THE SHARE OF AGROECOLOGY IN BELGIAN OFFICIAL DEVELOPMENT ASSISTANCE: AN OPPORTUNITY MISSED

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The share of agroecology in Belgian official development assistance: an opportunity missed

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EXECUTIVE SUMMARY

Agroecology applies ecological science to farming systems, and it aims to reform food systems in support of this transition. It therefore seeks to redirect agricultural development towards systems that use fewer external inputs linked to fossil energies, and instead use plants, trees and animals in combination, mimicking nature instead of industrial processes at the field level.

A global consensus is now emerging on the importance of this shift for the fulfilment of the Sustainable Development Goals. Agroecology can contribute to climate change mitigation by enhancing soil health and reducing greenhouse gas emissions from external inputs. It can guarantee to the local communities adequate nutrition through the provision of diversified, safe, and balanced diets. It can improve the incomes of small-scale farmers, particularly in developing countries, by lowering the costs of production and improving resilience of farming systems against weather-related events. This not only contributes to the eradication of hunger. It also supports rural development and the alleviation of rural poverty.

This study assesses the contribution of Belgian development cooperation to agroecology, taking budgetary commitments as an indicator. To do so, it relies on a dataset of a total of 502 projects or flows classified as supporting agriculture or food security for the period 2013-2017. It uses a specific methodology that takes into account both the more or less systemic nature of the changes introduced in food production and in food systems more generally (the "Levels" of agroecology) and the different degrees to which projects may contribute to the changes concerned. Using this two-dimensional assessment tool, the study examines three categories of projects: it distinguishes between governmental flows (whose objectives and set-up are (primarily) decided by DGD, executed either directly by the Belgian development agency Enabel or its predecessor, the Coopération Technique belge (CTB) or indirectly through NGOs or multilateral organizations); non-governmental flows (decided and executed by NGOs or research institutions); and multilateral flows (project-type interventions and core contributions to multilateral organizations or funds). These categories represent respectively 20%, 28% and 52% of the total number of projects analyzed.

The total Belgian ODA for agriculture and food security amounts to 1.2 billion euros for the 2013-2017 period. A significant part of this total budget (more than 465 million euros, about 39% of the total) does not promote agroecology at any level. Moreover, even where agroecology receives some level of support, 27% of the total budget contributes only to Level 1 (improving efficiency of conventional agriculture), and 13% to Level 2 (substituting alternative farming practices or inputs to conventional methods). Only 9% of the total budget goes to support projects reaching Level 3 (redesigning the whole agroecosystem). The remaining 12% contribute to the (re)connection between producers and consumers (Level 4) or to the transformation of food systems (Level 5). In other terms, a significant part of the projects that do make some mention of ecological objectives, referring for instance to the need to preserve and enhance agrobiodiversity or soil health, did not lead to the adoption of concrete measures delivering on this pledge. This illustrates the important risk of "greenwashing" -- in other terms, the risk that references to ecological objectives, or even to agroecology as such, remain purely rhetorical --. It also confirms the danger of conflating "doubly green revolution" or "smart agriculture" approaches with agroecological approaches, in a context in which there is broad recognition of the need to move to more sustainable ways of producing food, but where many policymakers still entertain doubts about the potential of agroecology.

The study shows, finally, striking differences between the various channels of support to agriculture and food security. As regards governmental flows (representing slightly more than 238 million euros), more than half, i.e. 56%, does not support agroecology at all, at any level. Projects led by Enabel exemplify this, since 13 such projects, representing 57% of the budget Enabel dedicates to projects in the area of agriculture and food security, do not contribute to

agroecology at all; this was the case also for 38% of the budget of the (now defunct) Belgian Fund for Food Security (BFFS), and for no less than 72% of humanitarian projects executed by NGOs. In comparison, "non-governmental flows", which represent a total of more than 334 million euros for the 2013-2017 period, make a far more significant contribution to the promotion of agroecology: only a small portion of that total budget (5%, corresponding to 23 projects out of a total of 281) was found to be failing to promote agroecology at any level. By the same measure, in contrast, funds going to multilateral organizations, representing a total of 630 million euros, fail to make a meaningful contribution to the agroecological transition: half of the budget (more than 314 million euros) goes to projects that do not contribute to agroecology at any level.

1. Introduction

Agroecology has been defined as the "application of ecological science to the study, design and management of sustainable agroecosystems" [1]. It seeks to improve agricultural systems by mimicking or augmenting natural processes, thus enhancing beneficial biological interactions and synergies among the components of agrobiodiversity[2]. Common principles of agroecology include recycling nutrients and energy on farms, rather than augmenting nutrients with external inputs; integrating crops and livestock; diversifying species and genetic resources in the agroecosystems over time and space, from the field to landscape levels; and improving interactions and productivity throughout the agricultural system, rather than focusing on individual species. Agroecology is highly knowledge-intensive, based on techniques that are not delivered top-down but developed on the basis of farmers' knowledge and experimentation. Its practices require diversifying the tasks on the farm and linking them to the diversity of species (including animals) that interact at field level.

A variety of techniques have been developed and successfully tested in a range of regions that are based on this approach[3]. *Integrated nutrient management* reconciles the need to fix nitrogen in the soil with the importing of inorganic and organic sources of nutrients and the reduction of nutrient losses through erosion control. Thus, it also builds up soil organic matter, which enhances soil fertility and can bind significant amounts of carbon in the soil. *Agroforestry* incorporates multifunctional trees into agricultural systems. *Water harvesting* in dryland areas enables the cultivation of formerly abandoned and degraded lands, and improves the water productivity of crops. The *integration of livestock into farming systems*, such as dairy cattle, pigs and poultry, including using zero-grazing cut and carry practices, provides a source of protein to families while also fertilizing soils. The incorporation of fish, shrimps and other aquatic resources into farm systems, such as into irrigated rice fields and fish ponds, provides similar benefits. These approaches involve the maintenance or introduction of agricultural biodiversity as a result of the integration of diverse crops, livestock, agroforestry, fish, pollinators, insects, soil biota and other components.

Such resource-conserving, low-external-input techniques have a huge, yet still largely untapped, potential to address the combined challenges of production, combating rural poverty and contributing to rural development, while also preserving ecosystems and mitigating climate change. Since about a decade, a wide range of experts within the scientific community and international agencies such as the FAO and Bioversity International[4], and UNEP[5] view it as a way to improve the resilience and sustainability of food systems[6]. More recently, a series of landmark international reports examining how agricultural development and food systems reform could contribute to the achievement of the Sustainable Development Goals have identified agroecology as providing a number of benefits across different dimensions of sustainability: they include reports from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)[7], from the Intergovernmental Panel of

[1] Altieri, M.A. (1995). *Agroecology: The Science of Sustainable Agriculture*. Second edition. Boulder, CO, Westview Press

[2] Altieri MA (2002). Agroecology: the science of natural resource management for poor farmers in marginal environments. *Agriculture, Ecosystems and Environment*, 93: 1–24

[3] Pretty J (2008). Agricultural sustainability: Concepts, principles and evidence. *Phil. Trans. R. Soc. B,* 363(1491): 447–465

[4] FAO and Bioversity International (2007). Sustainable agriculture and rural development (SARD). Policy Brief 11. Rome

[5] UNEP (2005). *Agroecology and the Search for a Truly Sustainable Agriculture*. Mexico

[6] International Assessment of Agricultural Science and Technology for Development (IAASTD) (2008). Summary for decision makers of the Global Report. Washington, D.C.; Wezel A et al. (2009). A quantitative and qualitative historical analysis of the scientific discipline of agroecology. *International Journal of Agricultural Sustainability*, 7/1 : 3–18

[7] IPBES (2018). Summary for policymakers of the assessment report on land degradation and restoration of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [Scholes, R. J., Montanarella, L., Brainich, E., Barger, N., ten Brink, B., Cantele, M., ... & Kohler, F.]

Experts on Climate Change (IPCC)[8], from the Independent Group of Scientists appointed by the Secretary-General on the progress towards the SDGs[9], from the Global Commission on Adaptation[10], from the International Panel of Experts on Sustainable Food Systems (IPES-Food)[11] and from the Committee of World Food Security's High-Level Panel of Experts (HLPE)[12].

The growing global consensus on the importance of agroecology in meeting the SDGs can be explained by the many channels through which it can contribute not only to food security, but also to other development goals. Agroecology can guarantee to the local communities adequate nutrition through the provision of diversified, safe, and balanced diets: whereas the shift from diversified cropping systems to simplified cereal-based systems following the "Green Revolution" implemented in the 1960s and 1970s contributed to micronutrient malnutrition in many developing countries[13], nutritionists now increasingly insist on the need for more varied agroecosystems, in order to ensure a more diversified nutrient output from farming systems[14]. Agroecology can also improve the incomes of small-scale farmers, particularly in developing countries, by lowering the costs of production and improving resilience of farming systems against weather-related events, including those linked to climate change: resilience, indeed, is strengthened by the use and promotion of agricultural biodiversity at ecosystem, farm system and field levels, made possible by many agroecological approaches[15]. Agroecology can also make a significant contribution to climate change mitigation both by reducing the use of external inputs that depend on fossil energy for their production and that result in important emissions of nitrous oxide and by preserving and enhancing soil health and agrobiodiversity, allowing soils to function as carbon sinks and to maintain their function of regulating water cycles: according to the IPCC's 2019 Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems, the natural response of land to human-induced environmental change caused a net sink equivalent to 29% of total CO_2 emissions during 2007-2016, but the ability for land to help regulate the climate is now at risk, as a result of climate change, and we need to urgently enhance and support more sustainable management of land. Agroecology can significantly improve agricultural productivity where it has been lagging behind, and thus to increase production where it needs most to be increased (i.e. primarily in poor, food-deficient countries), while at the same time improving the livelihoods of smallholder farmers and preserving ecosystems. This would also slow the trend towards increasing urbanization in the countries concerned, which is placing stress on their public services. Moreover, it would contribute to rural development and

[8] IPCC (2019). Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]

[9] Global Sustainable Development Report (2019). *The Future is Now – Science for Achieving Sustainable Development*. United Nations, New York

[10] Global Commission on Adaptation (2019). *Adapt now: A global call for leadership on climate resilience.*

[11] For a systematic review, see IPES-Food (2016) *From Uniformity to Diversity: A Paradigm Shift from Industrial Agriculture to Diversified Agroecological Systems,* International Panel of Experts on Sustainable Food Systems; see also FAO (2018) *Scaling up agroecology initiative. Transforming food and agricultural Systems in support of the SDGs.* Proposal of the international symposium on Agroecology, 3-5 April 2018. FAO, Rome. http://www.fao.org/3/I9049EN/i9049en.pdf.

[12] HLPE (2019). *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition*. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

[13] Demment MW et al. (2003). Providing micronutrients through food based solutions: A key to human and national development. *Journal of Nutrition*, 133: 3879–3885

[14] Alloway BJ, ed. (2008). *Micronutrient Deficiencies in Global Crop Production*. Springer Verlag; DeClerck FAJ et al. (2011). Ecological approaches to human nutrition. *Food and Nutrition Bulletin*, 32 (suppl. 1): 41S–50S; Kennedy G, Hunter D, Garrett J, Padulosi S (2017). Leveraging agrobiodiversity to create sustainable food systems for healthier diets. *UNSCN News* 42, pp. 23-32; HLPE (2017) *Nutrition and food systems.* A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome.

[15] Platform for Agrobiodiversity Research– Climate Change project, Bioversity International and The Christensen Fund (2010). The use of agrobiodiversity by indigenous and traditional agricultural communities in adapting to climate change. Synthesis paper

preserve the ability of succeeding generations to meet their own needs. In addition, the resulting higher incomes in the rural areas would contribute to the growth of other sectors of the economy by stimulating demand for non-agricultural products[16].

This study asks whether Belgian development cooperation is doing enough to support the transition to agroecology. In order to answer this question, it assesses the share of agroecology in Belgian Official Development Assistance (ODA), or Belgian federal foreign aid, to encourage a better understanding of what kind of agriculture Belgium promotes abroad through its development aid flows. This study is part of a growing European agroecology analysis movement. This movement was launched by Michel P. Pimbert and Nina Moeller with their study published in 2018 and titled "Absent Agroecology Aid: On UK Agricultural Development Assistance Since 2010[17]". More recently, the International Panel of Experts on Sustainable Food Systems (IPES-Food) has teamed with the Institute for Development Studies (IDS) and with Biovision, a Swiss Foundation for ecological development, to assess the proportion of the expenditures of agricultural research and development supporting agroecology, using the examples of Switzerland as a public donor, the Bill and Melinda Gates Foundation (BMGF) as the philanthropic donor, and Kenya as a recipient and implementing country in Sub-Saharan Africa[18].

