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Development research

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Foreword

Development research within the Swedish Research Council covers support for research of relevance to the fight against poverty and for sustainable development, and support for collaboration and knowledge exchange between researchers in Sweden and researchers in low income countries and lower middle income countries. The research support is funded via Sweden's international development aid, whose goal is to create prerequisites for better living conditions for people living in poverty and repression, and shall be used according to OECD's definition of development aid. Development research generates knowledge that can contribute clearly to achieving global development goals. Development research contributes knowledge that takes into account circumstances throughout the world, including low and lower middle income countries, and participating researchers from all around the world contribute to this development.

This overview of development research forms part of the knowledge documentation assembled by the Swedish Research Council ahead of the Government's upcoming research bill, and for prioritisations within scientific councils, councils and committees. It can also be used as reference material within the research sector. The overview was produced by the Committee for Development Research at the Swedish Research Council, and is based on an update, follow-up and supplementation of the 2015 subject overview.

Since 2013, the Swedish Research Council and its Committee for Development Research has been responsible for support to development research. The expressed ambition of the transfer of development research support to the Swedish Research Council in 2013 was both to ensure that the quality of review and assessment was in parity with other research funding from national government research councils, and also to integrate development research more clearly in the broader research landscape, and thereby also attract new researchers to the area and encourage new research constellations. Continued development of supplementary interaction with other research funding within the Swedish Research Council, and with other research funding nationally and internationally forms an important area for the Committee's strategic work. At the same time, really excellent collaboration and intensive dialogue has developed over the years with Sida, the Swedish International Development Cooperation Agency, and thereby also good interaction between development research and other parts of Sweden's research collaboration and research within development collaboration.

This research review presents the scope, contents and development of the support for development research during the last 5 years. Based on a review of applications received, a survey among researchers in the field, and national and international

contemporary environment analyses, a number of recommendations are made for how the support for development research can contribute to increased internationalisation of Swedish research, high quality interdisciplinary research, research that supports the global development goals, and research that can contribute to creating prerequisites for better living conditions for people who live in poverty and repression. To achieve this, a larger Government appropriation is required, along with some revision of the terms and conditions for the appropriation, continued integration of development research in the broader research landscape, and continued collaboration with other funding bodies nationally and internationally.

I would like to thank all who have contributed to the research overview. In particular, I would like to thank the Committee for Development Research for intensive work on highlighting visions and opportunities for the research field, and for many interesting and constructive discussions.

Stockholm, December 2018

Kerstin Sahlin

Secretary General of Development Research at the Swedish Research Council

Summary

Development research within the Swedish Research Council covers support for research of relevance to the fight against poverty and for sustainable development, and support for collaboration and knowledge exchange between researchers in Sweden and researchers in low income countries and lower middle income countries. The research support is funded by Sweden's international development aid, whose goal is to create prerequisites for better living conditions for people living in poverty and repression, and shall be used according to OECD's definition of development aid. Development research contributes to identifying and explaining changing prerequisites for development and human living conditions, and it contributes with solutions and with describing consequences and implications of measures undertaken. Development research generates and disseminates information for knowledge-based development; knowledge that can contribute clearly to achieving global development goals.

It is clear that the world is facing a number of challenges. The list is long, but some examples relate to the spread of anti-microbial resistance, climate changes, energy, economic development, inequalities between countries, genders, generations, social groups and people, migration, conflict and peace-keeping, and also digitisation of a number of sectors. The United Nations' Sustainable Development Goals (2030 Agenda) are universal, and indicates clear goals for world development. The agenda emphasises that global research is needed, with participation from the whole world, and with development of better underlying knowledge in order to achieve the global goals.

Unfortunately, there are obstacles to free flow and exchange of ideas, knowledge and initiatives between researchers. Many researchers from low income countries do not have access to the global scientific arena. They often do not have the same opportunity to access results published by other researchers, or to access common scientific networks and channels for presenting their own results. Development research provides opportunities to link up the most up-to-date technology and locally-oriented knowledge, achieving end results that are useable and adapted to different types of societies. However, it is important that this type of collaboration between researchers is free from political influences. The work must be driven by the researchers themselves. Likeminded researchers with similar interests must find each other and many-faceted expertise that ranges across traditional scientific disciplines, techniques, analysis tools and background knowledge can bridge geographical borders and be linked together into something new and useful.

The Committee for Development Research at the Swedish Research Council has formulated a vision for development research in a ten-year perspective. The vision is that knowledge is developed that in various ways can make a clear contribution

to achieving the global development goals, that research is developed that takes into account circumstances throughout the world, including low and lower middle income countries, and that participating researchers from all around the world contribute to this development. To make this possible, we must create an ever more equal situation in the long term between researchers in Sweden and collaborators in low and lower middle income countries, when the goals and uses of research can more clearly benefit all. The link between different international collaborations is stimulated by providing opportunities for flexible solutions for researcher exchanges, which contributes to promoting interdisciplinary research collaboration. Knowledge and information about development research shall reach out better to the research community, which contributes to development research becoming a well-known and attractive subject area that interacts well with other research funding within the Swedish Research Council and the rest of the Swedish research landscape. Swedish development research should be an international driving force.

Development research spans across all scientific fields, and includes both basic research and more directly policy-relevant and applied research. Applications within development research are currently reviewed within three subject areas: global health, humanities and social sciences, and natural, engineering and environmental sciences. Approximately the same number of applications are received and awarded each year within each one of these three areas.

