evaluation, *Food for Thought* (2018), is generally positive about what research has contributed to increased farm production and income in particular, noting the difficulty of assessing wider

³ [Global report on food crises](#) (FSIN Platform 2019)

⁴ [The Global Hunger Index](#) (ACTED, 2018)

⁵ [The future of food and agriculture – Trends and challenges](#) (FAO, 2017)

⁶ Serraj & Pingali (Eds), 2018

⁷ [The Economics of Ecosystems and Biodiversity](#) (TEEB, 2018). This and the above study represent a wider body of literature which makes similar observations

⁸ [EAT-Lancet Commission Summary Report](#) (2019)

⁹ Ruben et al., 2019. [The Challenge of Food Systems Research: What Difference Does It Make?](#) Sustainability 11, 171.

SDG2 related impact on malnutrition and assumed trickle-down effect. Considering that the Netherlands has a lot to offer in this field which LMICs can potentially benefit from, including the Dutch Diamond approach (wide-ranging cooperation between government, companies, CSOs and knowledge institutions), extensive private agri-horti-food sector, Wageningen UR and other research capacity. As the Minister for Foreign Trade and Development Cooperation (BHOS) says in her policy note *Investing in Global Prospects* (2018), “With its advanced agricultural knowledge and capacity for innovation, the Netherlands can play a key role in developing agriculture around the world”. This includes areas of specific Dutch expertise and experience such as the horticulture and seed sector, and specialties such as biological pest control and food safety.

In line with the above, the Dutch government aims to position Dutch knowledge and expertise internationally, which is supported by the MinFA, MinAgri, Netherlands Enterprise Agency (RVO), and Dutch embassies. This aim relates to includes supporting FNS locally as well as supporting Dutch commercial interests, provided that the first cannot be compromised because of the second. By adopting the 2030 Agenda, the Netherlands has committed to leave no one behind in the implementation of the SDGs. This means that efforts to support improvements in the field of food and agriculture need to pay particular attention to implications for the poorest and the most vulnerable among them. The Netherlands is privileged to have innovative sectors in the field of agriculture, horticulture, water, and food, as well as adaptive technologies and propagation materials, and with effective partnerships (the Dutch Diamond), while enjoying an excellent international reputation in these fields¹⁰. This is the basis for Dutch opportunities and responsibilities to contribute to SDG2 in LMICs. At the same time, the Netherlands is part of an international community which is confronted with a need to transform its own food systems¹¹ and can benefit from research and innovation in collaboration with partners in LMICs.

2. Dutch policy background for this SKIA

The SKIA will not address the entire range of challenges related to food systems in all LMICs. The DGIS policy on FNS, and their cooperation along these lines with MinAgri, has been the guiding framework for the consultative stocktaking for SKIA in terms of approach and focus. This section outlines essentials of current Dutch policy¹² on contributions to SDG2 and to FNS more specifically in terms of thematic focus and approach.

2.1 Policy thematic focus

The Netherlands is committed to making a significant contribution to a world which is provided with sufficient and healthy food. In this, the SDGs form the framework guiding Dutch efforts. In relation to food security, SDG2 is the overall focus: End hunger; achieve food security and improve nutrition; and promote sustainable agriculture. This translates into three focus areas (pillars) of Dutch policy on FNS in LMICs:

1. Eradicating hunger and malnutrition: contributing to the end of hunger and malnutrition through access to sufficient and healthy food for all in 2030 (SDG targets 2.1 and 2.2). Key stepping stones towards these targets are improved local availability of nutritious food, improved access to and utilization of nutritious food for the most vulnerable, and improved resilience and stability of local food conditions. Investments in programmes related to this pillar have the ambition to have enabled 32 million people (mainly children under two and their mothers) to sustainably leave undernourishment by 2030.

2. Promoting inclusive and sustainable growth in the agricultural sector: contributing to a doubling of productivity and income of smallholder farmers in 2030 (SDG target 2.3). Key stepping stones towards this target are improved access to and use of productivity-raising means of production, improved access to input and output markets, and improved resilience of farming enterprises. Investments in programmes related to this pillar have the ambition to have enabled 8 million family farms (crop/livestock/fish) to sustainably double productivity and/or income by 2030.

¹⁰ [International comparative benchmark of Dutch Research Performance in TKI themes: Horticulture](#). A report prepared by Elsevier for the Netherlands Enterprise Agency, (December 2014).

¹¹ See e.g. [Global Assessment Report on Biodiversity and Ecosystem Services](#) (IPBES 2019), and [EAT LANCET report](#) 2019.

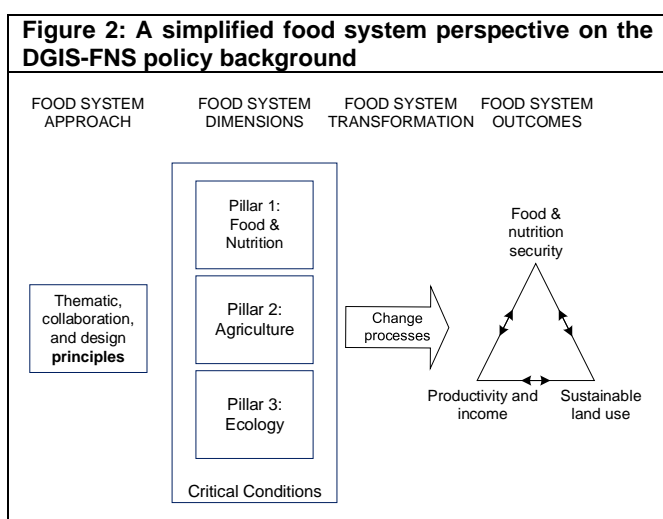
¹² “[Op weg naar een wereld zonder honger in 2030: de Nederlandse inzet](#)” (shared MinFA & MinAgri strategic document, June 2019); MinFA ToC FNS (Oct., 2018); IGG FNS Targets: Results and Indicator Framework (2018); and DGIS-IGG-FNS consultative meeting (May 2019).

3. Realizing ecologically sustainable food systems: contributing to sustainable food production systems and ecologically resilient agriculture in 2030 while retaining genetic agrobiodiversity in 2020 (SDG targets 2.4 and 2.5). Key stepping stones towards these targets are environmentally more responsible farming and use of farmland, pastures, and fishing grounds (while contributing to improved resilience to shocks), and improved governance and management of landscapes and watershed. Investments in programmes related to this pillar have the ambition to have enabled 7.5 million hectares of farmland (including pastures and fishing grounds) sustainably converted to sustainable use by 2030.

Making such contributions involves an engagement with critical conditions which enable opportunities for change. These include knowledge & innovation system development, food & agribusiness development, land rights & security, food policies, women and youth empowerment, and governance alignment. The Dutch policy focus¹³ for the coming years will be in particular on sustainable and circular food systems, with specific attention for nutrition, gender, and employment, particularly through

harnessing the potential of innovation, climate adaptation, and reducing food loss (and waste), with focus on the most fragile regions. The sectors of plant and animal starting material (seeds, breeds), and oceans and fisheries will be given specific attention since they are crucial for sustainable food systems, while they tend to be less in the picture.

The policy approach is meant to guide the way in which to interpret and apply the thematic focus. For example, the three pillars of Dutch policy on FNS in LMICs are helpful in clustering specific contributions to FNS. However, even though a particular focus will be applied, efforts are meant to be guided by a food systems perspective which connects



the three pillars and related critical conditions (Figure 2).

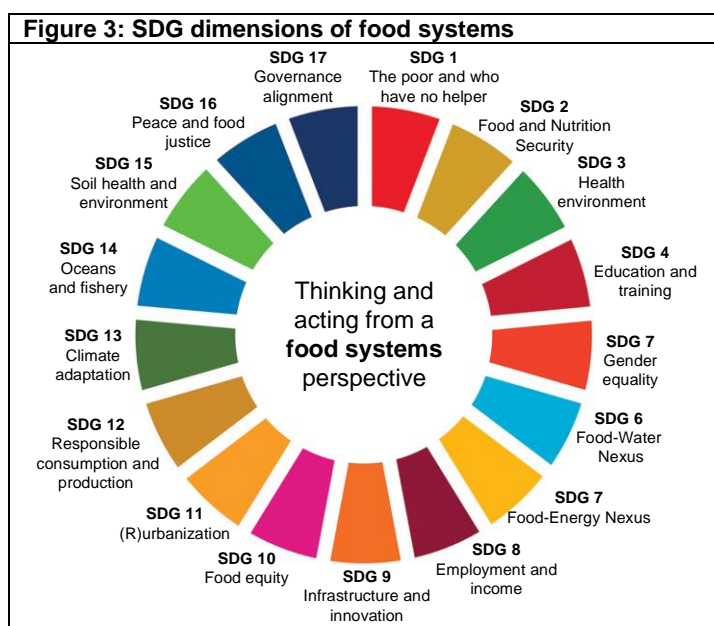
2.2 Policy approach

The following key principles underpinning Dutch policy in relation to knowledge and innovation for FNS in LMICs have been derived from relevant policy documents and discussions with DGIS-IGG-FNS staff.

Thematic principles

Systems orientation. Thinking and acting from a (food) systems perspective on Food and Nutrition Security.

SDG impact. The SDGs are the guiding framework which orientate contributions to SDG2 (Figure 3).



¹³ "Op weg naar een wereld zonder honger in 2030: de Nederlandse inze!" (MinFA & MinAgri, June 2019)

Geographic focus. Emphasis on DGIS focus countries, notably the Sahel, the Horn of Africa, and the Middle-East and North-Africa region (MENA).

Optimal use of knowledge. Finding an appropriate balance between knowledge creation, exchange and use.

Social inclusiveness and environmental sustainability (including circularity). These are cross-cutting non-negotiables as research and intervention focus.

Contextualization. Needs and opportunities in focus countries are of primary importance in decision-making. To be operationalized in context-specific development of approaches to sustainable agriculture and horticulture, down to company-level.

Collaboration principles

Multi-stakeholder approach. Harnessing the potential of the Dutch Diamond through partnership and co-creation with partners in focus countries.

Policy alignment. Seeking alignment with partners (notably MinAgri) and peers in investments in FNS/LMICs-related knowledge and innovation. This entails alignment across sectors, but also different policy interests per scale (international, national, regional, local). Reduce fragmentation both internally in programmes in the Netherlands, but also internationally, including EU-Africa.