This study is in part inspired by these efforts. There is a clear and urgent need for a reorientation of agricultural development towards systems that use fewer external inputs linked to fossil energies, and instead use plants, trees and animals in combination, mimicking nature instead of industrial processes at the field level. However, the success of such a reorientation will depend on the ability to learn faster from recent innovations and to disseminate what works more widely. Governments have a key role to play in this regard. This is first because encouraging a shift towards sustainable agriculture implies transition costs: farmers must learn new techniques and revitalize traditional and local knowledge, moving away from the current systems that are both more specialized and less adaptive, and have a lower innovation capacity[19]. It is also because the spread of agroecology should take into account that it is knowledge-intensive, building on the farmers themselves, and promoted ideally through farmer-to-farmer learning in farmer field schools or through farmers' movements, as in the Campesino-a-Campesino movement in Central America and Cuba[20]. A dissemination of knowledge thus conceived – through horizontal, farmer-to-farmer means –, transforms the nature of knowledge itself, which becomes the product of a network[21]. It should encourage farmers, particularly small-scale farmers living in the most remote areas and those eking a living from the most marginal soils, to work with experts towards a co-construction of knowledge, ensuring that advances and innovative solutions will benefit them as a matter of priority, rather than only benefiting the better-off producers[22].

The promotion of agroecology thus presents development cooperation with new challenges. While this study cannot examine the full range set of these challenges, it aims to examine, as a preliminary condition, whether agroecology is afforded the priority it deserves in Belgian official development assistance, taking budgetary commitments as an indicator. It is our hope that it shall encourage to rethink how priorities are set, and how resources are spent.

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[16] Adelman, I (1984). Beyond export-led growth. *World Development*, 12(9): 937–949

[17] Pimbert, M. P., & Moeller, N. I. (2018). Absent agroecology aid: on UK agricultural development assistance since 2010. *Sustainability*, *10*(2), 505.

[18] Biovision/IPES-food/IDS "Advocacy4Agroecology" study, to be published in 2020.

[19] Pretty, J (2008). Agricultural sustainability: Concepts, principles and evidence. *Phil. Trans. R. Soc. B,* 363(1491): 447–465). Supporting the agroecological transition also may require to rethink how we support farming communities: rather than top-down approaches or the distribution of inputs (seeds, fertilizers, pesticides

[20] Degrande, A et al. (2006). Mechanisms for scaling-up tree domestication: How grassroots organisations become agents of change. Nairobi, International Centre for Research in Agroforestry (ICRAF); Rosset P et al. (2011). The Campesino-to-Campesino agroecology movement of ANAP in Cuba. *Journal of Peasant Studies*, 38(1): 1–33

[21] Warner, K.D. and Kirschenmann, F. (2007). *Agroecology in Action: Extending Alternative Agriculture through Social Networks*. Cambridge, MA, MIT Press.

[22] Uphoff, N. (2002). Institutional change and policy reforms. In: Uphoff N. ed. *Agroecological Innovations: Increasing Food Production with Participatory Development*. London, Earthscan Publications.

2. Presentation of the study

This study relies on a specific methodology that takes into account both the different "Levels" of agroecology (i.e., the more or less systemic nature of the changes introduced in food production and in food systems more generally) and the different degrees to which projects may contribute to the changes concerned. In order to account and classify each budgetary flow's "agroecological potential", we adopted the Agroecology Criteria Tool (ACT) methodology developed by Biovision[23]. The tool is based on the analytical framework established by Gliessman on the 5 Levels[24] of food system change[25], and integrates the 10 Elements of Agroecology by FAO[26]. Gliessman defines agroecology as "a way of redesigning food systems, from the farm to the table, with a goal of achieving ecological, economic, and social sustainability[27]". Its framework proposes to classify food system change in 5 "Levels". While the first 3 Levels are at farm level/scale, Level 4 and Level 5 are societal changes, going beyond farm redesign and addressing the food system redesign itself. The five Levels are the following:

Level 1[28]: practices focused on **increasing efficiency** of industrial or conventional farming, such as: reduced used of synthetic fertilizers, pesticides, water and energy; reduced waste; improved plant variety and animal breed; precision agriculture. These changes reduce the negative impacts of industrial inputs use. They can be driven by economic incentives, however, as much as by ecological incentives/convictions.

Level 2: alternative practices **substituting** conventional practices, such as: replacing industrial fertilizers with compost or manure, using alternative pest-control, use of biomass waste for energy generation, planting cover crops for improved soil conditions and adoption of organic farming. While this level of transition replaces environmentally degrading practices with more renewable natural practices, "the basic agroecosystem is not usually altered from its more simplified form, hence many of the same problems that occur in industrial systems also occur in those with input substitution[29]."

Level 3: **redesign** of the agroecosystem in order to integrate ecological practices, such as multicropping, complex crop rotations, agroforestry, integrated crop-animal systems. In this level of transition, the farm is conceived as a whole and the production system is subject to fundamental changes.

Level 4: **(re)connection** between producers/growers and consumers/eaters, thanks to: short food chains and webs, local markets, supporting local economic development by creating a circular and solidarity economy, Community Supported Agriculture (CSA) schemes, ...

Level 5: build on the agroecological farm practices of Level 3 and the new alternative market relationships of Level 4, Level 5 **creates a "new global food system**, based on equity, participation, democracy and justice, that is not only sustainable but helps restore and protects Earth's life support systems upon which we all depend[30]." Level 5 measures go from strengthening peasants' organizational capacities to the establishment of equitable governance over natural resources and inclusive policy development on agroecology.

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[23] See https://www.agroecology-pool.org/ (last consulted on 31 Jan. 2020)

[24] We use capital letters to designate these "Levels" throughout this study, in order to underscore the specific meaning we attach to the term.

[25] Gliessman, S. R. (2014). *Agroecology: the ecology of sustainable food systems*. CRC press.

[26] Food and Agriculture Organization of the United Nations (FAO) (2018). *The 10 Elements of Agroecology. Guiding the transition to sustainable food and agricultural systems.*

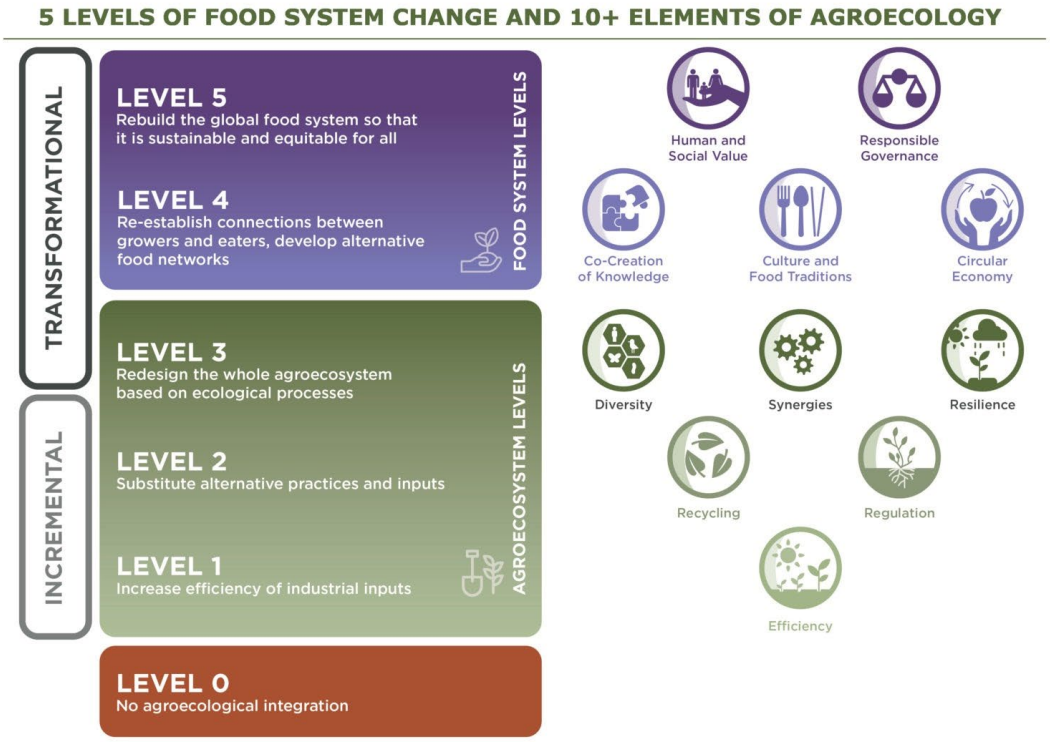
[27] Gliessman, S. R. (2014). *Agroecology: the ecology of sustainable food systems*. CRC press.

[28] Pimbert, M. P., & Moeller, N. I. (2018). Absent agroecology aid: on UK agricultural development assistance since 2010. *Sustainability*, *10*(2), 505.

[29] Gliessman, S. R. (2016). Transforming food systems with agroecology: 187–189.

[30] Gliessman, S. R. (2016). Transforming food systems with agroecology: 187–189.

Two remarks are in order. First, although Gliessman presents Level 1 (aiming at improved efficiency) as a first step towards the agroecological transition, this study does not consider it demonstrates a commitment to this transition; nor does it see Level 2 changes as necessarily leading to a transition to agroecology. Indeed, these first two first levels are incremental and not transformational. It is only from Level 3 onwards that the farm, and then the food system, are truly redesigned. Second, change towards the 5 "Levels" of agroecology is not always linear, and Levels are permeable. A project does not always need to fully achieve one level in order to start completing the next one.



3. Methodology and limitations of the research

At our request, the DGD Department D4.2 – Quality Management and Results – provided us with an excel-file listing all aid projects funded by Belgium, all sectors and regional levels combined, and sometimes going back as far as 1980. This represents about 12500 entries. In order to analyze only relevant contributions to our study, we narrowed down the statistical population using several criteria.

Belgium reports its aid flows under the concept of Official Development Assistance (ODA)[31], developed by the Development Assistance Committee (DAC) of the OECD[32]. Following this international framework, each flow/contribution is recorded under several codes, reflecting the donor country, the agency, the recipient country, the character of resource flow (bilateral or multilateral), the type of finance (grant or loan) and its purpose, e.g. the sector of destination of the contribution. In order to analyze only projects that might contain agroecological characteristics, we selected all projects having DAC sector codes falling under the definition of "agriculture and food security" sector according to the Belgian government. The following DAC "purpose codes" fall into the "agriculture and food security" sector and account for the committed 15%: 310 Agriculture (311: Agriculture and livestock, 312: Forestry, 313: Fishing), 12240 (Basic Health - Basic nutrition), 43040 (Other Multisector - Rural development), 52010 (Food assistance), 72040 (Humanitarian Aid - Emergency food assistance). Following the 2008 global food crisis, Belgium committed to devote 15% of its ODA to agriculture and food security from 2015[33]. Belgium then reaffirmed its commitment in the 2017 "Strategic Note Agriculture and Food Security" for Belgian Development Cooperation[34].

As we decided to focus our study on *federal* ODA flows, excluding regional sub-levels, we narrowed our research to the Directorate-General for Development Cooperation and Humanitarian Aid (DGD), which "agency code" is 10. The DGD defends the various aspects of Belgian development cooperation and falls within the competence of the Minister for Development Cooperation. It is since 2002 part of the Federal Public Service (FPS) Foreign Affairs, Foreign Trade and Development Cooperation. DGD funding may come in various types: projects by the Belgian development agency Enabel, programs by non-governmental organizations co-funded by DGD, contributions to international organizations, humanitarian aid, and administrative expenditures.

The analysis of projects financed by the Belgian Investment Company for Developing countries (BIO) does not enter the scope of this study. As BIO only invests in private sector projects through loans or equity and not through grants[35], and since Belgium takes the "institutional approach" in reporting BIO's private sector instruments to OECD DAC, these non-concessional flows (i.e. at market terms) are not reported as ODA, but as "other official flows", with only Belgium's capital contribution to BIO being reported as ODA (hence the denomination "institutional approach"). However, considering that the

[31] Official Development Assistance (ODA) refers to the "flows of official financing administered with the promotion of the economic development and welfare of developing countries as the main objective, and which are concessional in character with a grant element of at least 25 percent (using a fixed 10 percent rate of discount). By convention, ODA flows comprise contributions of donor government agencies, at all levels, to developing countries ("bilateral ODA") and to multilateral institutions. ODA receipts comprise disbursements by bilateral donors and multilateral institutions. Lending by export credit agencies—with the pure purpose of export promotion—is excluded" (IMF. 2003. External Debt Statistics: Guide for Compilers and Users – Appendix III, Glossary, IMF, Washington DC).

[32] See http://www.oecd.org/development/financing-sustainable-development/development-finance-standards/dacandcrscodelists.htm (last consulted on 31 Jan. 2020).