This research review presents the scope, contents and development of the support for development research during the last 5 years. Based on a review of applications received, a survey of researchers in the area and monitoring of the contemporary environment nationally and internationally, a number of recommendations are given on how the support for development research can be improved, for the purpose of better utilising the potential of research, supporting research of the highest scientific quality, and ensuring that this research has increased impact in society. As an international research actor, Sweden has an important role in driving and making visible Swedish development research internationally. Recommendations are made for how the support for development research can contribute to increased internationalisation of Swedish research, high quality interdisciplinary research, research that supports the global development goals, and research that can contribute to creating prerequisites for better living conditions for people who live in poverty and repression. To achieve this, a larger Government appropriation is required, along with some revision of the terms and conditions for the appropriation, continued integration of development research in the broader research landscape, and continued collaboration with other funding bodies nationally and internationally. A number of specific thematic initiatives, where targeted research support and coordination of research initiatives are justified, are also suggested.

Introduction

Development research generates knowledge that can contribute clearly to achieving global development goals. Development research contributes knowledge that takes into account circumstances throughout the world, including low and lower middle income countries, and participating researchers from all around the world contribute to this development. Development research within the Swedish Research Council covers support for research of relevance to the fight against poverty and for sustainable development, and support for collaboration and knowledge exchange between researchers in Sweden and researchers in low income countries and lower middle income countries. The research support is funded by Sweden's international development aid, whose goal is to create prerequisites for better living conditions for people living in poverty and repression, and shall be used according to OECD's definition of development aid.

At the turn of the millennium, the world was facing strong global growth, particularly in low income countries, driven by China. Low income countries – with the exception of those that had been poorly governed or had suffered war and conflict – have had good opportunities to improve living conditions for hundreds of millions of humans. Today, the situation is entirely different. We are seeing decreasing world trade, and falling growth rates in China, crises within trade policies, more authoritarian governance in many countries, including large and powerful ones, and a raised level of military conflict. At the same time as knowledge development has enabled great advances within global health, education, working life, automation of industrial activities, climate, energy, agriculture and in the environmental area, the needs but also the opportunities to develop global research that contributes knowledge in these areas are perhaps greater than ever before. Development research contributes to identifying and explaining changing prerequisites for development and human living conditions, and it contributes with solutions and with describing consequences and implications of measures undertaken. Development research has a very important role to play in generating and disseminating background information for knowledge-based global development.

It is clear that the world is facing a number of challenges which, to ensure realistic and acceptable solutions can be reached, require global participation and collaboration within a number of areas. The list is long, but some examples relate to the spread of anti-microbial resistance, climate changes, migration, inequality and lack of gender equality, the new digital economy, as well as global trade and peace-keeping. We need both new knowledge and use of existing knowledge to handle these challenges, and in both cases global scientific collaboration are needed. The 2030 Agenda sets clear goals for world development. The agenda emphasises that global research is needed, with participation from the whole world, and with development of knowledge in order to achieve the global goals. This also includes

the production of research-based documentation for measuring goal fulfilment and identifying synergies and conflicts between the goals. At the same time, there is increased interest in global development issues among researchers, which contributes to a great potential for research opportunities and research interests to harvest.

Unfortunately, there are obstacles to free flow and exchange of ideas and initiatives between researchers. Many researchers from low income countries do not have access to the global scientific arena, even if this varies between subject areas and contexts. They often do not have the same opportunities to access results published by other researchers, or to access common scientific networks and channels for presenting their own results. Collaborations with the potential to link up the most up-to-date technology and locally-oriented knowledge can arise, with end results that are useable and adapted to different types of societies. However, it is important that this type of collaboration between researchers is free from political influences. The work must be driven by the researchers themselves. Likeminded researchers with similar interests must find each other, and with many-faceted expertise that ranges across traditional scientific disciplines, techniques, analysis tools and background knowledge can bridge geographical borders and be linked together into something new and very useful.

The Committee for Development Research at the Swedish Research Council has formulated a vision for development research in a ten-year perspective. **The vision is that knowledge is developed that in various ways can make a clear contribution to achieving the global development goals, that research is developed that takes into accounts circumstances throughout the world, including low and lower middle income countries, and that participating researchers from all around the world contribute to this development. To make this possible, we must create an ever more equal situation in the long term between researchers in Sweden and collaborators in low and lower middle income countries, when the goals and uses of research can more clearly benefit all. The link between different international collaborations is stimulated by providing opportunities for flexible solutions for researcher exchanges, which contributes to promoting interdisciplinary research collaboration. Knowledge and information about development research shall reach out better to the research community, which contributes to development research becoming a well-known and attractive subject area that interacts well with other research funding within the Swedish Research Council and the rest of the Swedish research landscape. Swedish development research should be an international driving force.**

Based on this vision, we recommend a number of measures to further develop the support and make use of the potential of development research. These recommendations are summarised in the box below. To underpin the recommendations, this is followed by a description of the focus of the research and research support over the five years during which the Swedish Research Council and the Committee for Development Research have been responsible for development research. After a description of the area's international impact and challenges for the area over a five to ten year horizon, we also describe the basis for each of the recommendations.

Summary of the recommendations for the area as a whole

- Utilise the potential within development research
 - Improved career paths for researchers in all fields
 - Review the conditions for research support. Support for development research constitutes a supplement to, and needs to interact with, other research funding. Therefore it is important that the conditions correspond to those of other research funding
 - Increased appropriation, which would enable calls for grants to establish multi-sectoral research environments and graduate schools at the leading edge of research in terms of international development issues, through calls for funds within the Swedish Research Council's grant form "research environment and research collaboration support".
 - Support developed to attract junior researchers to the area
 - Review the relevance criteria for development research, and return to focusing support on both low income and low middle income countries.
 - The Committee's interdisciplinary competence should be utilised

- Measures needed to improve the impact of research in society
 - Intensify the interaction between higher education institutions (HEIs) to increase knowledge about and interest in development research.
 - New innovative formats for communication/dissemination of results for development research are needed to reach out to new stakeholders.
 - A continuous dialogue about development research is needed with the Ministry of Education and Research, and the Ministry for Foreign Affairs.