Appropriate Dutch role. Considering the Dutch comparative advantage and Dutch niche for contributing to SDG2. These include horticulture, nutrition, value chains, environmental sustainability, systems approach, enabling and scaling / PPPs, gender and seed sector (development).

Design principles

Research in and for development. Appropriately interactive roles of research 1) to understand what works for development and how development works out, and 2) to develop options and opportunities to support development processes continuously from the onset (from before the start on, and during implementation until the evaluation), with a systems perspective on role of research.

Relevance. (Contextualized) research needs to be relevant in view of policy & practical purposes. This includes supporting and enabling the learning and adaptive capacity of Dutch policy and practitioners, enhancing the quality of policy decisions, investments and programme implementation, and as such increasing impact.

3. Main findings from the consultative stocktaking process

In this section main findings from the consultative stocktaking process which informs the SKIA are presented. It includes a description of knowledge needs as expressed by the consulted policy partners and an overview of current Dutch funded research.

3.1 Knowledge needs

This sub-section provides an overview of essential knowledge needs as expressed during input sessions with representatives from MinFA and MinAgri and interactions with selected policy partners from relevant research organizations, policy institutions, civil society, and private sector (see Annex 1). There was much coherence in the inputs of the various sectors. Knowledge needs relate to different angles on knowledge, including: *target group* related (what people/groups we need to focus on), *themes* related (what subject matter we need to know about), *geography* related (what place/area we need to know about), and *design* related (what type of research is needed).

The consultative stocktaking process responded to specific knowledge needs considered relevant in view of the Dutch FNS/LMICs policy as outlined in section 2, and appropriate in view of related current Dutch policy and practice (in LMICs) challenges and opportunities. Inputs were found to be largely



complementary and overlapping. In all expert exchanges the actual Dutch FNS policy formed the starting point. The following presents a synthesis of input from consulted experts. Reflections on institutional collaboration opportunities have been integrated in section 4.5.

3.1.1 Related to target groups

It was suggested that through research, policymakers and implementers can broaden and strengthen their own knowledge base and capacity to formulate and carry out policies more effectively. From the consultation process it became evident that research should be targeted at policymakers and implementers (including e.g. embassies, NGOs, farmer organizations) not only in the Netherlands, but also, and according to some primarily, in LMICs, as they design countries' policies and strategies and finance (or co-finance) implementation of such policies and strategies. There seems to be a broad consensus that research and its target group are not confined to IGG, but should serve a broader target audience (e.g. policymakers in LMICs). However, while it was suggested that research use should be focused on policymakers and implementers, it was stressed that knowledge that is deemed relevant should be informed by the needs of the people that are targeted through Dutch FNS policies. Currently, the knowledge agenda was said to be too "donor driven" and should shift towards a more locally demand driven and context specific strategic agenda including the perspective of e.g. farmers (different types of smallholders) and women.

3.1.2 Related to themes

The following are main themes which were discussed.

a. System change towards sustainability

Much attention and importance was given to knowledge needs and questions that deal with aspects of system change; this concerns not just technical aspects, but requires a serious shift. First and foremost it was stressed that in the current MinFA policy attention for system change was too marginal and that a "system approach" appeared to be absent in the MinFA FNS policy framework (2014) consisting of the three pillars. In relation to these pillars, it was often reported that synergy and interaction between the pillars seems to be missing. The three FNS pillars cannot be tackled in isolation. Also it is important to align with main priorities for FNS of MinAgri.¹⁴ Currently there is a strong focus on pillar 2, however a better focus would be pillar 3, as there is relatively little knowledge about this pillar. Circularity and nature-inclusiveness have become central focus of the government's national policy on agriculture and food. Moreover, pillar 3 is seen as a basic condition for pillar 1 and 2. Some propose a more fundamental step, namely to completely move away from the compartmentalization into pillars. A system change approach was also mentioned as useful in addressing nexuses, such as humanitarian aid & development, water-energy-food, climate-fragility-water, again to prevent compartmentalization. Furthermore, the focus on SDG2 is viewed as too limited, interaction with other SDGs is missing. SDG2 is not an isolated goal and linkages between the SDGs are needed for SDG2 to reach its full potential. This integral and multidisciplinary approach is necessary, as the SDGs are interconnected in food systems (see next sub-section). For the transition from a value chain approach to a food systems approach, a system change approach is essential.

Inclusive and sustainable food systems

While great emphasis is placed on inclusive and sustainable food systems, informants stressed that there is still little understanding of what it entails to actually adopt a food systems approach. Caution is required to avoid that in practice a food systems approach becomes a glorified value chain approach. There is a need to first build a sound understanding of and then further develop a food systems approach, before implementing interventions related to food systems. The landscape approach and the Food2030 agenda were suggested as practical "tools" to implement a food systems perspective. This also requires research on larger food systems transitions involving shifts in production, and the role of economic policies and governance (and related power processes).

¹⁴ MinAgri actually considers to follow these four priorities in the near future, following Van Berkum and Dengerink "[The food systems approach: sustainable solutions for a sufficient supply of healthy food](#)": 1. Climate change and water scarcity; 2. Urbanization and shifting diets; 3. Productivity, hunger and nutrition; 4. Deforestation and decreasing biodiversity.

Nutrition and behaviour

According to the informants, another knowledge need and current gap related to food systems, concerns various issues related to nutrition, knowledge of nutrition and (required) social and behavioural change. More attention is requested for the triple burden of nutrition, the influence of nutrition knowledge on consumption, the relation between fortified food and improved nutrition, culture and context sensitive nutrition (including micronutrient deficiencies and food safety) knowledge, seeds, agronomy, and fruits and vegetables.

Demand (consumer perspective) and supply (producer perspective)

Currently much focus is placed on the (primary) producer, the supply side of food, while the role and influence of the consumer, the demand side, is often not adequately addressed. Related to this is the need for more insights into market-oriented entrepreneurship to ensure purchase of the produced goods.

b. Inclusivity

Special attention was asked for the most marginalized and vulnerable people as this group is currently considered to be insufficiently addressed. Research into these target groups (like who they are and where they live) is considered important. Other inclusive knowledge needs related to these people concern (chain) equity (who earns what), the role of social transformation (including equity, child labour, gender) to achieve inclusivity, and the future of farming. Another point of attention is that not everyone will be able to continue working in the agricultural sector: what will be the role of social safety nets, if they exist at all.

c. Context specific knowledge

Context specific knowledge is essential as it is a way to understand the needs of people in food insecure regions and the economic (e.g. failing markets), political (e.g. weak governance, fragile states, land rights, conflict), social and cultural context of a country (from a food systems perspective) with attention for trade-offs. Once this understanding is built, policies can be formulated, including local agricultural policies.

d. (Macro) structures and processes

As stated in sub-section c. above, context specific knowledge is highly relevant to understand the structures and processes locally, regionally and nationally. However, there are also global structures and processes at play that can affect local structures and processes. Therefore, it is important to understand these as well. The informants mentioned several structures and processes that require more knowledge related to *planetary boundaries* (like climate change, population growth and its influence on sustainable production, pollution and the loss of biodiversity, migration). They also mentioned several structures and processes related to *socio-political economy*, such as legislation constituting barriers (like access to justice, perverted subsidies such as on pesticides), attention for political power relations, institutional mechanisms and interests.

e. Private sector and trade

During the consultation it became evident that the role and influence of the private sector should receive more attention in research. On the one hand it was mentioned that potential trade-offs of the Dutch agrosector should receive more focus. The human impact (decent income) of the private sector also requires more investigation, and knowledge of how to successfully create public private partnerships is necessary. Besides the Dutch private sector, the local and international private sector should be scrutinized. On the other hand research on trade and trade facilitation was mentioned as it has the potential to be a vehicle to promote FNS (including minimizing import dependency, E-certification, Codex Alimentarius).

f. Technology

Exploring different technologies (like disruptive technology (blockchain), (forms of) frugal innovation, conducive technology (postharvest), scaling technology, out grower schemes, digitalization/ICT) were mentioned as great opportunities to contribute to FNS, especially for the youth. However, some caution was expressed as well, particularly on whether investments in technologies have a long-term impact

and on the lack of ownership in LIMCs. Furthermore, technologies that are developed in the Netherlands need to be customized to fit the context in LMICs (appropriate technology).

g. Innovation and scaling

While scaling is considered useful, informants questioned whether the Netherlands should be focusing more on innovation (such as new pest controlling technologies or community based seed sector development, to be aligned with MinAgri and the relevant Top Sectors) rather than on scaling. The latter could be left to other parties such as the EU and World Bank. Although that does not resolve the gap in knowledge with regard to how and if to scale, i.e. evidence-based scaling and related issues of financing and enabling actors.

h. The FNS knowledge ambition of the Netherlands

While the Netherlands wishes to play a prominent role in FNS knowledge, some critique was expressed as well, not so much on this ambition, but on the level of execution of the Netherlands, the so-called “practice what you preach”. For instance, the Netherlands is currently not living up to the concept of circular agriculture, since it is for example still importing poultry from South-America or and not seriously transitioning to non-animal proteins.

3.1.3 Related to geography

Although not given much attention to by the consulted experts, the input delivered covers a variety of perspectives as to where FNS research should be conducted, ranging from mega cities to fragile regions/ countries in (post-)conflict. Moreover, some wished to challenge the current focus countries and start a new (multi-stakeholder) debate on which and how many countries should be included as Dutch focus countries.

3.1.4 Related to research design

The following principles for the design of research programmes were discussed.

a. Research in Development

The importance of research incorporated in FNS programmes/interventions was stressed by informants from various backgrounds. They explained that learning trajectories in large Dutch programmes/interventions would be of great value to scrutinize the Dutch added value and to gain insights into the indirect effects as well. Such learning from interventions and programmes was mentioned as a great need, especially for the MinFA FNS cluster. It was stated that policy is currently too assumption driven. Therefore *testing and critically reflecting on the assumptions* behind the current policy and looking at them in a more holistic and context specific manner is essential. This also helps to justify choices that are made for certain programmes/interventions.

After learning from previous programmes/interventions and testing assumptions to better understand contexts, the next step should be to include *context research* in new programmes/interventions. Before implementing any type of programme/intervention, a sound understanding of the context is considered absolutely vital, both for successful implementation and for better chances of lasting impact. Moreover, learning loops and system analysis should be included at the start of new programmes/interventions with periodic learning loops throughout the implementation.