[33] Eggen, M. (2018). *Aide publique de la Belgique pour l'agriculture et la sécurité alimentaire*. Policy Brief (Coalition contre la faim).

[34] FPS Foreign Affairs, Foreign Trade and Development Cooperation (2017). *De la subsistance à l'entrepreneuriat*, Note stratégique « Agriculture et Sécurité alimentaire » pour la Coopération belge au développement. p.5

[35] See https://www.bio-invest.be/en/about-bio (last consulted on 31 Jan. 2020).

Belgian government is increasingly relying on this financing tool for its development cooperation, the analysis of the type of project supported by BIO would be interesting to conduct in the future.

The study aims to arrive at an estimate of the current efforts of Belgium to support the agroecological transition. It therefore focuses on projects having started during the 5-years period 2013-2017[36]. Projects that were launched before 2013 are thus not part of our "statistical population", even though such projects may still be implemented and thus financed during the 2013-2017 period. On the other hand, the projects that were launched during the 2013-2017 period are included, even where such projects may be continuing beyond 2017 and even though the budgets provided may not be spent in full by the end of 2017. The study thus intends to reflect the financing priorities set by the DGD during the period examined, without weighting the different projects based on their life span.

Based on the submentionned DAC codes, we identified 535 data entries for the 5-year period 2013-2017. Out of the 535 data entries, 32 were actually empty lines and hence do not need to be analyzed, and one other project was cancelled before any money was spent. Our study therefore covers a total of 502 projects or flows.

Belgium became member of the International Aid Transparency Initiative (IATI) in 2012[37]. We therefore expected to find information on money donated overseas by the Belgian government on the online platform/portal d-portal.org[38], which is supposed to gather all IATI data. Indeed, IATI is a global initiative launched at the Third High Level Forum on Aid Effectiveness in Accra in 2008, that aims to deliver information required to improve the coordination, accountability, transparency and effectiveness of money flowing into developing countries[39]: the IATI Standard provides guidance to governments, multilateral institutions, private sector and civil society organizations on how to publish foreign aid contributions, and all published data are in principle available in one place, the IATI register[40], which feeds the d-portal.org website. But, just like Pimbert and Moeller[41], we were not able to use the portal for our study. The website is still only available in beta version and a significant amount of project data appears to be missing or unreliable.

Subsequent to this observation, we tried to use the newly launched "openaid.be" website. The Belgian portal openaid.be was launched by the Minister for Development Cooperation in early 2019 and is meant to improve the transparency of Belgian development policy[42]. The website does indicate that "in this portal you will find all projects, programs, international contributions, humanitarian aid, or other expenditures since 2014 that are part of the official Belgian aid and charged to the budgets of the Directorate General for Development Cooperation and humanitarian aid (DGD)[43]". However, the portal appears to be still far from being complete and existing data are not always accurate either. When discussing these shortcomings, we were told that "for now", openaid was meant "to bring some transparency, but was not yet reliable, partially because data could not be updated easily".

Since the information of the 502 identified projects could not be found online, the DGD graciously granted access to their internal database. Even there, documents were not always easy to find, but thanks

[36] The 2018 data were not yet all available and this 5-year period allows us to include 2 cycles of NGO programs (triennial programs that started in 2014 and new quinquennial programs that started in 2017)

[37] Sous-comité technique IATI du Comité de Concertation de la Coopération Non-gouvernementale (CCCNG) (2017). *Comment utiliser le standard de l'International Aid Transparency Initiative (IATI): Guide de publication à l'attention des Organisations de la Société civile (OSC) et des Acteurs institutionnels (AI) subventionnés par la Direction générale Coopération au développement et Aide humanitaire (DGD) en Belgique*, Version 1.0.

[38] https://d-portal.org/

[39] https://iatistandard.org/

[40] https://www.iatiregistry.org/

[41] Pimbert, M. P., & Moeller, N. I. (2018). Absent agroecology aid: on UK agricultural development assistance since 2010. *Sustainability*, *10*(2), 505.

[42] https://openaid.be/

[43] About this website, https://openaid.be/

to the generous time and help of some people working in the DGD Department D4.2, we were able to access at least one document per project. Even though documents were sometimes long to find, it is worth noting that we were able to access at least one document per project (except for multilateral core-funding flows), which does not seem to be always the case across European Union members[44].

For each flow we analyzed at least one document in detail, the type of document depending of the type of flow. Enabel projects and NGOs programs were assessed based on their Technical and Financial File. Humanitarian projects were examined based on the information provided in the "Single form for the financing of prevention activities, emergency assistance, aid for short-term rehabilitation and humanitarian action". Multilateral flows, finally, which were the most difficult to analyze, were assessed under available documents such as each organization's strategy for the period and annual reports. Having reviewed the general objective, the specific objective(s), the expected results, the different activities and the integration of transversal themes (gender, environment, …), we ranked each contribution using the grid of the 5 levels of agroecology, and we categorized each contribution as either "not promoting agroecology", "potentially promoting agroecology", "partially promoting agroecology", or "promoting agroecology". The classification is based on the following definitions:

- A project is categorized as "*not promoting AE*" either if it supports only conventional agriculture (Level 0) or if it is not explicit on the type of agriculture it supports and does not contain any of the agroecology criteria; projects that are actually off-topic with regard to farming or food system are also categorized as "not promoting AE".
- A project is categorized as "*potentially promoting a given level of AE*" if it contains some notion of ecology, if it mentions some elements like "biodiversity" or "soil conservation", or if it states an intention to "prioritize agroecological techniques when possible", but where there is no clear mention of concrete measures taken, nor details provided. We do not want to exclude that those projects will contribute to a certain level of agroecological shift, but we cannot be sure how and if they will really enforce agroecological measures.
- A project is considered as "*partially promoting a given level of AE*" if its budget will not be spent entirely on activities promoting agroecology, either because some of its components are irrelevant to agriculture (such as the construction of latrines for instance) or because part of the funding is working against the ends of the promotion of agroecology (promotion of exportation for instance). Projects assessed as "partially promoting AE" do contain a notion of ecology or sustainability not only as part of their stated objectives but also as part of their realizations or results, however, in that regard, they go a step beyond projects assessed merely as "potentially promoting AE". Projects within this category therefore demonstrate a genuine, albeit partial, integration of the requirements of an ecological transition.
- Finally, a project is categorized as "*promoting a given level of AE*" if the main objective of the project is to support an agroecological transformation and if it contributes in fact to this objective, i.e. if each of the expected results achieves progress on at least one of the elements of agroecology as listed in the Biovision framework. For a project to belong to this category, it is thus not sufficient that it states as one of its objectives, or even as its exclusive objective, to promote agroecology. Indeed, some projects may present themselves as promoting agroecology whereas they actually only propose level 1 measures, or have as main aim to promote the export of organic products. Those projects have not been categorized as fully promoting AE.

Finally, it should be specified that a project categorized as "partially promoting Level 3 of agroecological change" for example, also partially promotes Levels 1 and 2. As a general rule, a project is categorized according to the highest level to which it can contribute, provided that it has fulfilled some elements of each previous level. A project typically must include at least two measures of a level to be considered as contributing to that level.

[44] Pimbert, M. P., & Moeller, N. I. (2018). Absent agroecology aid: on UK agricultural development assistance since 2010. *Sustainability*, *10*(2), 505.

Classifying projects in separate boxes is not necessarily easy in all cases. In spite of the conscientious use of the analysis grid, our analysis remains partially qualitative in nature. Indeed, not all documents contained the same level of detail, and some flows could be categorized based on more relevant information than others. As a general rule in this study, we decided to err on the generous side when assessing the projects, as did the Pimbert study on the United Kingdom's development cooperation policies[45]. Moreover, it bears mentioning that we have considered each flow as a whole, without consideration of "which part of a project budget actually ends up contributing to the project aims and objectives 'on the ground'[46]".

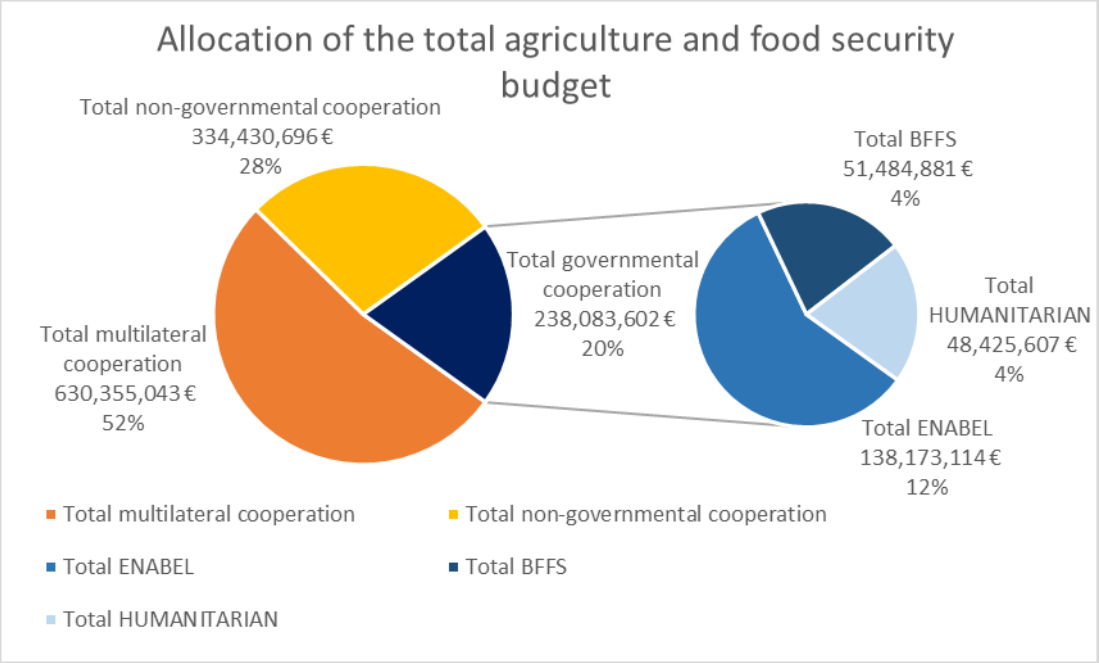
[45] Pimbert, M. P., & Moeller, N. I. (2018). Absent agroecology aid: on UK agricultural development assistance since 2010. *Sustainability*, 10(2), 505: 4.

[46] Pimbert, M. P., & Moeller, N. I. (2018). Absent agroecology aid: on UK agricultural development assistance since 2010. *Sustainability*, 10(2), 505: 4.

4. Discussion of results by funding channel

We reviewed 502 relevant projects for a total budget of EUR 1,202,869,341 for the 2013-2017 period. The three funding channels of the DGD can be described as such:

- **Governmental flows:** projects/activities/disbursements whose objectives and set-up are (primarily) decided by DGD, executed either directly by the Belgian development agency Enabel[47] or indirectly through NGOs or multilateral organizations (including programs of the Belgian Fund for Food Security / Fonds Belge pour la Sécurité Alimentaire (BFFS / FBSA) and bilateral humanitarian projects). Governmental cooperation accounts for 20% of the total Belgian ODA for agriculture and food security.
- **Non-governmental flows:** the quinquennial, previously triennial, programs decided and executed by NGOs on the basis of their "droit d'initiative", i.e. their prerogative to put forward goals and approaches within the conceptual framework and limits set out in dialogue with DGD. Non-governmental cooperation represents 28% of the total Belgian ODA for agriculture and food security.
- **Multilateral flows:** these predominantly refer to multilateral project-type interventions and core contributions to multilateral organizations or funds, for which the study includes the imputed parts for relevant sectors. The latter are not so much real projects or activities but rather "imputed flows", which should however be taken into account as well in order to draw a comprehensive picture of Belgian ODA for agriculture and food security. Project-type interventions can be either humanitarian projects or longer-term projects. Cooperation through multilateral channels accounts for 52% of the total Belgian ODA for agriculture and food security.