- Undirected project grants may be supplemented with specific thematic initiatives
 - Such specific initiatives could advantageously include calls together with other councils and committees within the Swedish Research Council, with the Swedish International Development Cooperation Agency and with other research councils. In some cases, initiatives already exist, but they can be supplemented – for example, some of the national research programmes should be expanded and become global.
 - Proposals for new specific initiatives. Urgent themes for specific initiatives listed in the report are:
 - Consequences of climate and environmental changes; World demographic development and its consequences; Digitisation and digital competence; Measures for global gender equality; Water-related challenges; Artificial intelligence and its impact on humans, nature and society; Energy; Inequality within and between societies; and Development research relating to antimicrobial resistance.

Development research: scope, quality, focus and contemporary environment

The recommended measures presented in the introduction to the report provide opportunities to better utilise the potential within development research and to increase the impact of the research in society. The starting point for the recommendations is the research and the collaboration that is currently being conducted, and the prerequisites that currently apply for the research and the research support. A review of the research funded to date, the applications received and analysis of the contemporary environment indicate great opportunities to further strengthen development research using relatively limited inputs. The review below shows research of high quality and with a clear relevance for the goals for Sweden's development cooperation and for global development goals. At the same time, the review indicates that the prerequisites for both research and research support today obstruct the opportunities to utilise the entire potential of development research. The recommendations above also indicate important measures for strengthening research, the societal impact of the research results and the integration of development research into a broader global research field.

Development research awarded support from the Swedish Research Council

Funds for development research have been made available through two types of grant forms, namely project grants and network grants. Project grants allow researchers to freely define research projects lasting up to four years, of relevance to the fight against poverty and for sustainable development in low income countries. Network grants (Swedish Research Links) support the development of networks for long-term joint research between Swedish researchers and researchers from low income countries and lower middle income countries. In addition to these undirected grants, project grants within the theme of "Sustainability and resilience" have been implemented in collaboration with Sida (the Swedish International Development Cooperation Agency), Formas (the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning) and Forte (the Swedish Research Council for Health, Working Life and Welfare). Further details on these will be given below.

Since the Committee for Development Research was formed in conjunction with the transfer of responsibility for development research to the Swedish Research Council, 197 project grants and 165 network grants have been awarded. Development research spans the entire scientific field, is often interdisciplinary, and includes both basic research and more directly policy-relevant and applied research. Thema-

tically, the research displays a great range. A review of the research and the research collaboration funded, as well as a few examples of research projects, are shown in Appendix 1.

Applications within development research are currently reviewed within three subject areas: humanities and social sciences, global health, and natural, engineering and environmental sciences. A review of the subject stated as the first code in applications shows a great subject spread and a relatively even distribution of grants between these subject areas (see Table 2, Appendix 1). However, it is noticeable that the number of projects within humanities is very small. Looking forward, special efforts should be made to monitor the reasons why few applications are awarded and received from researchers in the humanities, and possible measures should be considered to increase the diversity in the research that is awarded funds.

Projects and networks have involved 81 countries. The most common collaboration countries for project grants are countries in East Africa, such as Kenya, Tanzania, Uganda and Ethiopia in the order given, followed by Bangladesh, Mozambique and India. For network grants, the most common country is India, followed by Bangladesh, Brazil (up to and including 2014), Tanzania and Kenya (see also Table 1 in Appendix 1).

The Committee continuously monitors the outcomes of grant decisions in relation to gender equality. Over time, the gender distribution in terms of approval rate is relatively equal. Gender equality aspects are also taken into account during every stage of the work within development research, including the review process, such as when appointing review panel members, during training ahead of and during the review panel meetings, and in reporting. As from 2018, review panel members will also be asked to weigh in the degree to which gender aspects are included in the research questions themselves where appropriate.

The quality of research

It would be desirable to measure how the research supported via development research compares in terms of quality with development research internationally, and with other subject areas nationally. There are, however, limited data available, as development research is not a searchable term in databases, and as the data sets available within development research when comparing subject areas (such as social sciences within development research compared to other social sciences) are small. Looking ahead, it would be desirable to conduct follow-up and evaluations that more directly show the results of research projects in the form of publications, as well as their scientific and societal impact. It has not been possible to conduct any such review within the framework for this overview, however. During spring 2018, a more limited analysis was carried out of the success rate for the researchers who applied for funds within development research when applying within other subject areas at the Swedish Research Council. Of those who applied for project grants within development research during 2013–2017, 58% have also applied for grants

from the Swedish Research Council within at least one other subject area during the same period. The results show that applications from these researchers do not diverge in terms of grading or approval rate from those made by other applicants. The results indicate that development research holds its own in terms of quality compared to research funded in other ways.

The review also shows that development research complements research funding within other areas excellently, and that the support in this way contributes to internationalising research and enables research that clearly also includes relevance for and collaboration with low and lower middle income countries. Development research is not a delimited research field, but offers opportunities for researchers within all scientific fields to conduct research globally. Appendix 2 reports on the analysis of applications within development research and other fields.

The organisation, scope and focus of the research funding

The expressed ambition of the transfer of development research support to the Swedish Research Council in 2013 was both to ensure that the quality of review and assessment was on par with other research funding from national government research councils, and also to integrate development research more clearly in the broader research landscape, and thereby also attract new researchers to the area and encourage new research constellations. In conjunction with the transfer, the Committee for Development Research was formed; a committee that like the other committees and councils within the Swedish Research Council consists of researchers active within the field, and with responsibility for the design, review and quality of research funding within the area. The Committee for Development Research is composed through nominations from scientific councils within the Swedish Research Council, as well as from Sida, Formas and Forte.