Once programmes/interventions are implemented, there is a need for *impact studies* to see whether there is a conversion of reach to impact and what the long term impact is. Impact pathways and development outcomes are a necessary part of programmes. In turn, insights from ex-post impact assessments need to feed into foresight and prioritization of the next phase of programmes.

b. Applied research

Informants mentioned applied research as an important tool to find “solutions” for practical issues that they face in the field of FNS. These can be various topics ranging from technological solutions and innovations to the effectiveness of public-private partnerships. It also offers ample potential to capacity development of local stakeholders and can serve as stimulation for private actors to contribute more to knowledge and innovation projects, for example via “living labs”.



c. Fundamental research

Despite the great need for practical knowledge, the importance of fundamental research was still stressed, in particular on food systems, where there seem to be several gaps theoretically and conceptually. Gaining such knowledge would help building a better understanding of how a food systems approach could be rolled out in practice. Moreover, research on the enabling environment and in particular sound social-political research was mentioned as a knowledge need.

d. Research overview

It was considered important to know who is doing what and where and how it relates to each other, including the related force fields. Not just in the Netherlands but also internationally, for instance which countries are considered experts on certain themes or areas. This way, especially from a food systems perspective, research/programmes/interventions can be complementary.

e. Space for interesting and “crazy” outliers

A desire was expressed to offer space for “out of the box” research that is not necessary part of large research programmes or established research institutes.

f. Participatory multi-stakeholder research

Understanding and involvement of MinFA programme beneficiaries (e.g. different types of -women-farmers, SMEs, consumers) and related partners (e.g. involved embassy staff) was regarded essential for the (long-term) sustainability/success of programmes. It was stated that currently these perspectives, especially of poor farmers, are insufficiently considered. Hence, participatory and bottom-up research were mentioned as tools to gain in-depth insights into this.

g. Capacity building and knowledge brokering

Capacity building activities were considered necessary for several purposes: to improve curricula, both in education (at all levels, e.g. universities, TVET, primary education) in LMICs and in the Netherlands. But also to improve the nutritional status of children, girls and women, improve access to inputs, innovations and appropriate technologies (e.g. IPM, geo data) and markets for producers, processors, traders and smallholders. Capacity building activities were also mentioned to strengthen and increase knowledge and skills of policymakers at all levels. However, a critical note from the informants accompanied this need, namely whether there is a lack of affinity for knowledge on the policymakers' side.

Optimal use of knowledge is one of the principles underpinning Dutch FNS policy in LMICs. Almost all consulted experts brought up the fact that many of the identified knowledge needs are already available, although perhaps not yet used. As a result, research needs to be targeted strategically to address knowledge gaps, and efforts to enhance knowledge exchange and use are critical to capitalize on existing knowledge and to prevent having an excellent train without having tracks for it to travel on. This involves both knowledge brokering (knowledge does not become accessible automatically) and support to capacity development (knowledge use does not happen automatically).

3.2 Brief overview of Dutch-funded research programmes and first results

This section outlines research programmes related to FNS and LMICs as funded through Dutch ministries. These are (potential) sources of relevant knowledge, and form the basis for the current SKIA as some research programmes are still running for several years. First, 3.2.1 provides an abbreviated overview of Dutch funded research programmes related to FNS in LMICs. Then, 3.2.2 and 3.2.3 present essentials from evaluations of the two largest research programmes funded by MinFA/DGIS IGG-FNS, the NL-CGIAR Strategic Partnership, and the Food & Business Research ARF and GCP.

3.2.1 Overview of Dutch-funded research programmes

The consultative stocktaking process included a quick scan of most FNS/LMICs-related research programmes which are funded by the Dutch government through different ministries (Foreign Affairs; Agriculture, Nature & Food Quality; Education, Culture and Science; Economic Affairs). There are broadly three types of such research programmes: bilateral, EU partnership, and wider multilateral. In

the following overview we have included research components which are part of wider FNS-related programmes in LMICs.

Bilateral FNS-related research programmes supported by Dutch funding from different ministries include: the Food & Business Global Challenges Programme; the Food & Business Applied Research Fund; the Amsterdam Centre for World Food Studies; the research programme part (seed money) of the Top Sector programme; the NWO Science-wide PPP fund – Agri & Food; the Joint SDG Research Initiative (NWO); the Cooperation Indonesia-the Netherlands related research; the WUR Knowledge Base research; the WUR Policy-supportive Research and agro-food related research within the INCLUDE platform.

EU partnership FNS-related research programmes supported by Dutch funding from different ministries include: different programmes within Horizon 2020 (ERAFfrica, ERA-NET – LEAP Agri); and DeSIRA (Development Smart Innovation through Research in Agriculture).

Wider multilateral FNS-related research programmes supported by Dutch funding from different ministries include: the FAO-Netherlands partnership; the Food for All partnership (the World Bank); the IFAD Adaptation for Smallholder Agriculture Programme; the CGIAR, notably the research programmes on Agriculture for Nutrition and Health (A4NH); Climate Change and Agriculture for Food Security (CCAFS); Water, Land and Ecosystems (WLE); Forests, Trees and Agroforestry (FTA); and Policies, Institutions and Marketing (PIM).

Table 2 presents essentials of the quick scan which illustrates the breadth of relevant Dutch-funded research programmes.

	Bilateral	EU partnership	Wider multilateral
Main themes	Food/value chain (efficiency); inclusive business models (for climate-smart agriculture); urbanization & food systems; food and nutrition security; themes mostly strongly overlapping with the policy focus as outlined in 2.2.	Agroecosystem resilience; soil and water conservation; sustainable intensification; sustainable/inclusive value chain development; technology development; food systems transformations	Agriculture for nutrition and health; Sustainable and inclusive value chains and sectors; Genetic resources and propagation materials; climate-smart agriculture; Long-term sustainability of agriculture; pro-poor value chains; market transformation; livelihood resilience
Main geographic focus	Partly overlapping with previous DGIS focus countries. Less in the current focus regions (specifically Sahel, MENA)	Africa; A broad range of countries (some 20) which are partly overlapping with current DGIS focus countries.	Including countries both outside and inside current DGIS focus countries.
Main types of research	A range of types of research, including quick studies (for client / evaluation), research as component in policy FNS programme, applied research in the field of Dutch FNS policy, studies related to current policy agenda challenges, and research in relation to long-term FNS challenges.	EU-Africa research collaboration. Mostly applied research in relation to focus areas of Dutch FNS policy.	Different types of research, mainly research as component in policy FNS programme, applied research in field of Dutch FNS policy, and research in relation to long-term FNS challenges.
Main research target groups	Mainly supporting Policy support in LMICs, and support of wider food systems actors in LMICs, as well as Dutch Policy development and implementation, and support of Dutch private sector (and civil society).	Aiming to support actors in food chains while at the same time supporting EU policy development and implementation.	Mainly aiming to support LMIC Policy, to support Private/Civil society in LMICs, and to support (inform) International Policy development.

A more complete version of this overview is available as spreadsheet upon request

A significant number of identified knowledge needs which were mentioned by consulted policy partners (section 3.1) are part of the research focus of the above programmes. Therefore, they present opportunities for collaboration with international (research) partners in response to knowledge needs expressed by Dutch policymakers and their partners. Such opportunities match earlier (section 1) highlighted need for enhanced alignment and coherence.

3.2.2 CGIAR Strategic Partnership evaluation

In 2015 the Netherlands (both MinFA and MinAgri) went from being a donor to an engaged partner for the CGIAR. Joint priority setting and the wish to enhance collaboration between the CGIAR and Dutch International Agricultural Research (IAR) resulted in a new approach to the relationship. Identified partnership priorities were:

Knowledge priorities:	Cross-cutting priorities:
Agriculture for Nutrition and Health	Gender Equality
Sustainable Value Chains	Enabling and Scaling
Effective Seed Systems	Public Private Partnerships
Climate Smart Agriculture	Systems Approach

The main part of the new partnership consists of direct support to the CGIAR organization and specific CGIAR Research Programmes (CRPs), identified based on the jointly identified knowledge priorities of the partnership (total of €79,9 mln. for 2017-2019). To enhance the partnership a total €15,1 mln. (2017-2021) is being invested in additional targeted support for strategic initiatives and links between the CGIAR and Dutch IAR:

- Research call on seed systems development. The knowledge priority effective seed systems has been addressed through a call for proposals. This was done because although the CGIAR does work on seed systems, these are usually commodity driven and commodity specific. Hence a joint call was organized through NWO-WOTRO together with the CGIAR and F&BKP.
- Senior Expert Programme. To enhance collaboration between the CGIAR and Dutch research organizations, the partnership facilitates the participation of Dutch senior IAR specialists in CRPs, in particular those with management responsibility within the CRP and who offer expertise and experience in the eight priorities for the partnership.
- PPP expert and resource person. Without the private sector, for-profit and not-for-profit, global sustainable development cannot be attained. To support the CGIAR in its collaboration with the private sector, and to facilitate links to Dutch expertise with Public Private Partnerships, an expert has been appointed.
- Co-funding instrument. This instrument was abandoned due to practical issues and game changers.

The partnership entails more than research and initiatives mentioned above. Within the larger Young Expert Programme (YEP) a special opportunity was created in 2015 to appoint young experts within the CGIAR in collaboration with a Dutch organization. A joint call was organized by Food & Business Global Challenge Programme (NWO-WOTRO and F&BKP) together with CCAFS for projects on Upscaling Climate Smart Agriculture. Finally, there is bilateral CGIAR project financing through MinFA and MinAgri only loosely linked to partnership activities.

The evaluation report presents detailed information on the research programmes in which Dutch stakeholders are involved, allocated budgets, the evaluation methodology and most relevant achievements so far. Since research in CRPs is still running and the supporting instruments only started recently, most outcomes are to be expected in the next few years.

Conclusions

An overview of main conclusions are listed in the following¹⁵. Recommendations from the evaluation can be found in section 5.2. From donor to engaged partner: the NL-CGIAR Strategic Partnership, started in 2016, is on the right track and showing its added value. The Netherlands has become more engaged in the CGIAR agenda setting, at the level of the whole organization and the CRPs. There is significant collaboration between supported CRPs and Dutch knowledge institutions and this collaboration has increased in quality, intensity and efficiency. Awareness of priority cross cutting

¹⁵ More detail on instruments, findings, and recommendations can be found in the upcoming evaluation report.

approaches has been raised significantly. The evaluation indicates that the new approach has resulted in:

- High relevance: the results of the CGIAR are well targeted towards the SDGs and the specific goals as set out in the MoU between the CGIAR and the Netherlands.
- Better collaboration: Collaboration between the CGIAR and Dutch IAR institutions within the priority knowledge domains and cross-cutting priorities has increased in intensity, quality and efficiency. Triggered by strategic focus on the knowledge domains and supported by the Senior Expert Programme and the the Seed System Development call.
- Encouragement of joint critical self-reflection and learning. The partnership is pulling each partner somewhat out of its comfort zone, which is leading to critical self-reflection. This strengthens learning and contributes to keeping the partnership aligned with future developments and societal challenges.