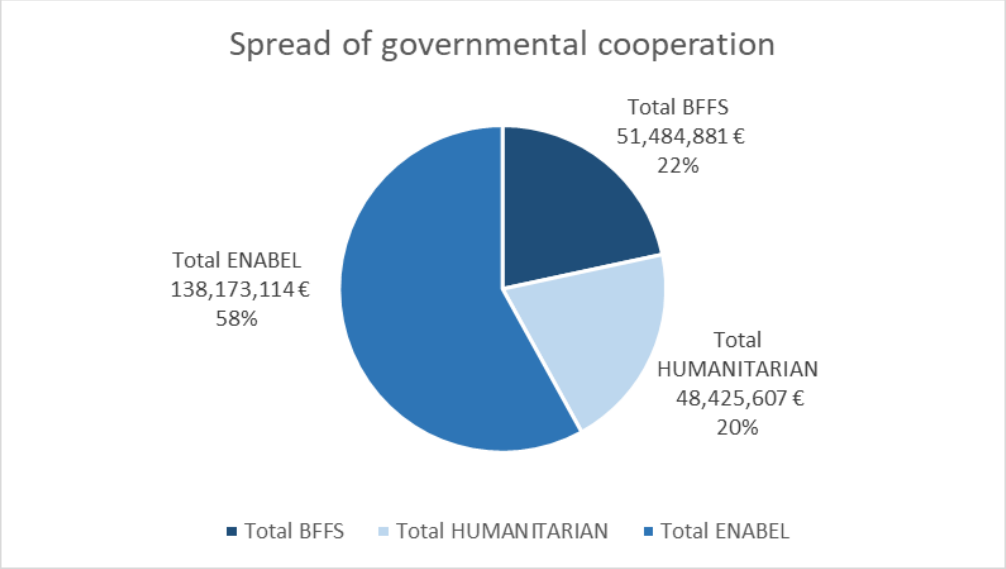


[47] Previously CTB - Coopération Technique Belge

4.1. Governmental flows

In order to reflect more accurately the true share of direct and indirect bilateral development cooperation, we decided to divide the bilateral funding channels in accordance with "who decides" the project's objectives rather than in accordance with "who executes" the project. The reason for this choice is that some projects and programs executed by NGOs are in fact primarily set up by the DGD and do not especially reflect the main priorities of NGOs, which are simply relied upon to implement the project. Governmental flows are thus projects/activities/disbursements whose objectives and set-up are decided by the DGD, executed either directly by the Belgian development agency Enabel or indirectly through NGOs or multilateral organizations (including BFFS - Belgian Fund for Food Security - programs and humanitarian projects). On the other hand, non-governmental flows are the programs and projects decided and executed by NGOs and Belgian research institutes.

Using this mode of classification, governmental flows (the precise destination of which is decided by the government) amount to slightly more than 238 million euros (EUR 238,083,602), i.e. 20% of the total 2013-2017 agriculture and food security budget. These flows can be divided into three different types: 1° the Enabel projects and programs - set up and executed exclusively by the DGD and Enabel - represent 58% of this category; 2° the BFFS programs - set up by the DGD collaboratively with NGOs and multilateral organizations and executed by Enabel, Belgian NGOs and multilateral organizations - account for 22% ; and finally 3° humanitarian interventions account for 20%.



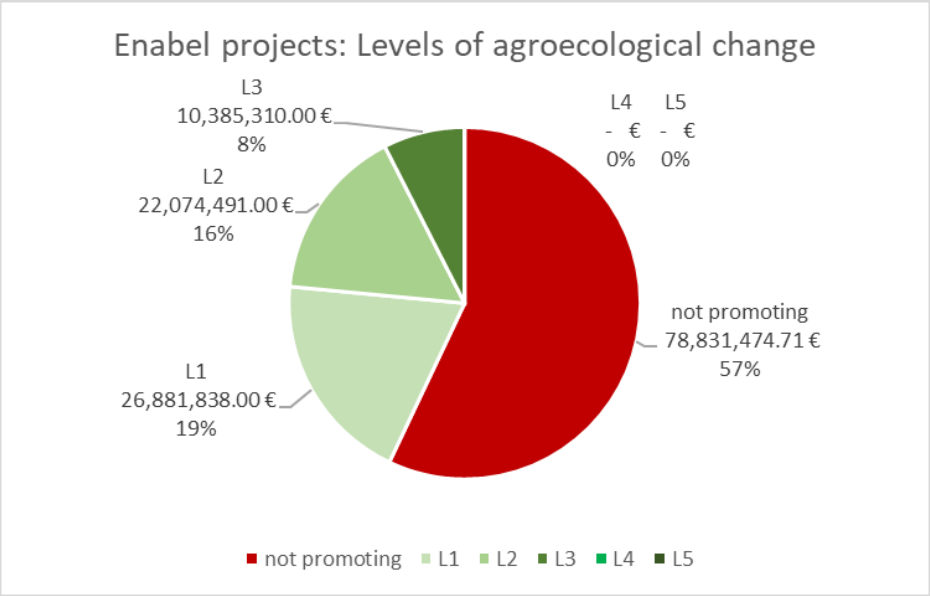
4.1.1. Enabel projects

Enabel is the Belgian public development agency. Its stated mission is to implement and coordinate the Belgian governmental cooperation in 14 partner countries[48]. Over the period 2013-2017 Enabel has undertaken 20 projects in the agriculture and food security sector, with a total budget of EUR 138,173,114, which represents 11.49% of the total Belgian ODA for the sector. The average budget of Enabel projects is higher than that of the other projects directly financed by the government: indeed, although they represent only about a quarter of the total number of projects, they account for more than half of the overall governmental funding (58%).

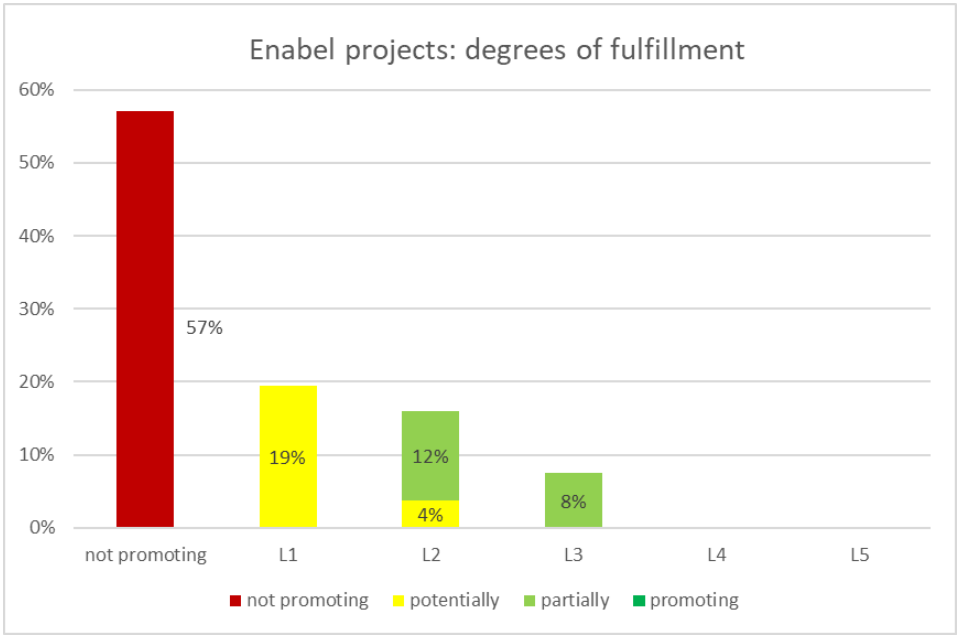
[48] See https://www.enabel.be/content/about-enabel (last consulted on 31 Jan. 2020).

A large majority of Enabel projects do not promote agroecology

Although the projects implemented by Enabel are generally long-term, the analysis of Enabel projects reveals that 13 of them do not contribute to agroecology at any level; together, these projects represent 57% of the budget. 19% of the budget goes to projects contributing to Level 1 change, 16% to Level 2 and 8% to Level 3. None of the 20 projects contains enough Level 4 or Level 5 measures (reshaping markets to support direct farmer-to-consumer relationships or transforming food systems) to be considered as contributing to system-wide transformation.



None of the 20 projects led by Enabel was found to be fully promoting agroecology, regardless of the level. Furthermore, only one of the projects was found partially promoting Level 3 of agroecological change. With a budget of EUR 10,446,108, this project, taking place in the Democratic Republic of the Congo, accounts for 8% of the total Enabel budget for the agriculture and food security sector for the period 2013-2017. Projects accounting for another 12% partially contribute to Level 2 of agroecological change. Finally, 19% of the budget goes to projects potentially contributing to Level 1 of change and 4% to projects potentially contributing to Level 2 of change.

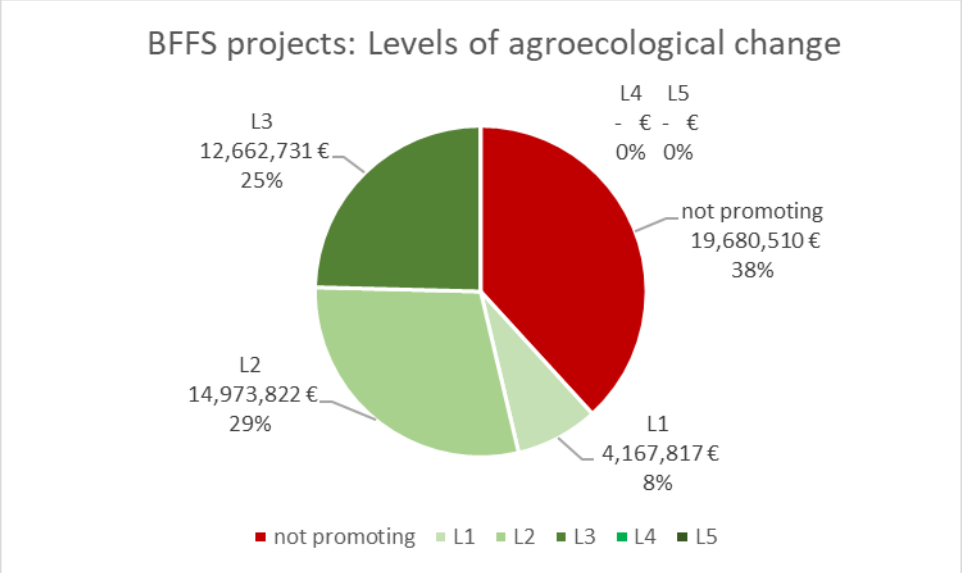


4.1.2. Belgian Fund for Food Security (BFFS) projects

The Belgian Fund for Food Security (BFFS) was created in 2010, to "improve, in Sub-Saharan Africa, (...), the food security of the population living in areas of major food insecurity, including the most vulnerable groups of this population[49]". It was funded by the National Lottery through a 250 million euros grant for an initial 10-year period (2010-2020) and additional funding could be mobilized through the development cooperation budget. The BFFS aims to establish "multi-sectoral and integrated programs (multidimensional), implemented by various development organizations (multi-actor) who cooperate within a single program (program approach)[50]". The BFFS' programs can be carried out by Belgian NGOs, multilateral organizations and Enabel, the Belgian development agency.

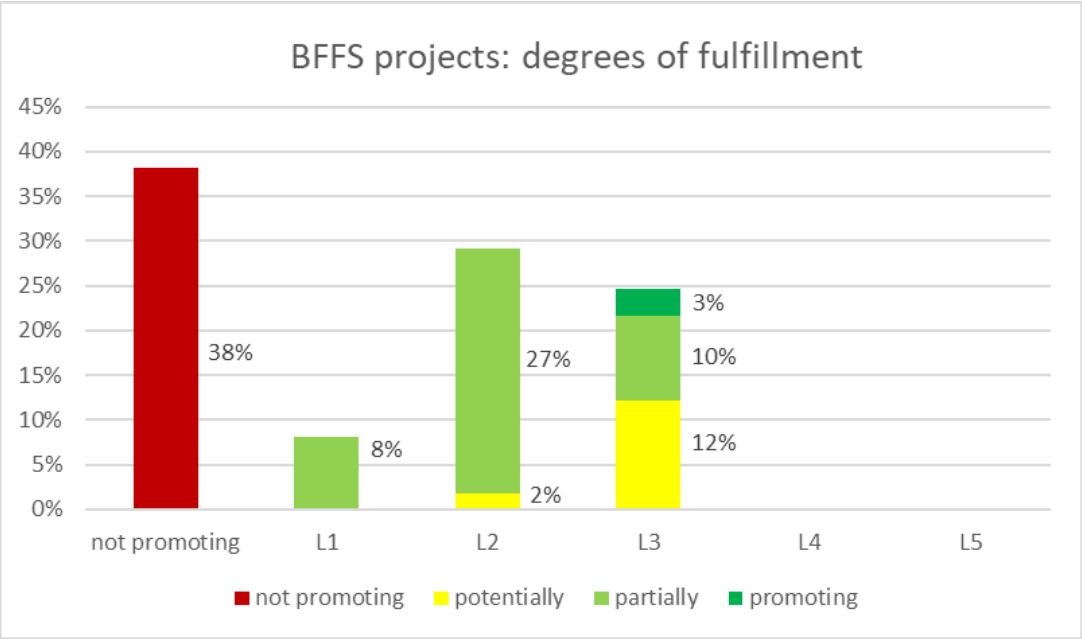
The Belgian government records BFFS programs in its governmental cooperation independently of who executes them. This study follows this same logic. 33 BFFS projects started over the 2013-2017 period, amounting for a total budget of 51,48 million euros (EUR 51,484,881) and representing 22% of the governmental cooperation for agriculture and food security. Out of the 33 entries, four entries were in fact for "preparation, monitoring and evaluation costs": they were therefore categorized according to the agroecological levels of the program they covered.