In 2013, when the entire appropriation was transferred to the Swedish Research Council, the grant framework for development research was 170 million SEK annually (including a maximum of 4 million SEK for administration). The appropriation was later cut, but for 2018 it was once again 170 million SEK. Despite an increase in the overall budget for research development aid, the appropriation for development research has thus not been increased. The grant terms and conditions were changed slightly at the transfer to the Swedish Research Council. The most important factor was perhaps that Sida's "U-forsk" support, which largely corresponded to the project grants awarded by the Swedish Research Council today, only provided funds for Swedish researchers, whereas the rules for project grants within development research today enable international participation. The requirement today for project grants is that the administrating organisation must be a Swedish HEI, but researchers from other countries often participate in the collaborations. One experience is also that, through the participation of local researchers in research relating to low and lower middle income countries, the research in general turns out better, and also contributes to strengthening the research capacity in low income countries. During the first few years, the proportion of funds awarded to project grants and network grants respectively was determined in the appropriation document. Since 2017, the appropriation document has stated that the support shall cover support for research and research collaboration, but the proportion allocated between the two support forms is not regulated. In the 2018 call, around 80% of the funds were

allocated to project grants and 20% to network grants.

The Swedish Research Council's Committee for Development Research also has an important role as a bridge between development aid and global research. In addition to open calls for grant proposals to projects and networks, the committee has conducted a separate, thematic call for proposals for project grants relating to climate change, sustainability and resilience in low and lower middle income countries, in collaboration with other public agencies. A first joint call was issued in 2016 together with Sida and Formas. The same agencies, plus Forte, together issued a second call in 2018, with the same focus. Fundamentally, the collaboration is justified by the joint goals within the 2030 Agenda. In harmony with the Government's policy for global development, these express an ever strong view that the challenges are global and require joint efforts. It is, perhaps, particularly important to emphasise the global dimension within the climate and environment areas. The projects funded within the two calls require participation by researchers from low or lower middle income countries, and participation by junior researchers at Swedish HEIs. The calls attracted many applications of high quality, and there is plenty of room to support further research of good quality and relevance within this field.

The committee has also worked to broaden the interest in development research among Swedish researchers, to develop the dialogue across subject and HEI borders within the field, and to disseminate the research results and thereby increase their policy relevance. An important part of this work are the conferences within development research held every two years in collaboration between the Committee for Development Research at the Swedish Research Council, Sida, and a host HEI. The conference is called "Development Research Conference", DevRes. The purpose of the conferences is to create an interdisciplinary forum for researchers working with development issues, and to offer a platform for dialogue between researchers, practitioners and decisionmakers within development issues. Great ambition has been invested in the conferences attracting both Swedish and international researchers. International participants have come from both Europe and from low and lower middle income countries. The host HEI for the 2016 conference was Stockholm University, and the host for the 2018 conference was the University of Gothenburg.

The Committee for Development Research is constantly seeing to further develop the collaboration and dialogue with other public agencies and international actors, and within the Swedish Research Council. The Committee for Development Research maintains a continuous dialogue with Sida, to promote synergies and complementarity in relation to research and research collaboration in the development cooperation.

The Committee is currently working on developing international collaboration within the framework for the 2030 Agenda, with actors such as UK Research and Innovation, the International Science and Innovation Directorate (ISID), the Department for Business, Energy and Innovation Strategy (BEIS), as well as other European research funding bodies within the area.

Researchers' views on the grants and prerequisites of development research

A survey was conducted in 2018, where all grant recipients of development research funds from the Swedish Research Council were asked about the most important scientific advances and challenges in relation to their research, the greatest challenges to conducting development research, and the changes that would be needed to facilitate research.

Very varied answers were received to the question about the most important advances and scientific challenges within research, which illustrates the range covered by development research. It is worth noting that 35% of the respondents highlighted the importance of new methods, techniques (such as bioinformatics and data management), and materials for the development of research over the last few years. In terms of challenges, the most common answers related to funding issues (64%), such as grant amounts, opportunities to apply for funds and how funds could be used. One quarter of the respondents highlighted practical difficulties of working in and with low and lower middle income countries. When it came to desired changes, various changes to the terms and conditions of the grants were proposed by many respondents, as were new grant forms and improved career paths.

The results from the survey, summarised in graphs in Appendix 3, will be used for the continuing work of the committee.

The impact of research within the area in international comparison

One prerequisite for sustainable global development is a stable and growing knowledge basis, not least to enable the goals and objectives within the 2030 Agenda to be achieved. Research makes it possible to know how different development goals can be achieved, and how to measure goal fulfilment, and also lead to new knowledge and innovation. Research is also needed to find synergies and conflict areas between the global goals. A large part of development research aims to generate results of immediate benefit for Sweden's development cooperation, while other research projects develop knowledge that may contribute in the longer term.

Apart from the traditional methods for measuring the impact of research – using bibliometrics, patents, etc. – it is interesting to be able to follow up how development research supported by the Swedish Research Council has impacted on or contributed to factors such as policy decisions, gender equality, human rights, improved health, environmental improvements, general knowledge accumulation in society, infrastructure, higher education within development issues, and also career paths outside academia for junior researchers.