Regarding the actual achievements, it is concluded that the NL-CGIAR partnership is on target for quality and content towards the SDGs. Many results of the CGIAR are in line with the priorities of the NL-CGIAR partnership. Presence and visibility of gender equality in the work of the CGIAR could still be improved.

The supporting instruments started only recently but are now on track. The PPP-expert started and has presented an inception report. The Senior Expert Programme has enabled 10 senior IAR scientists from Dutch knowledge institutions to become engaged in strategy development within CRPs, acting as bridges and creating more synergy between Dutch IAR and the CGIAR through linking complementary expertise. In July 2019, the final batch of proposals will be awarded. The work on seed system development had a good start. In May the kick-off for nine projects took place in Addis Ababa and a high-level meeting was organized linked to the System Council Meeting. The Young Expert Programme fills gap but requires modification to become successful.

Overall, the NL-CGIAR partnership is on target for quality and content towards its specific shared goals. Co-creation takes time and investments which calls for attention for efficiency.

3.2.3 Food & Business Research, ARF and GCP evaluation preview

Background

The research programme Food & Business Research (F&BR) that is managed by NWO-WOTRO, consists of two funding instruments: the Food & Business Applied Research Fund (ARF) and the Food & Business Global Challenges Programme (GCP). ARF and GCP focus on FNS as well as private sector development in LMICs from a food systems perspective (GCP) and the 15 Dutch Partner Countries during the Ploumen administration (ARF). From early 2014 to early 2018, 45 ARF projects and 30 GCP projects have been funded via various Calls for proposals with varying thematic focus areas, defined through the consultation of the F&BKP network. ARF projects typically have a duration between 24 and 36 months and GCP projects have a duration of 36 months (Fast Track Research) and 48-60 months (Integrated Projects).

Policy context Food & Business Research

F&BR was developed within the framework of the Dutch policy for Food Security in 2014. The F&BR instruments aim to bridge the Dutch policies on development cooperation and on economic development (in particular the Dutch Top Sector policy) and focus on the synergy and mutual adjustment of these policies, hence the inclusion of private partners in the research consortia and co-financing on their part. The priorities of the food security policy and the initially four and later three pillars around which this policy is structured, served as a frame for the research and a starting point for implementation. The research programmes have mainly been designed to generate and test research supported innovations and to develop knowledge to support implementation of the Dutch FNS policy goals and the development of new policies (mainly in LMICs). GCP and certainly ARF were not primarily designed to study (Dutch) policy interventions. However, recommendations can generally also serve future (Dutch) policies in the field of FNS and research programmes with focus on uptake and impact.

Aims of Research for Impact approach

The aim of the ARF instrument/programme has been to promote research supported innovations that contribute to FNS and related business needs in Dutch partner countries within the framework of the Multi-Annual Strategic Plans (MASPs) of the Dutch embassies. The GCP research and innovation

programme has aimed at responding to the urgent and growing need for new knowledge, contributing to new insights, policies and practices to meet FNS challenges.

To enhance the potential for impact on policy and practice ARF and GCP projects are characterized by an integrated approach developed by NWO-WOTRO: Theories of Change and Impact Pathways are used as guiding frameworks, transdisciplinary consortia work in co-creation, and Research Uptake efforts are integrated in research activities. Capacity development is a supplementary objective for both instruments, integrated in the research uptake approach.

Relevance and (potential) impact ARF & GCP for policy and practices

The objective to involve private sector actors in ARF has been quite successful: next to eight companies in the Netherlands 32 private partners from LMICs are involved.¹⁶ In the 45 ARF projects, 27 for-profit companies are co-financing with a minimum of 20% project budget, and a total additional amount of €1.234.390.

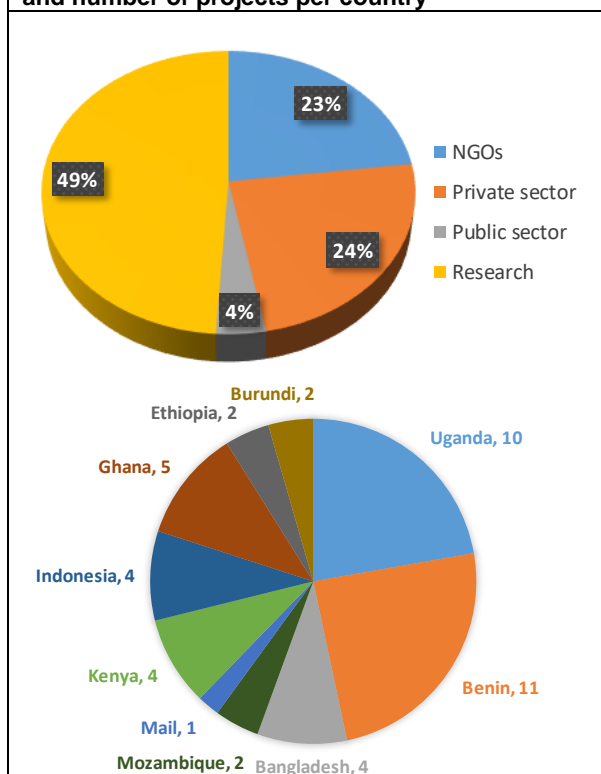
Of all ARF 175 consortium partners, 50 are from the Netherlands, 117 from LMICs and eight from other countries. This implies a good basis for knowledge exchange and capacity building. From LMICs 44 research organizations are involved and supported.¹⁷ The ARF evaluation conducted by Syspons (July 2019) finds that the programme has been successful in fostering collaboration between Northern and Southern researchers and that the programme design, which requires teamwork and co-creation between Northern and Southern consortium members, was key to achieve this. Projects are focused on 10 of the 15 partner countries (see Figure 4) with Benin and Uganda counting for almost half of the total projects. In total 26 projects focus on Policy pillar 1. “Eradicating existing hunger and Malnutrition”, 40 of them aim to contribute to pillar 2 “Promoting inclusive and sustainable growth in the agricultural sector”, and seven projects work on objectives of pillar 3 “Creating ecologically sustainable food systems”.¹⁸

Results of finalized ARF-projects

So far, 19 ARF projects have been completed and have written a final report. NWO-WOTRO reporting based on that shows that they have led to high-quality interdisciplinary knowledge and new insights contributing to innovations for sustainable access to sufficient and healthy food. As outputs for policymakers and practitioners, including private sector, they have developed 154 knowledge items (Scientific and Research articles, Conference papers, Policy briefs, Popular articles, Factsheets, Blogs, and Other items such as videos, podcasts and infographics). As a result, a total of 365 knowledge products could be expected for all the 45 ARF projects.

The Syspons ARF evaluation underlines that the ARF results show that it is possible to develop business models and value chains in inclusive ways. The evaluation finds for instance that farmers and other producers adopt and apply new knowledge and innovations. This outcome was observed in the three sample study countries Benin, Ghana and Uganda. In the ARF & GCP midterm evaluation (Syspons, December 2017) based on documents of all projects and nine specifically analyzed projects, it was

Figure 4: Composition of ARF consortia (Call 1 - 3) and number of projects per country



¹⁶ Relates to Result Framework indicator 5.3.1.: Number of businesses involved in FNS activities (Dutch/non-Dutch).

¹⁷ Relates to Result Framework indicator 4.3.1.: Number of FNS-relevant knowledge institutions supported directly

¹⁸ “Co-creating (Dutch) diamonds, gold (standards) and silver (bullets) in the food security and agricultural business maze” (Dietz & Van de Broek 2018)

concluded for both instruments that their strength is that they are in line with Dutch Food Security Policy and address relevant research needs in the target countries and the global food system.

NWO-WOTRO reporting (analyzed by the F&BKP) shows that the ARF finalized project results also all have had significant effect on their business environments. Five projects improved agriculture production and eight improved capacities by knowledge exchange and training. Four projects achieved both and two focused on product improvement.

F&BKP analysis shows that in total 11 of these projects have had effects on policy (local or national government) environments, ranging from awareness raising and policy agenda setting to concrete interest in continuing the activities (e.g. extension). In Uganda for example, government (and non-government) agricultural extension services are integrating the method in their advice to farming communities, in planning and in funding proposals, and local governments agreed to prioritize sesame in their development plans and strengthen input regulation. In Benin discussion is ongoing with the national council of nutrition and food for introducing domestic formulas of project baby flour in their feeding package developed for hearth model for recovering moderately malnourished children. The evaluation (Syspons, 2019) shows that many projects aim to utilize existing national structures and practitioners' organizations for their knowledge dissemination, but face challenges regarding the capacities of these institutions. Local authorities mostly lack the capacities to adopt and eventually sustain the project activities and to follow up on learned topics to further implement and spread knowledge, for example to other parts of the intervention region.

It is justifiable to state that the 19 finalized ARF projects have promoted at least 19 innovations¹⁹, related to production and/or processing, improving products and organization of the value chain. They relate to all themes of the food and nutrition policy: Eradicating hunger and malnutrition (7); Promoting inclusive and sustainable growth in the agricultural sector (18); Achieving ecologically sustainable food systems (8). The stages of uptake vary from "Research/proof of concept" (6), to "Piloting" (4), to "Available for use" (3) and even six project innovations have been "Taken up by 'next users'" already. For example, the development of new cashew varieties in Uganda has resulted in project partners purchasing 20% of the local production in 2017 sold in local markets, and food cereals with milk protein products are widely sold in the country and being picked up in neighbouring countries. In Benin, Women rice processors of a project developed high quality parboiled rice and daily receive a lot of orders from everywhere in their districts and from other frontier districts, which has led to the definition of a label for local parboiled rice. And lastly, in Bangladesh, the Mangrove based shrimp farming model developed a by a project has been integrated in the draft of a multi-stakeholders' initiative for the National Shrimp Strategy and Action Plan of the national government.