While 38% of the BFFS budget was found not to promote agroecology at any level, 8% was found to go to projects promoting certain elements of Level 1 (improving efficiency in the use of resources), 29% to projects promoting Level 2 elements (partially (27%) or potentially (2%) promoting the substitution of alternative practices or inputs), and 25% to projects promoting Level 3 elements (redesigning the whole agroecosystem). In this latter category, only one project (representing 3% of the total BFFS envelope for the period) fully incorporated Level 3 components, while projects representing 10% of the budget partially promoted Level 3 components; the remainder (representing 12% of the budget) was only potentially promoting the Level 3 components. Within the BFSS projects, none of the projects were found to be promoting, even partially or potentially, Levels 4 or 5 of the agroecological transition implying systems change.



[49] As stipulated in the legislation establishing the Belgian Fund for Food Security (Loi abrogeant la loi du 19 février 1999 portant création du Fonds belge de survie et créant un Fonds belge pour la Sécurité alimentaire, *Moniteur belge*, 11.2.2010), art. 2.

[50] Belgian Development Cooperation (2014). *Strategy Paper of the Belgian Fund for Food Security*



Although we have not had the opportunity to go into more detail to understand exactly how BFFS programs and their objectives are set, it should be noted that working jointly with Belgian NGOs seems to be a strong incentive for the DGD and Enabel to take greater account of agroecological principles. Indeed, BFFS projects show a much higher degree of integration of agroecological principles than other governmental projects. Its recent abolition could hence be a step backward for the integration of agroecological transformative change. Nevertheless, even if agroecological principles are significantly more developed in BFFS joint programs than in projects determined and executed by the DGD and Enabel alone, it is important to note that none of them goes beyond Level 3.

On the abolition of the Belgian Fund for Food Security (BFFS)

Redesigned in 2010 on the base of the former fund (Fonds belge de survie - Belgian Fund for survival, established in 1999) with the objective to adapt its approach and improve the quality and effectiveness of its interventions, the BFFS has since then been repealed: in October 2015, the government decided to abolish 90% of the Framework Funds (*fonds organiques*), including the BFFS (such funds are established by legislation that allocates expenditures to be drawn from the public budget). The decision was to become effective by the end of 2015. This decision was then enshrined in the "program law" of 25 December 2016, definitively abrogating the BFFS, despite the program being only halfway through (the BFFS was initially planned to operate at least for the period 2010-2020)[51]. During the parliamentary debate, the government pledged to integrate the theme of food security into government cooperation programs and to maintain the objective of "devoting 15% of the Development Cooperation budget to interventions in agriculture and food security[52]", as indeed requested by a parliamentary resolution adopted on 20 April 2017.

[51] Service de l'Evaluation spéciale de la Coopération belge au développement / SES, Particip GmbH (2019). *Evaluation du Fonds belge pour la Sécurité alimentaire, de l'approche multi-acteurs et de l'intégration du thème de la sécurité alimentaire*, FPS Foreign Affairs, Foreign Trade and Development Cooperation

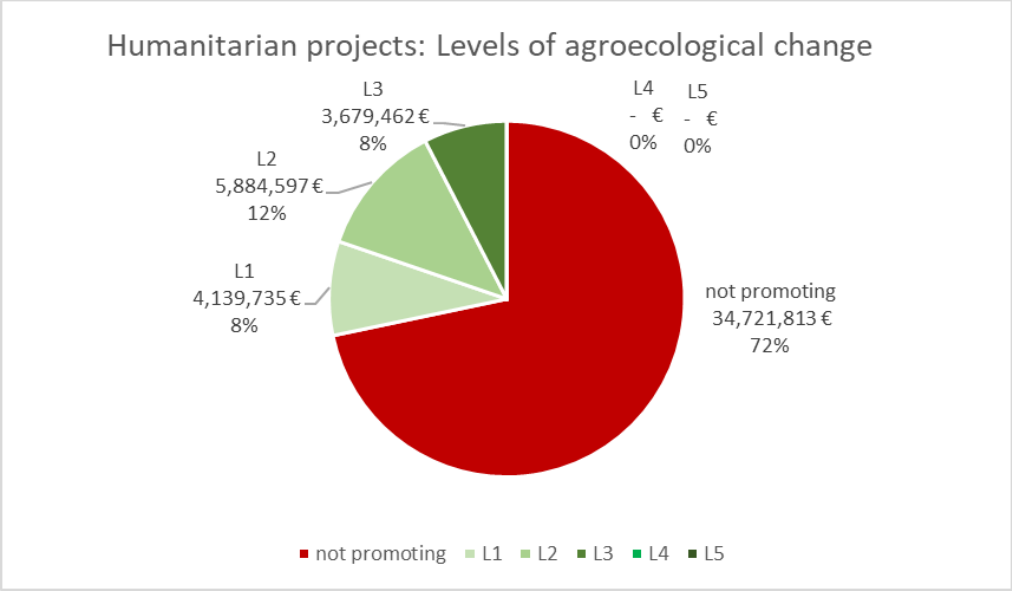
[52] Parliamentary debate in preparation for the adoption of the program law - meeting of 13 December 2016.

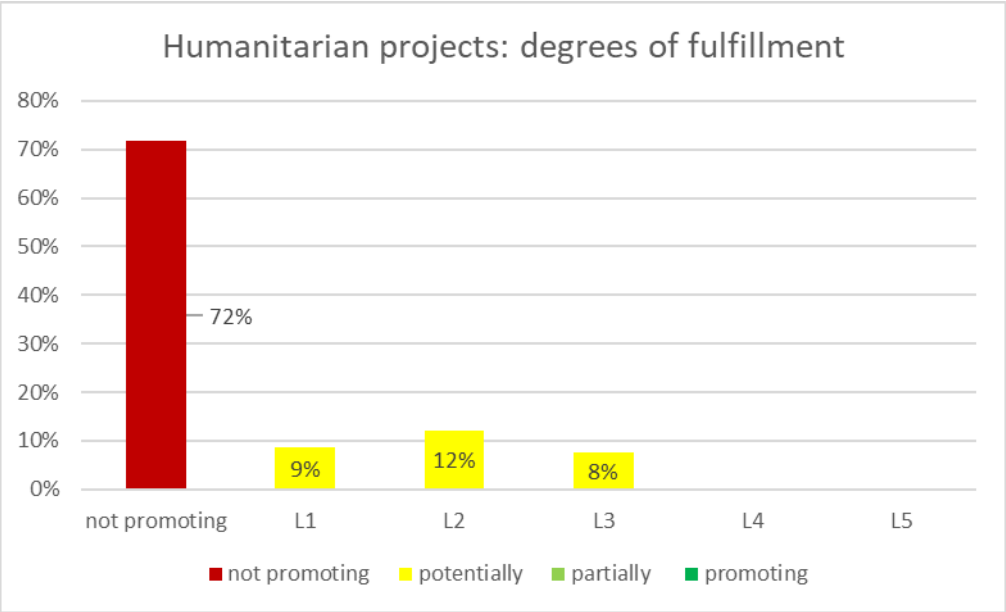
4.1.3. Humanitarian projects

Humanitarian projects are, by their very nature, rather short-term projects, which makes the integration of agroecological principles less likely. Indeed, agroecology is based on principles of continuity and on the common development of local knowledge, principles which are sometimes difficult to incorporate in an urgent response to humanitarian emergencies. The inclusion of humanitarian projects in this study is nevertheless justified, since such projects fall under the 72040 DAC code (Humanitarian Aid - Emergency food assistance) and are included into the committed 15% ODA in the agriculture and food security sector. In addition, most projects last between 9 and 18 months and, after an initial phase of emergency food provision, they include a phase of rehabilitation of affected households' means of production. This second phase is therefore crucial for the promotion of resilient agriculture that is not dependent on external inputs.

Humanitarian projects executed by NGOs amount to more than 48 million euros (EUR 48,425,607) for the period 2013-2017, representing 4% of the total ODA budget and 20.34% of the governmental flows. 72% of the projects were assessed as not promoting agroecology. The remaining 28% were potentially promoting Level 1 (8%), Level 2 (12%) or Level 3 (8%). None of them included any notion of ecology or sustainability in their objectives or results, however, and therefore none could be considered to promote agroecology either partially or fully, although some projects did include some Level 1, 2 or 3 measures.

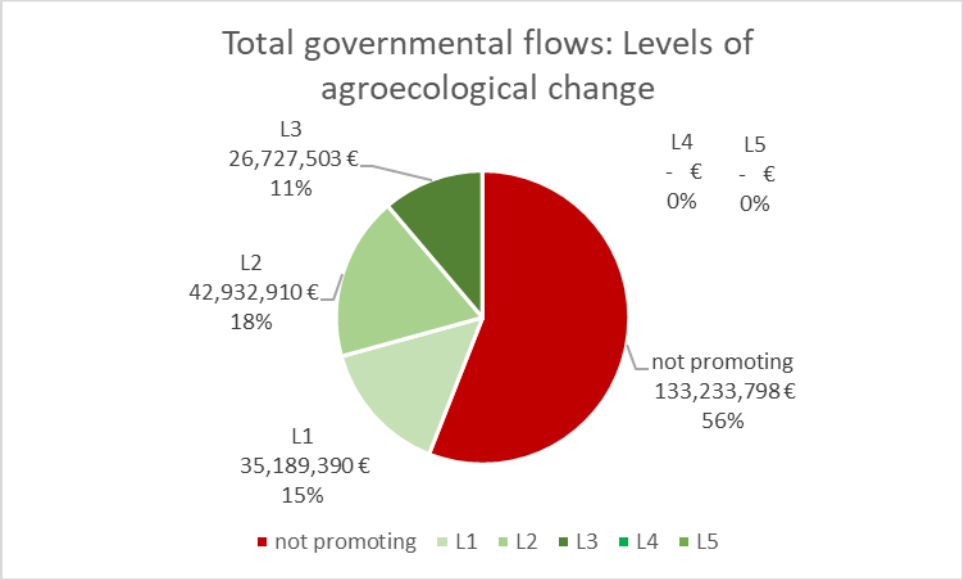
Against this background, there is a real risk that farmers receiving support in the context of a "humanitarian" project shall remain trapped in a situation of dependency towards the technologies and inputs that they were provided as an emergency measure. Specifically, it is very unlikely that farmers who have been benefiting from support in the form of high-yielding varieties of seeds, chemical fertilizers and pesticides shall radically change course following the intervention and direct their efforts towards agroecological practices. The pitfall of path dependency seems just as serious in the case of short-term humanitarian interventions as it is in long-term interventions.



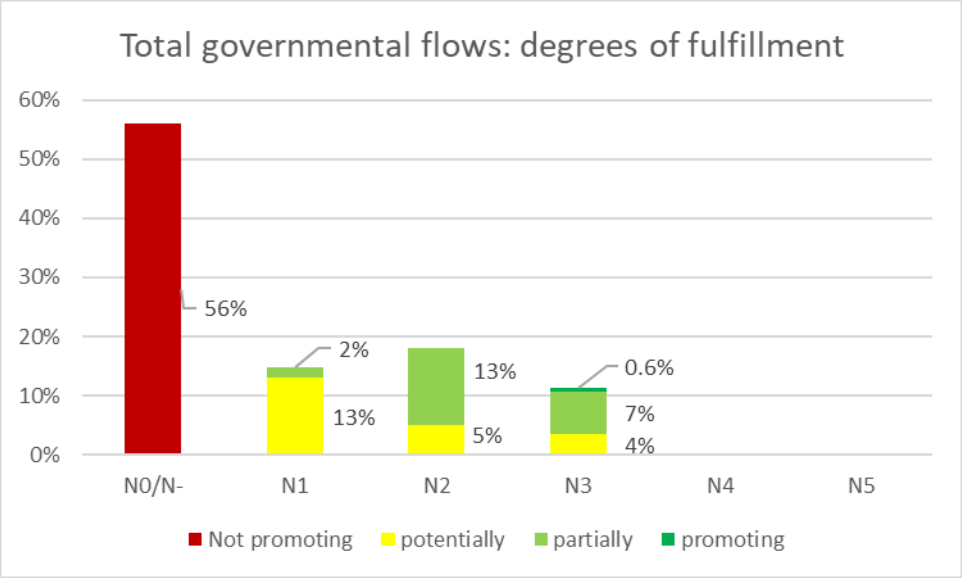


4.1.4. Agroecology in aggregate governmental flows

Looking at the 238 million euros (EUR 238,083,602) overall governmental cooperation budget, it can be observed that more than half, i.e. 56%, does not support agroecology at all, at any level. Next, 15% of the budget contributes to Level 1, 18% to Level 2 and 11% to Level 3. Governmental projects and programs thus only include Level 1, 2, and 3 initiatives and none of them could be categorized as contributing to Levels 4 or 5. In other words, although some projects and programs do contribute to agroecological change at farm level, none are supporting agroecological societal change.