The challenges to conducting follow-up of these types of impact are, of course, very great, for example in terms of the time aspect. Many research projects can generate results that are directly applicable, or that can even have an impact during their implementation, and their impact is therefore easier to follow up. The noticeable impact of research, in particular basic research, does however often take considerably longer than the research projects themselves do, and may take decades. The impact of a research project is often also indirect, and it is difficult to link societal changes to a specific research project, or to a specific funding instrument. This becomes clear when researchers are asked how their research projects have succeeded in terms of different types of impact. Some outcomes, such as publications, doctoral students, etc. are relatively easy to follow up, while long-term knowledge accumulation, impact on the political discourse and decision-making, use of research results for health, etc. are as yet more difficult to measure and follow up. Some proposals for measures are to introduce regular documentation of what specific activities the research projects have conducted to strengthen different types of impact through the projects' scientific reporting (finding "pathways to impact"), and to conduct a targeted evaluation with the help of peer review within a few years, when longer time has elapsed since the projects were completed.

There is therefore currently a lack of in-depth and detailed information about the societal impact of Swedish development research as a whole. The difficulty of assessing the societal impact of the research is, of course, not unique for the development research field, and requires continued development work across the entire scientific

field, with consideration paid to the differences that exist between different research areas. As an attempt to at least capture superficially the societal impact of the research, the 2018 survey asked a question about the relevance of the research conducted for the global development goals. The results show that the grants awarded within development research 2013–2017 on the whole are relevant to all the 17 Sustainable Development Goals of the 2030 Agenda¹ (Figure 1). Many projects were reported as being relevant to several goals. Here it should be remembered that it is just as important that research can and should contribute to the fulfilment of individual goals as that research is also needed into synergies and conflict areas between the global goals. It also emerged from the survey answers that a number of projects had impacted on development in a number of areas, such as health, environmental issues and food production, in the countries in question. A new feature of the calls issued in 2018 was that applicants had to describe the relevance to the global development goals in their applications. Applications received during 2018 show the same pattern as emerged from the survey.

There is a need to intensify the interaction between HEIs to increase knowledge about and interest in development research. New innovative formats for communication/dissemination of results for development research are needed to reach out to new stakeholders. Continuous dialogue about development research is also needed with the Ministry of Education and Research and the Ministry for Foreign Affairs, to continuously check that the conditions for research continue to promote research of the highest quality, that the research is integrated in the broader research field, and to follow the development of research results and their impact in society.

The survey answers, the follow-up of the projects funded, results from the research conferences and the committee’s own development work provide a clear message that development research and the committee’s work can be utilised to a much higher degree than is currently the case to handle topical issues for the Swedish Research Council and contribute to the Research Council’s task and development.

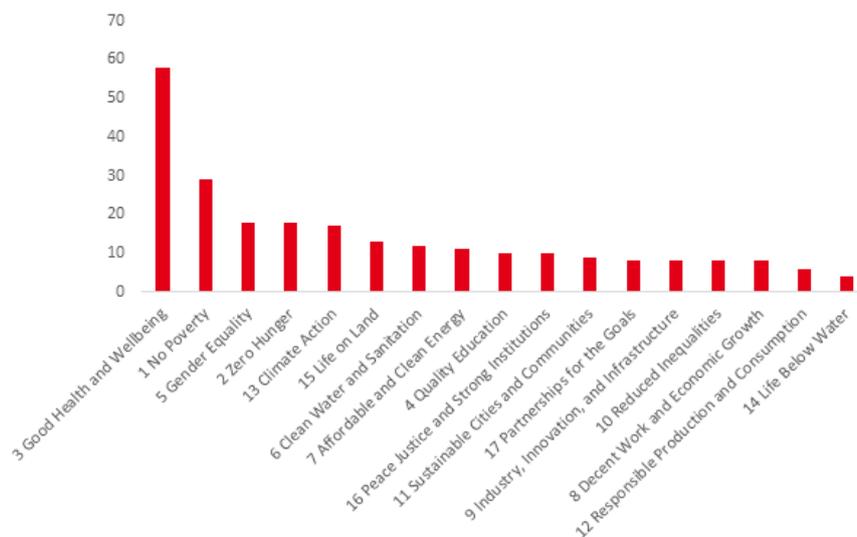


Figure 1. Projects funded within development research (2013–2017) in relation to the Sustainable Development Goals (2030 Agenda), based on a survey among main applicants during spring 2018.

It is clear that the research support via the development research appropriation is of relevance to both low and lower middle income countries and globally. The research funding should therefore continue to be allocated according to the relevance criteria set by Sweden's international development aid policy and OECD's definition of development aid. The aims of the research correspond well to the insight that characterises the 2030 Agenda – to reach global goals, global collaboration for globally produced knowledge is needed. The committee sees great opportunities to utilise the potential of development research even better for such global knowledge development. The fact that such a large proportion of research is stated to be of relevance for the global development goals shows that researchers clearly are very competent at identifying topical issues where research is needed. This important researcher competence is best utilised through open calls that allow room to ask new and groundbreaking research questions. The committee also recommends that the greater part of the support for development research is not delimited thematically, but is made open to all areas. As a complement to this undirected research support, the committee recommends limited initiatives in some topical areas. Such limited thematic initiatives can gather and strengthen research and the ability to make research available within urgent areas.

Future challenges for the area in a 5-10 year perspective

The Committee for Development Research at the Swedish Research Council has formulated a vision for development research in a ten-year perspective. The vision is that knowledge is developed that in various ways can make a clear contribution to achieving the global development goals, that research is developed that takes into account circumstances throughout the world, including low and lower middle income countries, and that participating researchers from all around the world contribute to this development. To make this possible, we must create an ever more equal situation in the long term between researchers in Sweden and collaborators in low and lower middle income countries, when the goals and uses of research can more clearly benefit all. The link between different international collaborations is stimulated by providing opportunities for flexible solutions for researcher exchanges, which contributes to promoting interdisciplinary research collaboration. Knowledge and information about development research shall reach out better to the research community, which contributes to development research becoming a well-known and attractive subject area that interacts well with other research funding within the Swedish Research Council and the rest of the Swedish research landscape. Swedish development research is an international driving force.