Also Syspons (2019) finds that ensuring institutional and technological sustainability of the ARF projects via its capacity building approach is a strength of the programme. Projects that develop technologies which can be turned into business ideas were particularly prone to secure the continued investment of the private sector partner. Additionally the evaluation has found while the projects contribute to an increase in income of the ultimate target group, this does not necessarily lead to an increase in spending on food or savings and therefore higher food security. The evaluation thus finds that some ARF projects struggle with contributing to food security at an impact level in the partner countries. Also the evaluation shows that local authorities mostly lack the capacities to adopt and eventually sustain the project activities and to follow up on learned topics to further implement and spread knowledge, for example to other parts of the intervention region.

Next to outcomes, the research projects lead to new activities and partnerships. More than half of the 19 ARF projects will continue their work in one way or another and almost half of the projects have generated new funds to continue the project activities. A few projects are still looking for funds.

Syspons states that the design features of the ARF instrument are a main source of success of the programme, as they are instrumental for ensuring its effectiveness and efficiency. In this regard, Syspons also mentions that the support activities by NWO-WOTRO pay off in that they are appreciated by the projects and support is seen by project members as helpful to their project implementation and that the F&BKP was a useful feature, as projects used it to share their results and some projects used the opportunity to expand their networks and explore further cooperation, such as starting similar

¹⁹ Relates to Result Framework indicator 4.1.1.: *Number of FNS-relevant innovations.*

projects in other countries. Moreover, by funding multi-stakeholder consortia and encouraging co-creation, the ARF instrument ensures access to the target groups and other external stakeholders. Regarding co-creation, the evaluation finds that consortium members particularly engage in information seeking and advocating for their joint projects. Furthermore, the case studies showed that co-creation involved using networks of consortium members to access political actors and therefore influence policy change. In addition to co-creation, research uptake strategies are important for achieving the project outcomes. In this vein, the evaluation finds that it is important to communicate the results appropriately to the target group to ensure their willingness to be informed by the research results.

First results GCP projects

GCP consortia also consist for almost half of non-scientific actors, (see Figure 5). In total 89 of all 166 partners are from LMICs. The geographical distribution of the 30 GCP projects is very wide spread over Africa, Asia and Latin America with several GCP projects located in more than one country.

GCP projects have accomplished noteworthy results by generating new knowledge and technologies (Syspons 2017). E.g. a novel way of defining the efficiency of environmental friendly pig growth in Brazil, the development of processing standards to larger upscale traditional fermented milk production in Zambia, and the creation of an integrated framework for the development of allotment gardens in peri-urban areas of Benin. Regarding project leverage, in the total of 30 GCP projects (Call 4 was not specifically targeted at private partners) 21 co-financing for-profit companies were involved.

In 2018 in total 138 GCP knowledge items (Scientific publications, Book/monograph, Chapter in book, PhD Thesis, Conference paper, Professional publications, Publications for a wider audience and Other items such as videos or podcasts) were uploaded in the NWO-WOTRO ISAAC reporting system.

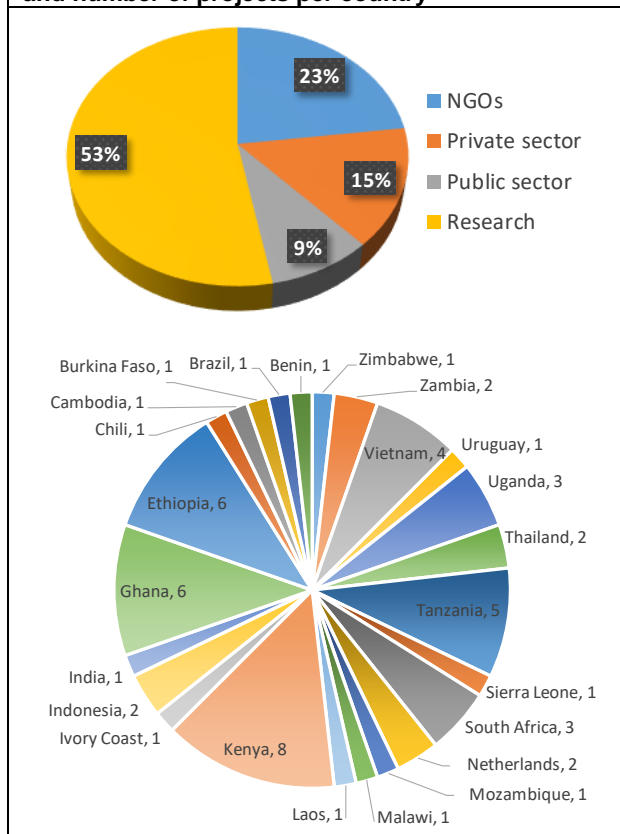
NWO-WOTRO has reported on the innovations so far (2018) of ten GCP projects (some have developed several). Of those, five are Research/proof of concept; one is in its Piloting phase; two are available for use and four are already taken up by “next users”.

Regarding project leverage, in the total of 30 GCP projects (Call 4 was not specifically targeted at private partners) 21 co-financing for-profit companies were involved. In addition to the required 20% these partners contributed €1.865.547 (GCP-1 to 3) and €1.560.521 (GCP-4) of the total of €15.600.000 GCP funding.

3.3 Non-Dutch funded research/knowledge

Apart from these Dutch-funded research programmes, there is a wide range of (academic and applied) literature on FNS available which presents relevant insights from policy and research from across the globe. This includes sources such as of FAO, IFAD, and the World Bank, knowledge institutions, government institutions, (international) civil society organizations, as well as private sector in other donor countries and LMIC and other countries. There is no space here to provide a systematic overview of this range. Dutch-funded research programmes make use of such resources while knowledge brokering is needed to enhance access and usefulness of such sources for informing policy and practice (more on this in section 4.4). F&BKP Knowledge Portal is one source that gives an overview of recent research from around the globe in the field of FNS.

Figure 5: Composition of GCP consortia (Call 1- 4) and number of projects per country



4. Implications and considerations for research programming and use

Section 3 presents a summary synthesis overview of knowledge needs and existing knowledge sources of Dutch FNS policymakers and related partners. Comparing those needs and sources illustrates how a variety of research initiatives responds to relevant knowledge needs and where continuing and new investments are desired. Based on input obtained through the consultative stocktaking process, this section zooms in on: The potential priorities in terms of focus of research directly funded by DGIS-IGG-FNS (4.1); Potential priorities in terms of related research programming design (4.3); The priority of enhancing research use (4.4); and The overarching priority of looking for ways to partner with other funders in addressing knowledge and innovation needs (4.5). Here it is important to notice that not all such priorities necessarily have to be addressed through only DGIS-IGG-FNS research funds.

4.1 Thematic and geographic priorities

Based on needs and sources described above, below are suggestions for finding the niche for DGIS-IGG-FNS themes and geographies in view of wider research efforts as outlined in section 3, to support thematic focus areas as defined in recent Dutch FNS policy documents (see section 2).

Food systems transformation. Link knowledge and innovation more to food systems transitions and transformation processes towards inclusiveness and sustainability (including circularity). Invest in research on systems-oriented change considering all relevant parties and considering the operational side of things in terms of getting arrangements in place, which all need to interactively play out towards system transformation.

Complex knowledge used at scale. Invest in research, which helps to understand how food systems transformation related complex knowledge can be used at scale.

More attention for ecological sustainability (pillar 3). The Netherlands has much to offer in this field. However, the tendency is to focus on what pertains to pillar 1 and 2. Since the tendency has been to focus on what pertains to pillar 1 and 2, extra efforts will now be converted to pillar 3.

Harness the potential of diversity in nature. Research needs to help explore and explain opportunities for harnessing the strength of diversity in nature. The world relies on too few crops, which breeds vulnerability in a number of ways, including in relation to health and nutrition. For example, there is a need to focus more attention on traditional vegetables in Africa.

Dutch niche focus. Focus on specific areas of Dutch expertise and experience, including vegetable, plant protein crops, livestock, and seed sector (and not staple crops and large monoculture systems). Considering this, define what is appropriate in the African context. Seed sector development is much needed. Vegetable processing offers excellent opportunities for youth to find employment.

Appropriate geographic focus. The direct geographic focus should be Sahel, MENA, Horn of Africa. For those regions it may be relevant to learn from experience and evidence from other countries which is directly relevant to them (for example through cross-comparative research).

Youth employment. Pay key attention to food systems related employment opportunities for youth as it affects the future of agriculture as well as affordability of nutritious food. Horticulture in terms of value addition after production, for example, offers such opportunities.

Urbanization processes. Pay key attention to urbanization processes, and related “rurbanization”, urban agriculture, and specifically urban and peri-urban horticulture.

Political economy of food systems. Politics play a fundamental role in (economic) food systems functioning, related decision-making, and resulting outcomes. More attention needs to be paid to this in research.

4.2 Integrated system transformation priority

Contributing to transitions towards sustainable and inclusive food systems in LMICs involves redesigning systems, in particular in terms of a needed agricultural transformation. For this, research needs to provide the necessary understanding about current systems and scale dynamics to inform frameworks for assessing transformational change on an ongoing basis. Much research is focused on optimizing within existing system conditions, particularly in terms of scaling new technologies as pathway to impact at scale. While there is still a role for that, research needs to pay more attention to what leveraging system change involves and to associated transformative processes and related implications (Figure 6). This includes paying more attention to food equity and justice, biodiversity, and related interactions between different geographic and political scales.

Figure 6: A simplified perspective on thinking and acting strategically in choosing research focus				
Research focus	Metaphor	Technologies and practices	Capacities and institutions	Systems and scale dynamics
Optimizing	Building better dykes to control rivers	A focus on knowledge and innovation for <i>doing things right</i> , connecting to <i>current challenges and opportunities</i>		
Revising	Making room for rivers	A focus on knowledge and innovation for <i>doing the right things</i>		
Transforming	Building floating houses	A focus on knowledge and innovation on <i>transformative approaches</i> to what are the right things to do, in view of <i>emerging and anticipated challenges and opportunities</i>		

Figure 6 also serves to consider the focus of different research programmes and the extent to which this is in line with strategic knowledge needs. Practical implications need to be considered. This also relates to opportunities to coordinate complementary areas of emphasis between MinFA/ DGIS and MinAgri.