Furthermore, few projects actually make the leap to promote transformative change: only 7% of the budget partially or fully promotes Level 3 of agroecology. Another 15% partially support Level 1 (2%) and Level 2 (13%) of change. The remaining 22% only potentially promotes Level 1 (13%), Level 2 (5%) and Level 3 (4%) of change.

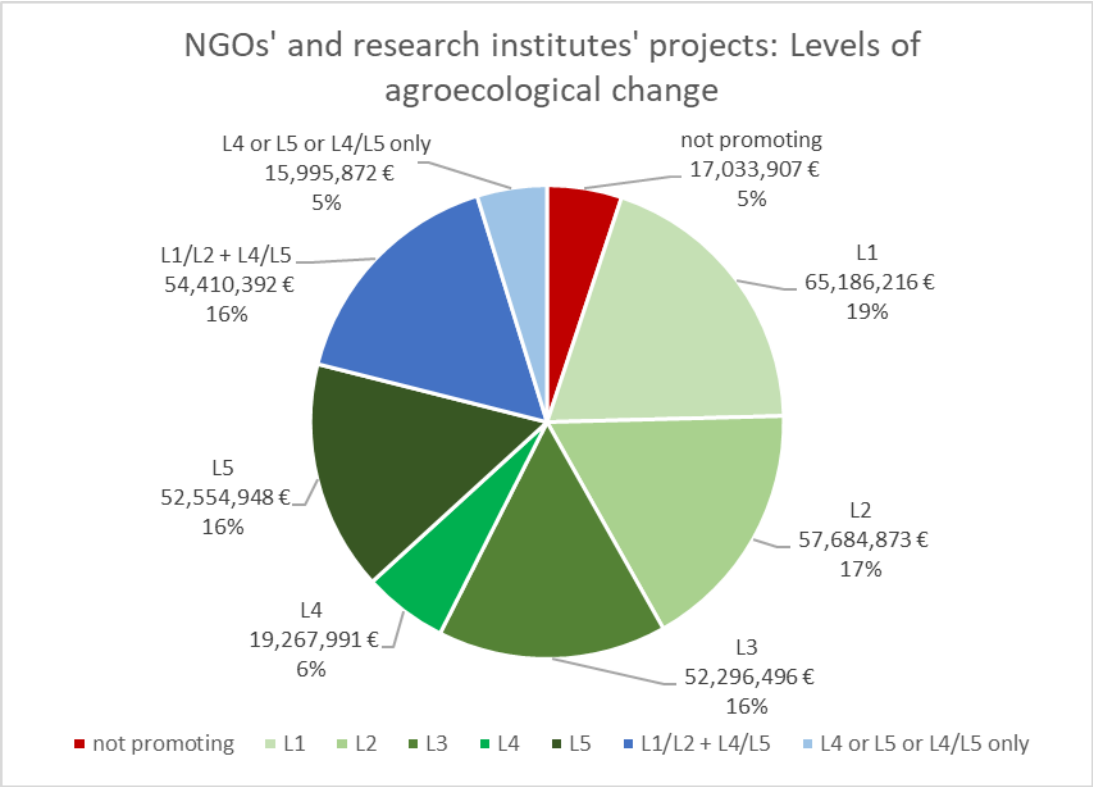


4.2. Non-governmental flows: NGOs and research institutes

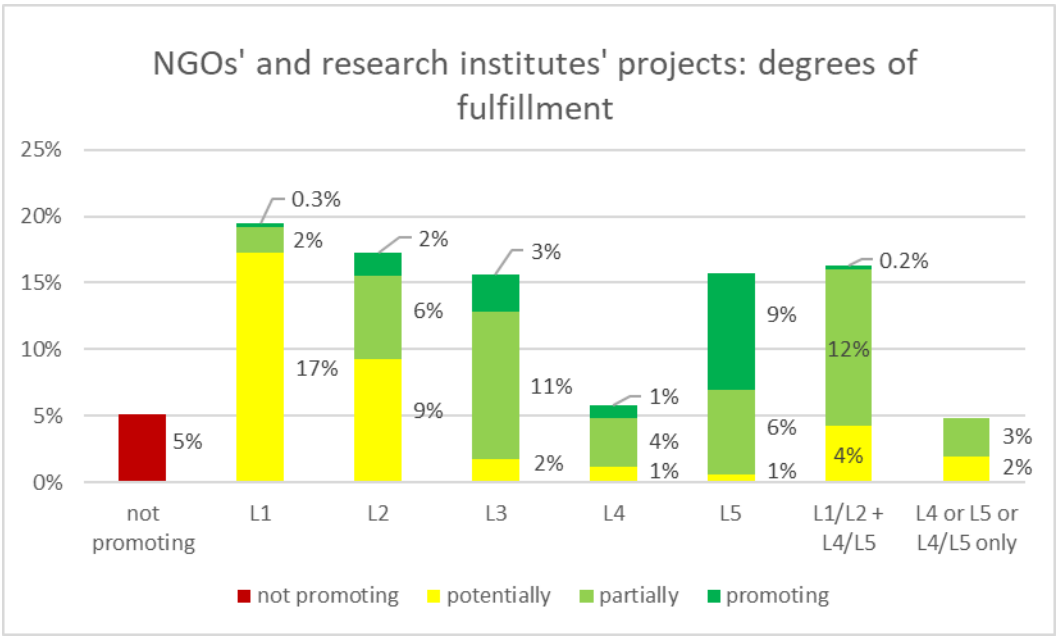
Non-governmental flows consist of funding to Belgian NGOs and national research institutes working on agriculture and food security in developing countries. They amount to more than 334 million euros (EUR 334,430,696) for the 2013-2017 period, representing 28% of the total allocation for agriculture and food security on the period. Most of the flows take the form of five-year programs proposed by NGOs (three-year programs until 2017) and co-financed by the DGD. The budgets considered in this study include only the sums disbursed by the DGD, and do not include the part of the budget financed by NGOs' own funds.

Only 5% of non-governmental projects do not promote agroecology

When coming to non-governmental flows, only 5% of the total budget was found to be failing to promote agroecology at any level: only 23 projects out of a total 281 were neglecting agroecology entirely. 19% of the projects were found to contribute to Level 1, 17% to Level 2, 16% to Level 3, 6% to Level 4 and 16% to Level 5. As can be seen from the pie chart, two new types of projects emerged during the analysis of non-government flows. Firstly, some projects contribute to Level 1 and 2 changes as well as to Level 4 and 5 measures, but without contributing to Level 3. Hence, although these projects do not implement transformative changes at farm level (Level 3), they do support transformative changes at the food system level (Level 4 and Level 5). They account for 16% of the total non-governmental budget. Second, some projects have been identified as only supporting Levels 4 and/or 5, without addressing previous Levels. These are projects that contribute to agroecological change at the societal level, without working at the farm level. This category includes projects such as projects focusing on the inclusive management of natural resources at the regional level, the fight against extractivism, or the creation of a favorable framework for agroecological family farming. They amount to 5% of the total non-governmental budget.



Looking further in detail, 49% of the budget is partially or fully promoting transformational change towards agroecology (14% L3, 5% L4, 15% L5, 12% L1/L2 + L4/L5 and 3% L4/L5 only). Another 10% is partially or fully promoting incremental change by implementing Level 1 (2%) and Level 2 (8%) measures. The remaining 36% are potentially promoting agroecological levels of change: Level 1 and 2 are the more represented (respectively 17% and 9%), and potential support to transformational change (Level 3 and above, including new combinations) represents 10% of the total budget.



The comparison with governmental and non-governmental flows provides a clear demonstration that NGOs and Belgian research institutes perform better at integrating agroecological practices at farm level (L3) and at promoting transformative societal change (L4 and L5). Indeed, while 56% of the budget

directly guided by the DGD make no contribution at all to the agroecological shift, this is the case for only 5% of the total non-governmental flows.

4.3. Multilateral flows

Multilateral organizations are the major recipients of public agriculture and food security funding, totaling more than 630 million euros (EUR 630,355,043), representing 52% of the overall 2013-2017 budget. The study distinguishes between four different types of multilateral flows: project-type interventions, donor country personnel, core contributions to multilateral institutions, and contributions to specific-purpose programs and funds managed by international organizations[53]. They represent respectively 17%, 0.09%, 72% and 11% of the total multilateral budget.

About the analysis of multilateral flows

The analysis of multilateral flows should take into account the specific nature of each category of flow. *Project-type interventions* can be compared to contributions that have been analyzed in the other sections of this study. These are contributions to specific projects, with a precise goal, usually in a particular country and over a given period of time. These contributions have been analyzed based on the corresponding project proposal document. *Donor country personnel disbursements* correspond to "experts, consultants, teachers, academics, researchers, volunteers and contributions to public and private bodies for sending experts to developing countries[54]". They have been analyzed on the basis of their terms of reference. *Core contributions to multilateral institutions* refers to "un-earmarked contributions to multilateral organizations[55]", of which the imputed parts for relevant sectors are included: as said previously, these are not so much real projects or activities but rather "imputed flows". They have been analyzed on the basis of each organization's strategy (or strategies) in force during the time period of our study, completed by corresponding annual reports when necessary. Similarly, specific strategies and/or documents were used to assess contributions to *specific-purpose programs and funds managed by international organizations (multilateral, INGOs)*, which are contributions to international organizations' "specific programs and funds with clearly identified sectoral, thematic or geographical focus[56]".

To which multilateral organizations does Belgium contribute?

Seven organizations are given 86% of the overall multilateral budget, while the other 11 organizations[57] share the remaining 14% of the budget. Four of the seven major recipients are United Nations' bodies (World Food Program (WFP), United Nations Food and Agriculture Organization (FAO), International Fund for Agricultural Development (IFAD), and the UN Central Emergency Response Fund (CERF)). The three others are the European Development Fund, the World Bank and the CGIAR network of agricultural / food research centers.

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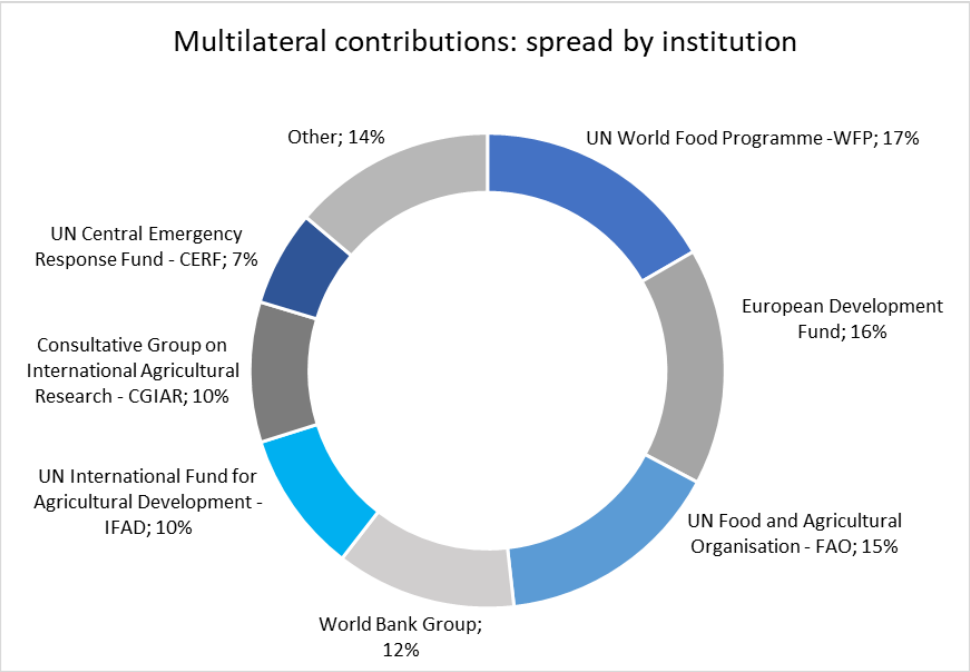
[53] In principle, the reference to "multilateral organizations" includes both intergovernmental organizations and international non-governmental organizations (INGOs). However, while the DGD defines its four types of multilateral flows in this way, in practice contributions to international non-governmental organizations are recorded under "Core support to NGOs and research institutes". This study has therefore analysed these contributions in the section dedicated to non-governmental organizations. One example is the core contribution going to the International Committee of the Red Cross.