A desirable future scenario is for Sweden, via development research, to have increased the number of international collaborations of high scientific quality, so that long-term capacity build-up with exchange of knowledge and experience is promoted, and for these collaborations to constitute international nodes that attract junior researchers who regard the nodes as attractive research environments, with career paths to deepen and broaden development research. Development research strives to achieve mutual learning and for data to be generated mutually. As the situation is becoming more diversified, both within and between low and middle income countries, there is reason to assume that development research will become increasingly complex within the next 5–10 year period.

As an international research actor, Sweden has an important role in driving and making visible Swedish development research in an international perspective. In this context, it should be noted that advanced research, research competence and research collaboration with and in low and lower middle income countries is in itself an important part of societal development. The support for research and research collaboration of relevance to low and lower middle income countries also in itself entails capacity building of research competence in these countries, as well as in Sweden. Here, the importance of continued close collaboration with Sida should be emphasised. The collaboration with Sida is close and intensive, and supported by the Government's *Strategy for research collaboration and research within the*

development collaboration 2015–2021. The strategy formulates four focus areas, aimed at contributing to strengthened research of high quality and relevance to the fight against poverty and for sustainable development. Sida's activities within the framework of the strategy is expected to contribute to results focusing on capacity-building for research, primarily in low income countries and regions; global, regional and national research of relevance to low income countries and regions; and promotion of research that via innovation can contribute to the fight against poverty and for sustainable development. The Swedish Research Council's activities within the framework of the strategy are expected to contribute to results focusing on Swedish research of relevance to the fight against poverty and for sustainable development in low income countries. The strategy also emphasises the connection between the four focus areas and the importance of close interaction between them.

So what are the success factors for development research? The utterly fundamental prerequisite is that the research is of high quality, and that the calls attract good researchers and good research projects. The development to date indicates great width and high quality in the applications received and projects awarded funds. To ensure development research continues to be of relevance and high quality, the Swedish resource and knowledge base within development research needs to be constantly maintained and developed in terms of width and quality. This is achieved through attractive research support, through increased engagement within different scientific disciplines and research environments, and through developing or stimulating collaboration within and between already existing networks, nationally and internationally. Such a mobilisation and reinforcement of development researchers requires active interactions with HEIs in order to increase knowledge of and interest in development research, strengthened collaboration with different research funding bodies in Sweden, such as Formas, Forte, Vinnova, Sida and other public agencies, and the creation of opportunities for co-funding of calls, such as thematic calls. Furthermore, collaboration with funding bodies for development research in other countries (including low income countries) needs to be strengthened. One way of achieving this is to work for wider international collaboration between research councils and development aid actors, including non-governmental organisations.

Many current societal challenges require interdisciplinary research, and this can advantageously be encouraged within development research, both for individual projects and in terms of research environment support. The percentage of interdisciplinary research efforts is expected to increase over the coming years. To ensure interdisciplinary research is not disadvantaged and that the potential of research is utilised fully, it is important to continuously monitor that interdisciplinary applications receive a fair assessment, as they cover several subjects. This may also demand certain organisational changes in terms of the handling of interdisciplinary applications. At the same time, single field subject research is also necessary, and interdisciplinary solutions can be achieved by combining research results from different areas at policy level.

Development research is funded via the development aid budget, and the demand for directly applicable results can be expected to increase in the future, with increased expectations of value-for-money also in the shorter term. It is, however, important to emphasise and ensure that development research continues to be long-term, researcher-driven and open to basic research. Of course, research does not just contribute to solutions to identified questions and problems. An important contribution, not least from basic and researcher-initiated research, is to formulate

the problems and generate new questions. At the same time as the societal impact of development research needs to be followed up and communicated, the committee therefore sees a future need to protect and highlight the importance of the basic research of relevance for and in low and lower middle income countries that is enabled via the funding of development research.

A further three major challenges that follow from developments internationally, within research, and within society at large need to be further commented on here. There is today a development towards more authoritarian states. In many countries, the freedom and independence of research is threatened or severely limited, and the independence and freedom of research must therefore be protected. At the same time, actively supported global research collaboration may contribute to maintaining strong research, and counteract limitations on the independence and freedom of research. A second group of challenges that are particularly topical for development research relate to ethics and security. While it is important to monitor the security of researchers, not least in countries where the freedom of research is threatened, the research ethics discourse must take into account the globalisation of research. The same ethical approach that applies for Swedish research must characterise global research. The third challenge is to fully utilise the opportunities that have arisen for research as a result of low and lower middle income countries having become digitised, with mobile phones and access to internet. Through measures to make research accessible to users in the countries studied, development researchers can greatly increase the impact of relevant research. At the same time – and particularly from a development research perspective – it is important to ensure that new models for making research accessible do not lead to new obstacles being raised, for example through new economic models for open access publication, for researchers in low and lower middle income countries. The current development towards open science also raises further questions relating to the integrity of research. Openness must not be introduced at the cost of undermining academic freedom.

Future challenges for the area in a 5-10 year perspective

The research overview has reviewed the type of research supported by the Swedish Research Council's development research appropriation. The relevance of the research to the global development goals and for the goals of the development collaboration has been emphasised, as have the challenges and opportunities for the research field over a 5–10 year period. The overview leads to a number of recommendations for how the potential of the research can be utilised further, and for how the impact of the research can be further supported.