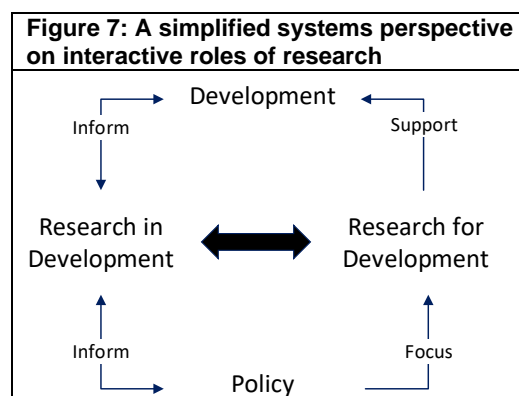
For this, a contextual and scale-sensitive approach to research is needed. Situations in the Netherlands and LMICs, and also across LMICs, are quite different and specific. Knowledge and innovation options and opportunities will partly be generic, but will also clearly need to be developed in and translated and adapted to specific (local) contexts. This needs to relate to both short-term pressing and long-term anticipated challenges. It is a classic fallacy to assume that what works in one place and for one particular actor will then automatically also work somewhere and for someone else. The same applies to scaling up related options: what works well at one scale level and one place not automatically leads to multiplied benefits through scaling up. Research can play a key role in bringing contextualized and scale-sensitive knowledge and innovation to policy and practice.

4.3 Programming design priorities

The following concerns the way in which research programming could be organized and what would help to enhance its effectiveness, based on advice of consulted experts.

Research in Development. There is broad support for expanding research orientations from a mere focus on research for development to more emphasis on the role of research in development as discussed in 3.1.4 (also see Figure 7). This includes a need for testing assumptions about causal relationships underpinning research practice explicitly and to test those on an ongoing basis.

Considering appropriate target group focus. A focus on the food insecure and on (Dutch) private sector opportunities may sometimes not be easy to align. Choices may need to be made in this regard. Also social entrepreneurship may be an option to consider to appropriately combine the two (as for example CABI does).



A food systems view of FNS policy. The current policy framework should be interpreted from a food systems perspective (see Figure 2) to prevent assuming simplistic impact pathways. Here it is important to be cautious about relying (too much) on assumed trickle-down effects from working with the comparatively better-off to benefit the poor.

More responsive Call mechanism. Calls were said to be good to draw the best experts on the one hand, while others stated that they can also be used by researchers that just have no other research work at the time of the calls. Another risk is that they are too broad to be (coherently) relevant enough for policies and practices. Consider therefore sharpening the definition of calls towards more clearly outlining challenges to be addressed and inviting innovative proposals on how to co-create responses to the challenge as a portfolio (as opposed to single projects) and set clear selection criteria in the call.

Focus on participatory research design. Research design should involve co-creation, inter- and transdisciplinary research, applying research uptake strategies, encouraging the regular interaction with stakeholders, involvement of private sector, and, notably inclusive agenda setting and formulation of research questions, and shared theories of change. Living labs and innovation platforms are ways of realizing this.

Enhancing research for policy. This requires a two-way engagement. Researchers need to be sensitive to policy priorities and policy needs and provide timely (not just at end of research) input to inform related processes. At the same time, policymakers from their side need to acquaint themselves with relevant knowledge sources and proactively connect to researchers who can provide core knowledge and expertise to inform policy practice.

Anticipate scaling. Ensure building in explicit activities to work on research use before/after/during research; start up relationships early on with potential partners, e.g. by aligning with RVO instruments, in scaling research outputs (knowledge and innovation).

Appropriate time scales for research. Consider what requires short-term type of research and what requires longer-term type of research such as scenario studies and addressing 2050 challenges.

4.4 Institutional collaboration

Collaboration and alignment with key partners are key for implementing this agenda, which goes beyond relationships with funded partners. This is about achieving synergy and scale, enabling to do more with limited funds. Five groups of partners can be distinguished: Dutch policy partners; Dutch knowledge and innovation co-creators; EU partners; International partners; and, most importantly, African partners and stakeholders. The following is about current and potential strategic partners. The list intends to give a first idea and is not exhaustive; this can be further elaborated as partnership choices become more clearly defined and focused.

Dutch policy

Enhancing Dutch policy coherence and alignment. The primary partner here is MinAgri since they also fund FNS/LMICs related research and with whom a common outlook with MinFA on Dutch contributions and priorities in relation to worldwide FNS was presented²⁰. In this process it is important to maintain sufficient diversity in terms of target groups so that a focus on the poor is not side-tracked, and that aiming at different targets groups becomes highly complementary. Furthermore, MinEdu (and NWO/WOTRO), MinEA,/RVO/TKI. This specifically includes Dutch embassies.

Dutch knowledge and innovation co-creators

Bringing in fresh perspectives. Notably INCLUDE platform, TU Delft, NGOs (strategic partnerships – Partos, Integrated Seed Sector Development (ISSD) community of practice), and think tanks such as Rathenau instituut. The MinAgri-funded Wageningen Research “Kennisbasis” programme on Water & Food is of particular interest.

²⁰ See note 13

EU partners

Staying connected to EU initiatives and policy developments. ARCH, SCAR, the Task Force Rural Africa (EC), IPES-FOOD, including think tanks such as ECDPM.

International partners

Staying connected to global initiatives and international policy priorities. CGIAR, AIRCA (notably World Vegetable Center, CABI, IFDC), IFAD, the World Bank, FAO, OECD, GFAR, Rockefeller, MasterCard Foundation, USAID, GiZ, DFID, World Economic Forum. There is a need for more synergy between e.g. donors and embassies – they are sometimes doing similar things in the same country.

African partners and stakeholders

Enhance their role in decision-making on policy priorities. ASARECA, FARA, national agricultural research stations, African Development Bank, African Union, but also African NGOs.

4.5 Knowledge exchange and use

Section 3.1 “Capacity building and Knowledge brokering” showed that almost all informants stated that while the importance of new research is clearly acknowledged, they considered it just as important to make existing research and knowledge more easily accessible (in packaged, targeted and synthesized ways). Considering the broad scope of FNS-related research as reflected in 3.2 and 3.3, it is clear that further strengthening opportunities for continuous access to and use of relevant knowledge are needed, combined with support in translating this into strategic options for policy- and decision-making. This realization of accessibility should be paid attention to in research design (e.g. through multi-stakeholder co-creation and attention for research uptake), besides investments in separate capacity for additional knowledge brokering activities, to connect the work of researchers to that of policies and practices.

The Knowledge Programme for Food Security (KP)²¹ which is, together with AgriProFocus, being transformed into the Netherlands Food Partnership has a role to play in facilitating this research exchange and use (see more in section 5.5), as well as Dutch support to higher education in LMICs such as the Orange Knowledge Programme, and the MENA Scholarship Programme. Strengthening connectivity between research programmes and knowledge exchange and use options such as briefly indicated in the above will be key. LMIC alumni may, for example, be linked to research/programmes in their home countries. It was also suggested that it could help to have a (NFP-KP) knowledge broker staff member (e.g. at DGIS-IGG-FNS and/or embassy) with a dedicated task of connecting researchers and implementers by for example summarizing and synthesizing research and presenting it to colleagues in short packaged targeted (presentations and written/ visualized) communications. This would not just serve policymakers, but also decision makers in the private sector and other stakeholders.

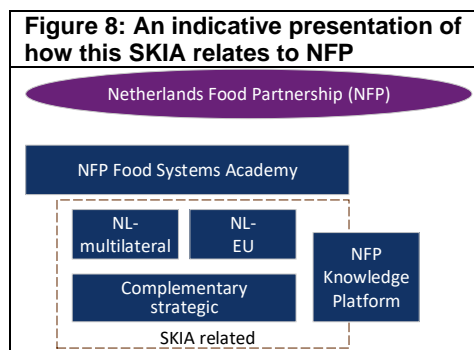
²¹ From 2019 on The Food & Business Knowledge Platform, Embassy Support Programme and Talent Pool will continue as the “Knowledge Programme for Food Security”. Wageningen Centre for Development Innovation, AgriProFocus and The Broker implement this Programme financed by the Netherlands Ministry of Foreign Affairs.

5. Recommendations for future research programmes

This section outlines the contours of key research programmes for the coming years. This is mainly about a multilateral funded programme (predominantly the continuation of the NL-CGIAR Strategic Partnership) and an NL-EU funded partnership (predominantly a cooperation with the DeSIRA programme). Additionally the SKIA will contain a smaller bilaterally funded programme.

Netherlands Food Partnership

All these programmes will become part of the new Netherlands Food Partnership²² (NFP), which is begin established, and could be supported by a future Food Systems Academy (Figure 8), see below. The NFP will be the Netherlands movement supporting a necessary acceleration of efforts in relation to SDG2 along the lines of transforming existing food systems towards ecological, social, and economic sustainability. It will be a partnership of entrepreneurs, experts and drivers from the business sector, NGOs, knowledge institutes, the financial sector, as well as the government. The partnership will be based on a shared ideal and a resolution that together they can make more of a difference.



Food Systems Academy

A by DGIS-IGG-FNS envisioned Food Systems Academy (which pertains to be more than only the focus of this SKIA) would provide opportunities for more direct and flexible ways of research targeting by MinFA to connect to priorities and emerging opportunities. The main purpose of this Academy would be alignment of all related research activities, support in designing and implementing research activities, monitoring and evaluation and – where opportune - governance of the activities. It would actively link to global centres of excellence on food systems, such as the Oxford University’s programme on the future of food, to inform Dutch policy debates. The Academy should as much as possible involve expert parties for specific tasks and activities. It could then also link to the establishment of a CGIAR Focal Point to deepen, strengthen and extend the NL-CGIAR Strategic Partnership around systems thinking and using a systems approach in research. Such a Focal Point²³ will leverage the impact and coherence of Dutch development assistance provided to the CGIAR by building a Community of Practice and support capacity building of cohorts of research fellows working on related topics in a triangular framework: bringing together (a) research of CGIAR research programme with (b) the expertise in Dutch knowledge centers and (c) Southern academic and civic knowledge networks.²⁴

5.1 Introduction to future research programmes

This section presents an overview of input for the development of a coherent portfolio of mutually complementing FNS research programmes in view of policy approach and focus (section 2), and (remaining) policy research needs (section 3 and 4). It takes into account that there are also some on-going research programmes running (NL-CGIAR), some ending (ARF/GCP/Seeds Call), and some being initiated (DeSIRA).

There is significant commonality between this SKIA and the (international part of the) MinAgri knowledge and innovation agenda²⁵ focus. Therefore, both the further refinement and development of these research programmes and their implementation will be done in proactive exchange with MinAgri as well as partners in the field of FNS in LMICs. This includes, for example, alignment in relation to wider FNS-related research in the EU, also other than DeSIRA (such as Horizon Europe, the next and most ambitious EU research and innovation programme for 2021-2027, subsequent to Horizon 2020).