[54] Donor country personnel, Openaid Italy. http://openaid.esteri.it

[55] OECD (2018). *What do we know about multilateral aid? The 54 billion dollar question. Policy briefing on multilateral aid.*

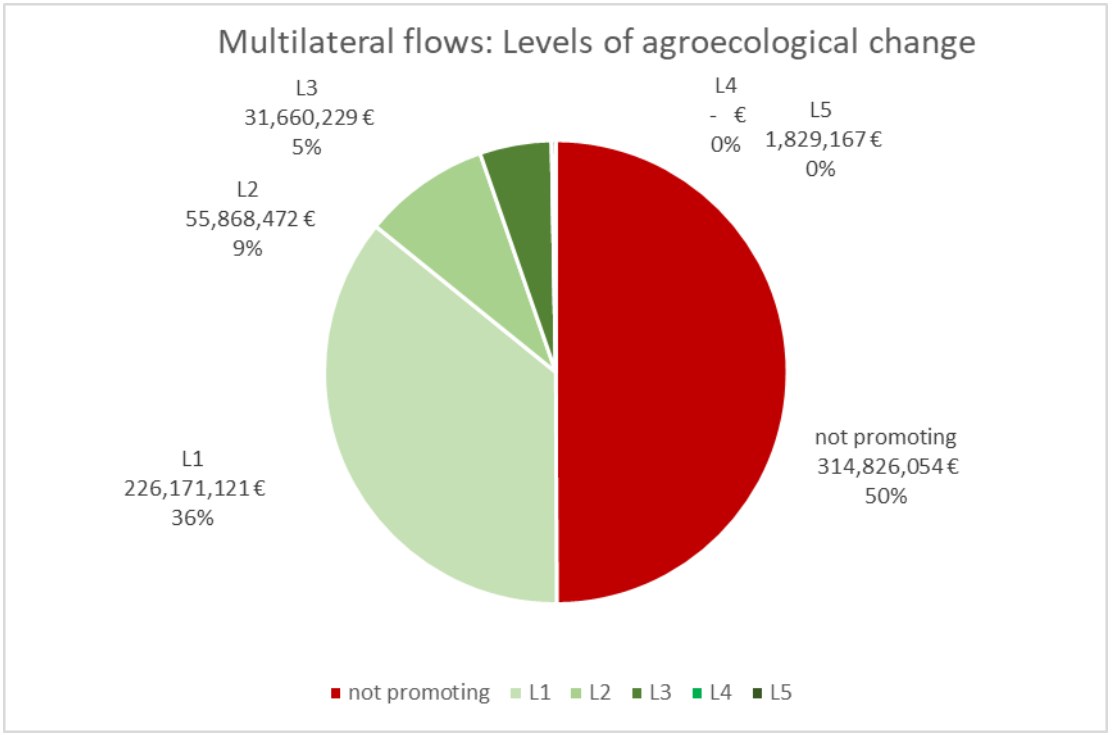
[56] Contributions to specific-purpose programs and funds managed by international organizations (multilateral, INGO), Openaid Italy. http://openaid.esteri.it

[57] African Development Bank (4.3%), UNICEF (3.5%), UNOCHA (2.5%), Global Environment Facility (1.5%), UNHAS Humanitarian Air Service (0.7%), UNWOMEN (0.3%), EU European union earmarked actions (0.5%), Asian Development Bank (0.2%), UNDP (0.05%), UN Volunteers UNV (0.02%)

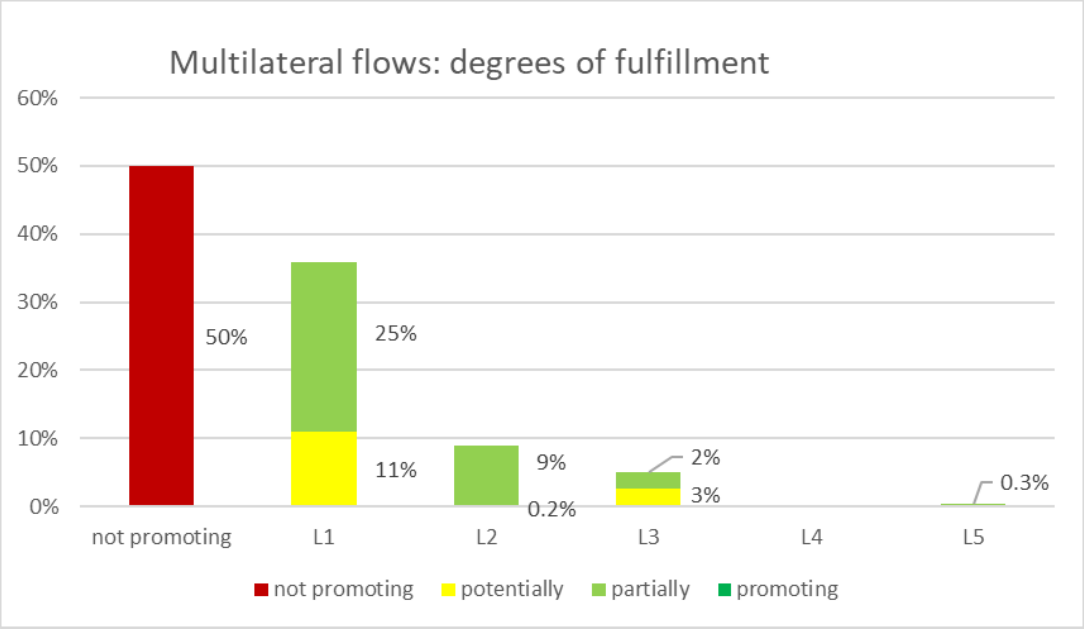


Agroecology in multilateral flows

The analysis of multilateral flows reveals that 50% of the budget, i.e. more than 314 million euros, does not contribute to agroecology at any level. 36% of the total budget contributes to Level 1 of change, 9% to Level 2 of change and 5% to Level 3. This support to multilateral agencies barely contributes at all to systems-level transformation: none of the flows was categorized as Level 4 and less than 1% (0.3%) of the budget was found to contribute to Level 5 of change.



Not only does half of the multilateral budget not promote agroecology at all, our inquiry also shows that not a single flow could be categorized as fully promoting agroecology, regardless of the level: in other terms, none of the projects supported via multilateral institutions state support to the agroecological transition as their main objective and do in fact contribute to this objective being fulfilled. In fact, only 2% of the money granted to multilateral institutions partially promotes transformational agroecological change (2% at Level 3 and 0.3% at Level 5). Nevertheless, 25% of the budget partially promotes Level 1 of incremental change (improved efficiency in the use of resources) and 9% partially promote Level 2 of incremental change (by the substitution of alternative practices to conventional "green revolution" approaches). Finally, 14% of the budget may be seen as potentially contributing to Level 1 of change (11%), Level 2 of change (0.2%) and Level 3 of change (3%).



A large proportion of the contributions going to multilateral organizations takes the form of unmarked envelopes. It is therefore worth mentioning the levels of agroecology that these organizations reach, based on the analysis of their respective global strategies. The World Bank Group, the African Development Bank the Asian Development Bank, the World Food Programme and the Central Emergency Response Fund, do not promote agroecology in any way. The case of the United Nations Food and Agriculture Organization (FAO) is rather different. Based on its reviewed strategic framework 2010-19 (2013), core funding to the Food and Agricultural Organization have been assessed as potentially promoting Level 1 of agroecological change, which remains minimal. Considering however the recent recognition of agroecology as a response to world hunger and global climate crisis by this institution, it is highly likely that this classification will evolve positively in the coming years. The European Development Fund and the Consultative Group on International Agricultural Research (CGIAR) have been categorized has partially promoting Level 1 of agroecology. Core funding to International Fund for Agricultural Development (IFAD), finally, has been assessed as partially promoting Level 2 of agroecological change.

5. Conclusion

Agroecology is connected to the SDGs through a number of channels. Agroecology provides a pathway for a gradual transition away from the fossil-energy-based farming of the earlier generation, and it seeks to preserve soil health and to reduce soil erosion: in fact, it is mostly because of its environmental benefits that it is now considered with interest by governments and international agencies. This connects agroecology to climate action, mentioned in SDG 13, both through its greenhouse gas emissions mitigation potential and because, thanks to its emphasis on diversity, it favors resilience and adaptive capacity to climate-related hazards (which Target 13.1, associated with Goal 13, refers to). It also connects agroecology to SDG 2, on the eradication of hunger, and especially with the pledge to "ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality" (Target 2.4). Agroecology's contribution to soil health relates to SDG 15, which is to combat desertification, halt and reverse land degradation and halt biodiversity loss. Goal 11 moreover refers to cities that are, *inter alia*, sustainable and resilient: by its important contribution to urban and peri-urban agriculture, agroecology can help to make cities greener, cooler and healthier.

The SDGs also emphasize the imperative of eradicating poverty, the objective of Goal 1. Under Goal 2 moreover, which concerns the eradication of hunger, governments have pledged to "double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers" by 2030 (Target 2.3). 700 million people are still in extreme poverty today, and a significant proportion, approximately half of them, live in rural areas and depend on small-scale farming. Although agroecology can be practiced on a large scale, its insistence on intercropping techniques, and on various combinations between plants, trees and animals -- in order to re-establish the agro-sylvo-pastoral complementarities that "modern" agriculture has negated, make it especially suitable when practiced on relatively smaller farms: as such, increased support to agroecology may contribute to re-balancing a competition between large, industrial-size farms, and smaller farms, that is for the moment significantly skewed in favor of the former. It can be a significant instrument in the reduction of rural poverty.

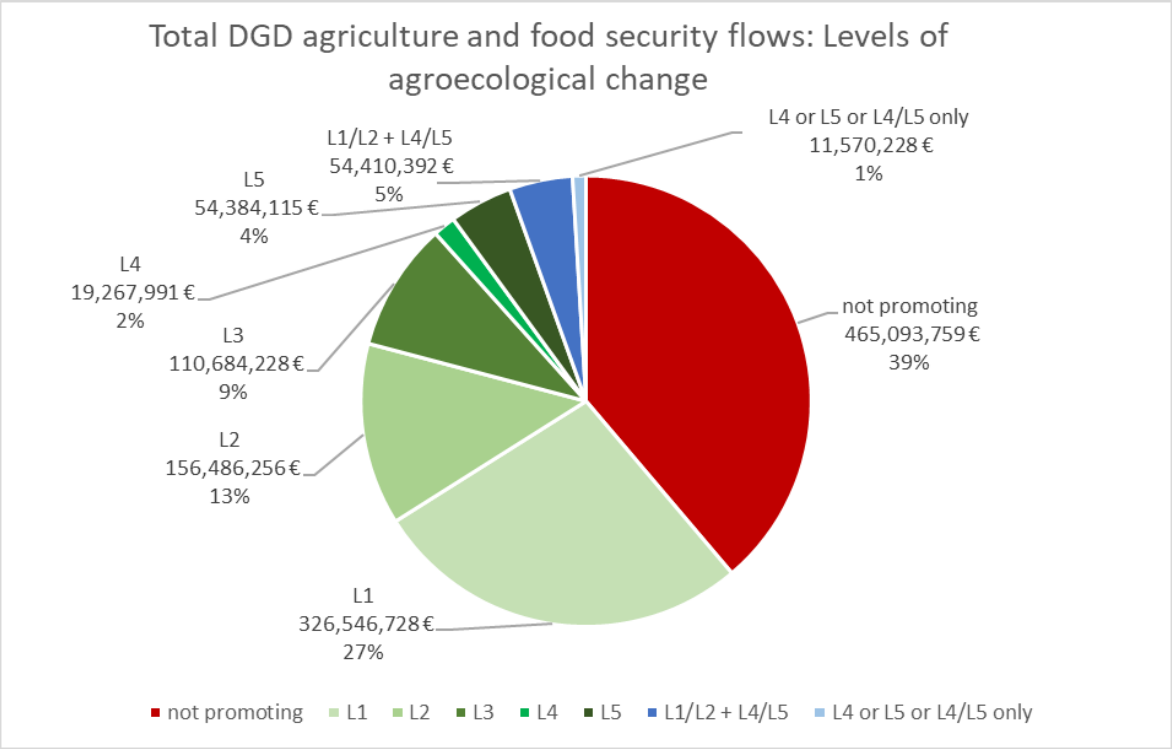
Agroecology also favors better nutrition, both because greater diversity on the farm results in greater diversity in the plates for the communities who produce their own food, and because of the proven benefits to health: organic crops have higher numbers of key antioxidants than conventionally-grown ones, and of course show much lower levels of pesticide residues and of toxic heavy metals, such as cadmium, than industrially grown crops. Most importantly, agroecology represents a shift away from the quasi exclusive focus on growing large cereals in monocultures, which over the past thirty years has in fact reduced the diversity of the plants on which our diets are based, and has favored an ever-increasing reliance on heavily processed foods that are richer in saturated fats and in added sugars and salt. The health benefits of an agroecological revolution would thus be significant, in line with SDG 3, which is about ensuring healthy lives and promoting the well-being of all.