Utilise the potential within development research

It is clear that a number of the challenges facing the world require global knowledge-based collaboration, supported by global scientific collaboration. To ensure real global participation in research, and to ensure the research results are as relevant, useable and of as high a quality as possible, targeted support is needed for research in countries where researchers often do not have access to the international research arena to the same extent as researchers in high income countries do. In development research, great emphasis is placed on international collaboration, in particular between researchers in high income countries and researchers in low and lower middle income countries, for the purpose of strengthening both the quality and the relevance of the research, which also builds up research capacity in both these countries and in Sweden. Development research therefore has a particularly important role to play in generating and disseminating background information for knowledge-based development through international collaboration. This becomes even more relevant through the 2030 Agenda, with its emphasis on global approaches.

The importance of development research for the internationalisation of Swedish research, focusing on collaboration with low and lower middle income countries, is further emphasised in the recently presented interim report from the internationalisation inquiry (SOU 2018:3). This is also facilitated by researchers being able to apply for funds simultaneously from development research and other research fields within the Swedish Research Council.

The Committee for Development Research is also working on further developing the support for development research via a clearer link to the Sustainable Development Goals, and on further developing the collaboration with research funding bodies and other actors of importance for the research development cooperation, both nationally and internationally (including joint thematic calls). The platform that is now being established with international actors could also be used by other

areas within the Swedish Research Council. Interest in development research in the Swedish research community should also be increased, for example by clarifying the scope of development research, and thereby making it easier for researchers and other actors to identify opportunities within the area. At the Swedish Research Council, the integration of development research in the broader research landscape needs to continue, with maintained important contacts with actors such as the Ministry for Foreign Affairs and Sida.

To strengthen the position of Swedish development research and increase the engagement to meet the challenges within the 2030 Agenda, the committee also wishes to establish multi-sectoral research environments and graduate schools at the leading edge of research in terms of international development issues, through calls for funds within the Swedish Research Council's grant form "research environment and research collaboration support".

There is also a need to improve the prerequisites for utilising the research results, through collaboration between both Swedish and international actors, and to follow up the societal impact of development research in a structured way, which is an increasingly important issue in Sweden and among research funding bodies internationally, not least in conjunction with the 2030 Agenda.

Although the Swedish Research Council's appropriation for development research has been reinstated compared to the last few years, it is still only at the 2013 level. At the same time, the development aid budget has increased, including the portion set aside for research capacity-building and for international research within the framework of the same.

To create the opportunity to be a significant actor in desired collaborations and initiatives, including developing the potential to contribute to the internationalisation of Swedish research, and to give opportunities for more researchers to contribute to the field of development research, there is a need for an increased appropriation.

Return to focusing support on both low and lower middle income countries

Three years ago, the terms and conditions for project grants were changed in the appropriations document, so that project grants shall apply for research of relevance only for low income countries and no longer for lower middle income countries. The committee recommends that this limitation is reviewed. The reasons for this are several.

Poverty is not limited to low income countries, relevance does not follow national borders, and research often crosses borders. Increased opportunities for collaboration with researchers in a broader group of countries would promote the quality of Swedish research. There is also great interest among Swedish researchers to collaborate with researchers in lower middle income countries, and the researchers in these countries also often encounter challenges in terms of funding and access to global research collaboration. In particular in those cases where Sida has recently phased out collaboration with the countries, the calls issued by the Committee for Development Research can be seen as one of several important bridges for ensuring the investment made via development aid can be utilised, and for continuing to build on established collaborations, channels, and the knowledge and experience

that has been achieved, now that these lower middle income countries are moving towards becoming ever stronger research nations.

In the interim report from the inquiry into increased internationalisation of higher education institutions (SOU 2018:3), the role played by the Committee for Development Research is particularly recognised as a well-established link to collaboration with these countries, and as a possible bridge when the research aid to these countries is discontinued. The report also proposes a widened such mandate for the Committee for Development Research, and supplementary funding for such research collaboration.

The network grant is aimed at initiating collaboration and knowledge exchange between researchers in Sweden and researchers in both low and lower middle income countries. The committee has worked to ensure the network grant is more clearly designed to support the start-up of new research collaborations that may lead to joint research projects and longer research collaborations. A return to the same geographic prerequisites for project grants and network grants would facilitate matters for researchers, and also improve the synergies between the grant forms. At the same time, it is important that the committee continues to monitor that the research supported continues to be relevant to both low and lower middle income countries.

Support developed to attract junior researchers to the area

The internationalisation inquiry (SOU 2018:3) points out that development research funds form an important basis for the internationalisation and research focus of junior researchers. There is, of course, a risk that if the grants are too small and too short-term, it is primarily already established researchers in the area that see any added value from this research funding.

In reports including the research overview produced ahead of the last Government research bill, the Committee for Development Research has identified a clear need for more junior researchers to become attracted to the development research field. A request from researchers for improved career paths within development research also emerged from the 2018 survey. The committee is planning to set aside funds for postdocs as from 2019. More measures are needed to ensure development research is increasingly seen as an interesting path for, and thereby increase the recruitment of, junior researchers to the area.

The Committee's interdisciplinary competence should be utilised

Development research is interdisciplinary, it spans the entire spectrum from basic research to applied and direct policy relevance research, and it is global. As development research has for several years been highlighting interdisciplinarity, for example by encouraging research proposals covering several sectors, solid knowledge about interdisciplinarity has been built up within development research. This knowledge could be used more actively by the Swedish Research Council, for example by using the committee for the handling and assessment of calls such as that for interdisciplinary research environments.