²² [Netherlands Food Partnership provisional webpage](#)

²³ Wageningen University & Research describes this Focal Point as “Initiative for a converging NL-CGIAR strategic dialogue on food systems approach and innovations”.

²⁴ From internal communication, Converging Capacities for Agri-Food Systems Innovation: Added Value & Comparative Synthesis. Towards a next Level NL-CGIAR Strategic Partnership.

²⁵ [Kenni- en innovatieagenda LNV \(2019 – 2030\)](#)

Geographic focus

Research should be mainly focused on the Sahel, Horn of Africa and MENA region.

Programme overview

The following four programmes together cover the range of identified knowledge needs and the related need to connect research outputs to research users through knowledge brokering:

- NL-Multilateral research partnership: (predominantly) CGIAR/AIRCA (5.2)
- NL-EU research partnership: (predominantly) DeSIRA (5.3)
- A complementary strategic programme: Policy support and Calls (5.4)
- A knowledge management support programme (predominantly) KP-NFP (5.5)

They involve new research and the continuation of already on-going high-quality development-relevant research and new research which is complemented by smaller flexible research calls to respond to specific (emerging) knowledge needs and opportunities, and to policy information needs.

5.2 Multilateral partnerships

The main thrust of this programme relates to the NL-CGIAR Strategic Partnership. MinAgri is also supporting the CGIAR for which reason there is the interdepartmental Working Group. Other multilateral-funded research may be foreseen which requires collaboration with other partners than the CGIAR.

5.2.1 CGIAR

The NL-CGIAR Strategic Partnership which started in 2015, will be continued as key operationalization of this SKIA. The recent evaluation provides guidance for a next phase of the partnership. For the upcoming years the present partnership approach is seen as effective and suitable. The NL-CGIAR Working Group with representatives of MinFA, MinAgri and the Knowledge Programme will continue to facilitate the partnership.

Recommendations for continued partnership

- The seat of the Netherlands on the System Council has contributed to short communication lines between the CGIAR and the Netherlands. This arrangement, which partly depends on the level of Window 1 funding, should be continued if possible.
- The work done by the overall CGIAR organization and by the CRPs supported through the NL-CGIAR Strategic Partnership, is clearly aligned with the SDG agenda. Therefore it is recommended not to make major changes to the present thematic structure of Window 1 and Window 2 financing and continue direct financial support to the CGIAR organization and specific CRPs.
- Consider support for the new independent CGIAR Collaborative Gender Research Platform.
- Support for Seed Systems Development Research will benefit from better embedding. Encourage uptake of SDDR portfolio into the CGIAR portfolio at the start of the new CGIAR business cycle in 2022.

Supporting instruments

- Being an engaged partner and engage in co-creation within a partnership consumes time - both time of people and lead time. The partnership needs to remain critical on these inevitable and highly needed investments in co-creation. Effective Seed Systems and PPPs are partnership priorities that have required special investments in co-creation in the last few years but should now be guided to efficient delivery in the next phase.
- Continue with SEP facility - in a flexible manner.
- PPPs expert to be embedded in the CGIAR and to build on NL-CGIAR partnership elements.

Operational

- Keep a close eye on the balance between co-creation and efficiency.
- Use the annual meeting between the Netherlands and the CGIAR to assess progress.
- Strengthen communication of results of partnership to users, including policymakers.

Future thematic focus

From a food systems transformation perspective, an important Dutch policy priority, CRP support (Window 2) could be fine-tuned. The importance of a global food systems transformation, that provides both FNS and respects planetary boundaries, is becoming increasingly important for Dutch international policy, as is explained in the MinFA/MinAgri FNS policy letter (2019). Also the CGIAR has expressed its intention to ensure its relevance for Dutch policymaking. Hence this development should be taken into account in future Window 2 support to CRPs from the Netherlands.

New initiatives are being recommended for co-creation for the coming years within the framework of the partnership. Those are a strategic initiative on vegetables and the converging strategic dialogue and capacity building activities on food systems approach and innovations. Further exploration would be needed on how to align such new NL-CGIAR Strategic Partnership investments with the CGIAR agenda of change for the coming two years and on the options for funding these new initiatives.

Using a “systems approach” has been included as a priority cross-cutting approach. There is full agreement throughout the evaluation that developing innovations need to be addressed from a systems point of view to be effective. Wageningen UR is recognized by stakeholders as a thought leader on “Systems approach”. More than half of all SEP appointees, all from Wageningen UR, identified systems approach as the cross-cutting expertise they were most contributing to the CRP they are collaborating with. To ensure better alignment and insight in effective system innovations, the initiative for a ‘converging strategic dialogue on food systems approach and innovations’ taken by Wageningen UR should be further explored. This can bring clarity in systems thinking within the partnership, train next generation IAR scientists (potential link to Young Expert Programmes (YEP)), and through critical thinking further enhance “systems approach” science and its impact.

Vegetables are an important part of healthy diets and offer smallholder farmers, in particular women, important opportunities for income generation. Vegetables are part of the options for food systems transformation towards healthier diets within planetary boundaries. Vegetables are recognized as an important expertise of Dutch IAR and private sector. Vegetables however play a minor role within the work of the CGIAR. A large number of stakeholders, in particular from the Netherlands, recommended to explore more collaboration on vegetables, in addition to the ongoing work on major and minor field crops, livestock and fish, as a strategic initiative in collaboration with but not limited to the Dutch private sector. This could also link to the SeedNL initiative.

Furthermore it should be explored how to link such an initiative to several globally operating IAR institutes with relevant expertise, such as World Vegetable Center, ICIPE, IFDC and CABI (all members of the AIRCA consortium).

Upcoming changes in the CGIAR in 2022 will obviously influence the strategic development of the partnership and its implementation. Because of this major change within the CGIAR, any commitments to Window 1 and Window 2 would be likely to be limited to 2020 and 2021. The present commitments for the SSDR call, and SEP and PPP facilities, due to their later start, already run to the end of 2021.

Strategic discussions will be important input for renewed commitments to the NL-CGIAR Strategic Partnership from 2022 onwards.

5.2.2 Other

The NL-CGIAR Strategic Partnership and possibly the DeSIRA programme may offer opportunities for partnering and co-funding with key institutes such as the World Vegetable Center and CABI, which connect closely to Dutch policy priorities. If not, alternative ways of collaborating may be explored. Other opportunities may arise regarding research partnerships with groups such as the World Bank, FAO and IFAD, especially as part of joint DGIS-MinAgri ventures.

5.3 EU partnerships

5.3.1 DeSIRA 2019 Global Public Goods and Challenges Programme

DeSIRA is the EU initiative on Climate-relevant Development Smart Innovation through Research in Agriculture (and food systems) in developing countries. The core objective is to have more “science in development”, in support of more impactful innovation for agricultural and rural transformation in developing countries. DeSIRA presents the opportunity to align EU development cooperation funding

with Dutch priorities and programming. Research in development is in line with the ambition of this SKIA and it responds to the recent report of the EU Task Force on Rural Africa²⁶, which seeks to move from a development focused on government to government cooperation to one including people to people and business to business approaches.

Background

Agriculture remains the dominant economic sector in many developing countries even with the accelerating urbanization and economic development. Agriculture provides the basis for the livelihoods of a majority of people. A profound transformation of agriculture is needed to achieve the SDGs (particularly 1, 2, 13 and 15). To achieve this transformation, innovation in agriculture and food systems, with their technological and organizational components, must be accelerated.

For knowledge (for policies and investments) and for innovation (combining new and existing knowledge from science and traditional experience with practice and creative action), agriculture and rural transformation requires the strengthening of a wide array of regional and domestic capacities, including research centers, advisory services, farmer organizations and business operators.

Priority themes

The following areas have priority in 2019: (1) Water/Energy/Food/Forest; (2) Vegetables & Legumes; Roots and Tubers; (3) Pastoralism & Livestock; (4) Plant health/Crop Pests & Diseases; and (5) Agroecological Intensification. These themes are to be addressed according to set geographical priorities.

The future themes are yet to be defined but “One Health Approach/Diets” and “Soils Health – fertility” are already mentioned.

Approach

The scope of activities encompasses practical innovation development activities (experiments, studies and extension, sustainability investigations, changes in marketing practices, business management, etc.), research, "scientific backstopping" of development projects and initiatives, support to Innovation Platforms (mobilizing farmers, stakeholders including NGOs and private businesses, development agents and scientists), twinning-type actions, and other collaborative efforts to put research into use.

Research activities need to comply among others to the following criteria:

- Sustainable improvement of the Agricultural Knowledge and Innovation System (AKIS).
- Multi-stakeholder involvement and demand-driven process, with farmers and the broader private sector in the lead, whenever possible. Inclusiveness for women, youth and poor/marginal groups.
- Alignment with EU, EU Member States and national priorities.
- Capacity building in the field of innovation for individuals, organizations (including farmers organizations, business associations, research entities, counselling services) and/or institutions of the environment.

These criteria align very much with the general principles of Dutch FNS policy.

DeSIRA 2019: Call for Expression of Interest from EU Member States

This year, two separate Calls have been opened: one targeted to EU Member States and another one to EU Delegations. DEVCO has engaged with EU Member States (EU-MS) in a participatory process in order to identify and design relevant interventions.

End of June the Netherlands MinFA has submitted two Concept Notes under the Strategic Knowledge and Innovation Agenda:

- Boosting Climate Smart Agriculture in East Africa with FAIR Land, Soil and Crop Information Services (4 years with ISRIC/IFDC).
- Safe locally-produced vegetables for West Africa's consumers (5 years with WorldVeg).

The first Concept Note aims to connect unique knowledge, data and expertise of the Netherlands to development partners in East Africa and beyond. The second Note aims to create stronger synergetic

²⁶ [An Africa-Europe agenda for rural transformation](#). (Task Force Rural Africa 2018)

collaboration and knowledge exchange between the international vegetable research institution, and Dutch private sector expertise in vegetable production and breeding.

The proposals have been compiled in co-creation between consortium partners and MinFA, including embassies. If awarded by DEVCO, MinFA would be the contract partner for EC and will lead the consortia as part of DeSIRA-NL. This will allow to ensure synergy with the research portfolio under the Strategic Knowledge and Innovation Agenda as well as the broader development, trade and investment agenda of the Netherlands Food Partnership (NFP). The contribution and role of MinFA and the procedures to commit and contract projects still need to be formalized. The outcome will inspire a possible co-creation process for future Dutch DeSIRA proposals.