Despite the major contributions agroecology can make to the fulfilment of the SDGs, four major lock-ins still form major obstacles to the agroecological revolution. First, technologies and infrastructures are biased in favor of achieving economies of scale through the reliance on large monocultures that can be more easily mechanized. Second, dominant agribusiness actors -- the large commodity buyers and food processing companies -- are better positioned to supply markets with low-priced foodstuffs, against which other actors, using other, more sustainable modes of production, are unable to compete: until industrial farming methods will be obliged to fully internalize the social and environmental costs they impose on the collectivity, this will not change. Third, the lifestyles or the urban middle class have evolved with the industrial way of producing food that we have been encouraging. Once limited to rich countries, the phenomenon has now reached the tropics : people today have less time to cook, they have relegated food to a secondary place in their lives, and many families have lost even basic culinary skills that are required to reduce the dependency on heavily processed foods, including the convenience foods

that we have become so accustomed to. Fourth and finally, political obstacles remain: large agribusiness actors veto any significant change that would threaten their position in the system, and that would question, in particular, the relegation of the farmer to the position of a captive buyer of inputs, and a provider of raw materials to the food processing industry.

This is why official development assistance has a major role to play to overcome these lock-ins: private investment shall not deliver enough, nor shall it deliver fast enough. This study has sought to assess whether Belgian ODA, in line with the pledges made when the Sustainable Development Goals were adopted in September 2015, is moving in the right direction. What does it show?

The total ODA for agriculture and food security amounts to 1.2 billion euros (EUR 1,202,869,341) for the 2013-2017 period. A significant part of this total budget (more than 465 million euros, about 39% of the total) does not promote agroecology at any level. Moreover, even where agroecology receives some level of support, 27% of the total budget contributes to Level 1 (improving efficiency of conventional agriculture), 13% to Level 2 (substituting alternative farming practices or inputs to conventional methods) and 9% to Level 3 (redesigning the whole agroecosystem). The remaining 12% contribute to the (re)connection between producers and consumers (Level 4) or to the transformation of food systems (Level 5): Level 4 amounts to 2%, and Level 5 to 4%; the combination of Level 1 and Level 2 plus Level 4 and Level 5 accounts for 5% and the combination of Level 4 and Level 5 accounts for 1%. The following figure summarizes these general findings:



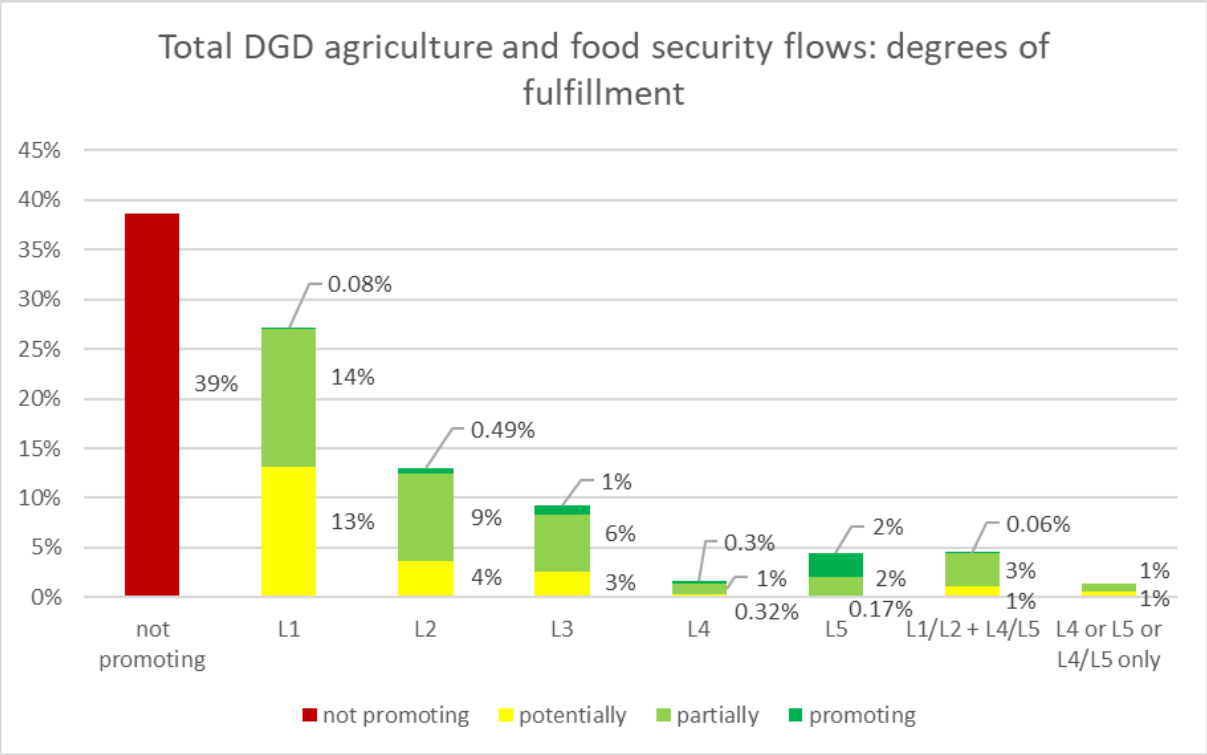
The differences between the various channels of support to agriculture and food security are striking. As regards the significant part of the total budget going to agriculture and food security which is directed by governmental agencies (referred to as "governmental flows" in this study, and representing slightly more than 238 million euros), more than half, i.e. 56%, does not support agroecology at all, at any level. Projects led by Enabel exemplify this, since 13 such projects, representing 57% of the budget Enabel dedicates to projects in the area of agriculture and food security, do not contribute to agroecology at all;

this was the case also for 38% of the budget of the (now defunct) Belgian Fund for Food Security (BFFS), and for no less than 72% of humanitarian projects executed by NGOs.

In comparison, what this study calls "non-governmental flows", in which the destination of funds is directed by NGOs or research institutions, fare relatively better. Such flows represent a total of more than 334 million euros for the 2013-2017 period, and only a small portion of that total budget (5%) was found to be failing to promote agroecology at any level: this corresponds to 23 projects out of a total of 281.

By the same measure, in contrast, funds going to multilateral organizations fail to make a meaningful contribution to the agroecological transition. The amounts concerned are significant: such funds total more than 630 million euros, representing 52% of the overall 2013-2017 budget going to agriculture and food security. But half of this amount, projects worth more than 314 million euros, does not contribute to agroecology at any level.

Even where the flows examined contribute to some extent to the agroecological transition, this contribution remains highly uneven, as illustrated by the figure below:



The breakdown of budgetary flows by the five Levels towards the agroecological transition highlighted by Gliessman shows that, even as regards the 61% of the total budget that does contribute at some level to the promotion of agroecology, such promotion is almost always either "potential" or at best "partial". Projects that are potentially promoting agroecology are projects that make some mention of ecological objectives, for instance by referring to objectives such as the preservation and enhancement of agrobiodiversity or soil health, but for which we could find no indication that concrete measures were taken to deliver on this pledge. The results of our analysis highlight the important risks of "greenwashing" -- in other terms, references to such ecological objectives, or even to agroecology as such, that remain purely rhetorical --; they also confirm the danger of conflating "doubly green revolution" or "smart agriculture" approaches with agroecological approaches, in a context in which there is broad recognition of the need to move to more sustainable ways of producing food, but where

many policymakers still entertain doubts about the potential of agroecology[58]. Projects that seek to reduce the use of nitrogen-based fertilizers by precision farming tools, or to promote "integrated pest management" techniques which reduce the reliance on pesticides, just like the use of drought-resistant or salt-resistant crop plants, are certainly moving us in the right direction. But opportunities are not solutions: unless these changes are seen as a stepping-stone towards agroecology, in other terms, towards the substitution of mixed farming systems prioritizing diversity to the current monocropping schemes supporting uniformity, they may in fact delay changes that are both necessary and urgent.

It is also striking that very few projects score well on Level 4 of the agroecological transformation, which concerns the reshaping of marketing chains in order to favor direct farmer-to-consumer relationships. This alerts us to the need to move beyond a dichotomous approach in which projects support either production for own-consumption or production allowing farmers to enter long (or even global) supply chains, or both: what is needed is also to create marketing opportunities for small-scale farmers by developing local markets -- which means local storage and processing facilities, as well as communication routes -- and by encouraging the setting up of cooperatives allowing these farmers to achieve certain economies of scale and climb the value chain, for instance by processing and marketing the raw materials they produce.

The failure to invest in the development of short supply chains and local markets also results in the lack of faith in agroecology as practiced by small farmers turning into a self-fulfilling prophecy: as long as neither policy-makers nor private actors believe that low-input, knowledge-intensive types of farming, betting on diversity rather than on uniformity, can deliver results that are economically viable and can contribute to the full range of Sustainable Development Goals (including by the reduction of rural poverty, improved nutrition, and environmental objectives such as the improvement of soil health and the reduction of greenhouse gas emissions), they shall not invest in the kind of transformation that is needed in order to give agroecology a fair chance to prove itself. The reason why agroecology has not been growing as fast as it should, despite the considerable leverage it could become for the fulfilment of the SDGs, is not because it does not work: it is because, in a strongly competitive environment, it faces unfair competition from conventional farming techniques and industrial food chains that are not forced to internalize the negative externalities they are causing -- on health, on the environment, and on incomes of small-scale farmers who face such unfair competition --. Against that background, support from governments, and from development cooperation agencies, is more vital than ever.

Annex

[58] Pimbert, M. (2015), 'Agroecology as an Alternative Vision to Conventional Development and Climate-smart Agriculture', *Development*, 58(2-3): 286-298.

Guidelines to analyze Agroecological research projects: The Biovision Agroecology Criteria Tool (ACT)

Level 1: Increase efficiency of industrial and conventional practices

1.1. Efficiency

- Reducing water use
- Reducing pesticide and veterinary drug
- Reducing synthetic fertilizer
- Reducing energy use
- Reducing seed use
- Reducing waste
- Improved plant variety and animal breed

Level 2: Substitute industrial or conventional inputs with more sustainable alternatives

2.1. Recycling

- Alternate amendments
- Green manure
- Recycling of waste water
- Use of biomass waste for energy generation
- Climate mitigation through alternative practices (increasing C stock, reducing GHG emission)
- Other practices that enhance recycling of biomass and organic matter

2.2. Regulation/ Balance

- Biological pest management
- Cover crops for pest management
- Other pest management
- Cover crops for improved soil conditions and health
- Perennial crops
- Reduced tillage
- Adoption of organic and low-input farming
- Domesticated pollinators
- Other Level 2 systems

Level 3: Redesign whole agro-ecosystems

3.1. Synergies

- Non-crop plants
- Agroforestry
- Rotational/regenerative grazing
- Integrated crop-livestock systems
- Other selective combinations/integrations at the farm level to optimize (ecological) synergies
- Integrated pest management by habitat manipulation
- Other landscape planning and synchronized landscape activity leading to improved agricultural ecosystem services
- Climate mitigation through redesigned system (increasing C stock, reducing GHG emission)

3.2. Diversity

- Improving local seed/breed diversity
- Integrating locally adapted crops/races
- Two-Crop rotation
- Three+ Crop rotation
- Spatially diversified farms
- Biodiversity
- Natural pollinators
- Multi-habitat approach
- Diversification of diets and consumption

3.3. Resilience

- Systemic resilience of agroecosystems to extreme weather events and other disturbances (windfall, storm, heavy rain, winter freeze, floods, draught, wildfire)
- Systemic resilience/adaptive capacity to changing environmental conditions due to Climate Change (salinity, average temperatures, new emerging pests and diseases)
- Livelihood Resilience

Level 4: Re-establish connections between growers and eaters, develop alternative food networks

4.1. Circular and Solidarity Economy
- Business support: Re-establishing the connection between producers and consumers
- Supporting regional value generation

4.2. Culture and Food Traditions
- Food tradition and diet

4.3. Co-Creation and Sharing of Knowledge
- Connecting farmers to share knowledge

Level 5: Rebuild the global food system so that it is sustainable and equitable for all

5.1. Human and Social Value
- Gender and vulnerable group approach
- Strengthen organizational capacities
- Equity, dignity, inclusion
- Support right to food (sufficient, access, adequate)

5.2. Responsible Governance
- Policy development on producer-consumer links
- Inclusive policy making
- Establishment of equitable governance and rights over natural resources
- Policy development on AE-global changes links