5.3.2 Other

Looking beyond EU collaboration with DEVCO, collaboration (together with MinAgri) may be shaped around other research such as collaboration with DG-RTD (like LEAP4FNSSA or LeapAgri) and DG-Agri with their Rural Development Report. In these programmes, MinAgri is the main partner, as is reflected in their knowledge and innovation agenda (see note 25), but there may be opportunities for enhanced alignment of investments, possibly as part of the NFP strategy.

5.4 Complementary strategic partnerships

To address the identified needs of the consulted experts, a research programme should be established that is complementary to the discussed Dutch multilateral and EU research programmes. It would allow for more direct engagement by DGIS in shaping related research. This complementary research programme would have two dimensions: Policy Support and Research Calls. The programme should build on unique Dutch FNS research experiences, e.g. transdisciplinary co-creating consortia, Impact Pathways with much attention for -intermediate - outcomes, inclusive agenda-setting with LMICs, attention for innovation, research uptake, capacity building etc..

The objective of *the policy support dimension* is to carry out studies relating to the efficacy of impact pathways of selected FNS intervention programmes in LMICs. The *research calls* should lead to research supporting food systems transformation processes in LMICs.

5.4.1 Policy Support

Many comments and suggestions shared by MinFA FNS cluster and related consulted partners (see sections 3 and 4) pointed to the relevance of a Research *in* Development approach. This implies that research is an integral part of development programmes, where researchers collaborate with partners and beneficiaries from the start and adapt projects along the way to work jointly towards transformative changes in LMICs. It relates to learning about impact pathways and what works and does not work in development, feeding back to policy evaluation and development.

Policy Support will require a new additional fund that will specifically addresses opportunities to support policy development, implementation and evaluation. It will connect to the Knowledge Management Support programme (5.5) by supporting systematic learning at meta-level to inform wider policies (not just related to the programme itself). This includes informing embassies. It can benefit from lessons learned from MinAgri's longstanding experience with policy-supporting research (BO-programmes). Two main functions are foreseen:

a. *Impact studies, system mapping, scenario studies, and policy-impact pathways research*

Intervening in food systems transitions starts with a good understanding of relevant food systems dimensions and dynamics, as expressed by many consulted (policy) experts. System mapping therefore needs to be complemented with foresight analysis and scenario studies to get an appreciation about (emerging) trends and anticipated developments. Intervention programmes will include situation analysis, but policymakers need to have a broader perspective than a programme perspective. For example at country level (notably in the case of embassies), but also at regional and global level. Opportunities may also be explored regarding the Global Food Systems Index²⁷ and the way in which this could support policy development and implementation as strategic tool.

²⁷ IFPRI initiated the idea; Dutch groups were co-authors of the concept note which was endorsed by the World Economic Forum: http://www.compact2025.org/files/2015/07/WEF_NVA_Global_Food_System_Index_Concept_Note.pdf

b. Developmental research

Researchers with a background in evaluation will support larger Dutch-funded FNS/LMICs programmes in design, implementation and evaluation and select programmes which have a potential for providing strategic learning and policy feedback (possibly a focus on seed sector related programmes such as SEED NL). This also requires programmes to embrace this as an opportunity for co-creation and requires specific guidance and conditions.

5.4.2 Research Calls

The knowledge needs presented by consulted experts (section 3.1) pointed to a clear demand for food systems thinking and action, particularly along the lines of food systems *transformations* (see 4.2). This justifies setting up a specific (adaptive) call function for research on food systems transformation in LMICs, additional to the foreseen CGIAR and DeSIRA programmes. A research focus on what transformation of food systems involves (see Figure 6) could be the starting point for these Calls. This would include exploring needs for new ways of researching and new ways of engaging with food systems transformations which match related complexities. This also offers opportunities for engaging with (critical) research institutes which explore alternative pathways in food systems transformations, thus complementing the core research programmes (CGIAR and DeSIRA).

The research Calls would facilitate research supporting food systems transformation processes in LMICs, with special attention for climate change (adaptation and to a lesser degree mitigation), gender and inclusivity, private sector development (jobs and entrepreneurship), good governance and management of natural resources (water, soils, forests, oceans). These would be set up as NL-Africa (NL-MENA) collaborative research from a research in development approach.

MinFA with MinAgri would, in consultation with relevant KP-NFP networks, set out guidelines for the content, target groups and focus regions of the Calls. This may, for example, relate to innovative ways of engaging with food systems change other than current food systems analysis and developing decision-support for (e.g. government) initiatives in relation to visions for food systems transformation. Specific areas of interest (and possible subjects of calls), complementary to the focus of the CGIAR and DeSIRA research, could include, “power, politics, and the political economy of food systems transformations”, and “transformation towards enhanced food systems resilience in view of extreme events other than climate-related (e.g. conflict, disease outbreaks)”, “transforming food systems to serve the most marginalized”, and ‘food systems transformations in fragile states’, “rurbanization’ and food systems transformations”, and “youth employment shifts (agriculture, off-farm, and non-agricultural) in food system transformations”. There may also be opportunities for cross-comparative research on foods systems transformation processes and connecting to/exchanging with research on Dutch food systems transformation needs and policies.

Also because of the importance of institutional collaboration (see section 4.5) this funding instrument needs to keep room for emerging research needs and opportunities for research collaboration. It will seek to connect to smaller, critical niche institutes which help to keep policy and larger knowledge institutions sharp through research contributions which constructively challenge dominant research approaches.

Recommendations from the evaluation of the F&B ARF/GCP instruments will be used to design the implementation, governance and management processes. This includes considering appropriate selection procedures such as Sandpit and criteria related to policy objectives and programme synergies, as well as applying a clear focus in and clearly demarcating calls.

5.5 Knowledge management support

Section 4.5 highlighted knowledge needs mentioned by consulted experts in relation to knowledge broking needs. These needs are generally in line with the activities of the current Knowledge Programme Food Security, which is anticipated to become an integral part of the Netherlands Food Partnership. The latter is intended to support government practices, investments and policies on FNS and sustainable agriculture (SDG2). The KP-NFP will be part of this Strategic Knowledge and Innovation Agenda, working in close interaction with and partly managing the SKIA programmes.

The programme comprises two components Talent Pool and Embassy Support Programme of the “Ondersteuningsfaciliteit Voedselzekerheid”, and a third component Secretariat Knowledge Platform Food Security. Together, they form one integrated programme with intensified link between Dutch knowledge with multilateral organizations and a better connection between research, policy and implementation of the food security policy of MinFA/DGIS.

The Knowledge Programme (KP) builds on the Food & Business Knowledge Platform (F&BKP) that exists since September 2013. It focuses on FNS and helps enhance focus and coherence in research programming, relations between different stakeholders, and coherent use of knowledge by Ministries and other practitioners. The KP started on 1 January 2019. It involves the consortium partners AgriProFocus, The Broker and Wageningen CDI (WUR-WCDI) and the F&BKP.

The KP and the SKIA will become part of the Netherlands Food Partnership which is currently being formed. The NFP is projected to start by 16 October 2019. KP-NFP could play various roles in managing knowledge (including a knowledge management system), defining and sharpening research focus (for example via consultations with experts), facilitating research exchanges (like supporting research programmes and projects in co-creation and research uptake), research analysis and dissemination (including giving insights in running and results of Dutch and non-Dutch funded research programmes in relation to Dutch FNS policy), facilitate learning of research programmes, and stimulate research use, for example by linking with RVO & Top Sectors.

The current Plan of Action for the KP is developed with the best understanding currently available of how the NFP might look like in the near future. However, most likely changes are needed once the KP is embedded in the broader NFP. Therefore, in the first year 2020 the newly formed NFP will clarify its integrated approach in Strategic and Annual Plans, a new knowledge and research agenda, a communication strategy and so on.

6. Programme and Agenda Monitoring and Evaluation

Monitoring and Evaluation (M&E) agreements will be defined in relation to specific programmes. Rather than developing a list of indicators, it will be more helpful to articulate key evaluation questions. In this way, the focus will remain on getting answers to relevant (performance) questions, rather than on getting data on indicators as such. Related ex-ante / ex-durante / ex-post M&E needs will then be specifications of evaluation questions, such as the following.

Related to the appropriateness of research conducted under the programmes and responding to the following M&E questions:

- To what extent are research capacities applied in implementing (part of) the programme (section 5) matching research needs as outlined in this agenda?
- To what extent are research outputs and outcomes appropriately in line with the orientation and focus of this agenda (including those relating to objectives of target countries and groups)?
- To what extent are research outputs appropriately aligned with knowledge needs of relevant policies and interventions?
- To what extent are research outputs effectively used as inputs in policy and practice, (including in Dutch funded FNS-related programmes in LMICs)?

Related to the appropriateness of this agenda itself:

- Is the orientation and focus of this agenda (still) appropriate in view of Dutch policy development?
- Is the agenda (still) appropriately aligned with/connected to relevant knowledge needs?
- Are research instruments and partnerships with research implementers (still) considered to be the appropriate ways of operationalizing this agenda?
- Are practical arrangements in relation to research implementations functioning well?

For each of the programmes, such questions will be translated into specific information needs (what information would provide an adequate answer to the question) and related indicators.

Annex 1: List of experts who contributed to the consultative stocktaking process

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Cora Govers	NWO-WOTRO
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Eefje den Belder	WUR
Ferko Bodnar	MinFA-IOB
Gabriëlle Nuijstens	Topsector Horticulture and Starting Materials
Hans Hogeveen	NL-FAO ambassador
Huub Löffler	WUR
Irma Alpenidze	MDF
Jan Verhagen	WUR
Janny Vos	CABI
Jan-Willem Nibbering	EKN Burundi
Jeroen Rijniërs	MinFA-IGG
Johan Veul	MinFA-DDE
Joris Tielens	Vice Versa
Kees de Gooijer	Topsector Agri and Food
Ken Giller	WUR
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Marco Wopereis	World Vegetable Center
Marleen Dekker	INCLUDE platform
Monique Calon	MinFA-DDE
Patricia Wagenmakers	MinAgri
Pieter Windmeijer	WUR
Pim de Keijzer	African Development Bank
Roel Snelder	AgriProFocus
Ruerd Ruben	WUR
Ton Dietz	Emeritus African Studies Centre
Ton Negenman	EKN Rwanda
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