Recommended thematic initiatives

The support to development research is designed to give room for researcher-initiated research and researcher-initiated collaborations. Undirected research support is fundamental for ensuring that research can contribute with new and groundbreaking knowledge. The committee also recommends that the greater part of the support for development research is not delimited thematically, but is made open to all areas. As a complement to this undirected research support, the committee recommends limited initiatives in some topical areas. Such thematic initiatives can gather and strengthen research and the ability to make research available within urgent areas. As previously mentioned, such specific initiatives could advantageously include calls issued together with other councils and committees within the Swedish Research Council, with Sida and with other research councils. In some cases, initiatives already exist that can be supplemented (such as antimicrobial resistance); for example, some of the national research programmes should be expanded and become global (such as the programme relating to migration and integration). Already ongoing thematic initiatives within other areas could also advantageously be developed and expanded within the framework for the international collaborations that have now actively started with research councils, particularly within Europe.

The committee also proposes new thematic initiatives where it appears particularly important for research to be developed that is relevant for and in interaction with low and lower middle income countries. The list below should be seen as an example of urgent themes for specific initiatives. The list could have been made longer and include other themes of great importance for poverty and sustainable development, and of relevance to low and lower middle income countries. For reasons of space, the number of themes has been limited, however. Special thematic initiatives, where knowledge that is built up in and in close connection to low and lower middle income countries clearly enriches knowledge globally are of great importance. In addition to the themes listed below, the committee would like to highlight the following areas, where in particular knowledge about and for low and lower middle income countries is of central importance for building global knowledge and for global development: Artificial intelligence and its impact on humans, nature and society; Energy; Inequality within and between societies; and Development research relating to antimicrobial resistance. Other urgent themes for specific initiatives are described in brief below.

The consequences of climate and environmental changes

The climate issue is fateful for the entirety of modern civilisation. Climate and environmental changes impact seriously on populations in low income countries, and also have consequences for nearly all aspects of development highlighted in the global development goals. The consequences are serious when extreme weather conditions change, and the loss of biodiversity and other threats against societies, humans and eco systems increase. Continued targeted research into resilience and sustainability that contributes to the understanding of these risks and effects and how they can be managed is therefore of the greatest importance. The area is multidisciplinary, and concerns understanding of and management of consequences in complex systems. It is also important that research into the area is conducted in low and lower middle income countries, by or in collaboration with researchers in low and lower middle income countries, in order to identify relevant problem areas and to reinforce the countries' capacity to use knowledge to manage the challenges.

The world's demographic development and its consequences

Population development in the world, both within and between continents, is a major challenge. The world's population has grown by around one billion over the last 12 years, and amounted to around 7.6 billion in 2017. According to United Nations (UN) calculations – albeit associated with major uncertainty factors – a further billion human beings will be added by 2030. A large proportion of the population growth will consist of young adults, while the number of children in the world is expected to remain mainly unchanged; something that is often called the “demographic transition”. The population growth will occur primarily in low income countries, with Africa being the continent that is expected to grow the fastest. The concentration of the expected population growth to low income countries will entail major challenges to achieve the 2030 Agenda, relating to areas such as the fight against poverty, eradication of hunger, provision and development of educational and healthcare systems, issues of conflict, equality and democracy, and also issues of climate, agriculture and energy. A targeted focus on research into the world's demographic development and its consequences can better clarify and explain the development than can be done with today's knowledge, and also point out possible ways of managing the situation and its consequences.

Digitisation and digital competence

The spread of digital media throughout the world is growing exponentially. What are the consequences of this development, how is it driven and with what consequences? In what way can digital technology lead to more inclusive societies, locally and globally? What is the importance of digital media for democracy, health and equality? How can developed competence for and about digitisation be supported? This is about developing tools that ensure the people of the world of all generations, countries and social groups can utilise digital opportunities for sustainable societal development. We need research into artificial intelligence and robotisation, and how they impact on the countries that have invested in labour-intensive industries with low wages. Is there now a risk of investments drying up, and that investments will primarily be made in the most developed countries because the wage issue is no longer as important? If so, what does this mean for the working class populations of low and lower middle income countries? How do social media impact on the conflict level in countries where armed conflict is taking place? Do they strengthen the revolts, or is it mainly governments that are able to use digitisation and mobile telephony to monitor the population and suppress opposition and revolt? How do the large Chinese and US IT companies contribute to the economic, social and political development in low and lower middle income countries? How has the introduction of mobile telephony and new social media impacted on the populations' ways of obtaining information and spreading their views?

Water-related challenges

Water is a basic prerequisite for all living organisms on Earth, and therefore also a prerequisite for sustainable development. In 2017, WHO and UNICEF estimated that 844 million human beings did not have access to clean water. Raw waste from industry and households leads to water pollution, which creates an unhealthy environment that particularly affects people who live in poverty. As a result of global warming, access to water is expected to become even more limited in large parts

around the world. We are facing many water-related challenges, linked to factors such as water resources, health and pollution, as well as water as a strategic and economic asset. Marine resources must be used in a sustainable way. Well thought-out initiatives and infrastructure improvements to ensure sustainable use of the oceans and coastal areas shall be based on modern technology, linked to locally-established knowledge about resource allocation and needs. A specific research programme for water-related challenges may contribute with knowledge for the 2030 Agenda's Sustainable Development Goal 6: Clean Water and Sanitation, and Goal 14: Life Below Water.

Measures for global gender equality

Although steps have been taken towards equivalent basic school education for girls and boys and reduced maternal mortality, girls and women still encounter discrimination and violence on a large scale. 750 million women and children around the world have been married off before the age of 18. More than 200 million women and girls have suffered genital mutilation. According to the World Health Organization (WHO), violence against women is a "global health problem of epidemic proportions". Global estimates published by WHO indicate that, during their lifetimes, one in three women (30%) around the world have been exposed to physical and/or sexual violence from their partner or sexual violence from someone other than their partner. In the optimistic belief that the starting point is law that can be used as a tool for preventing and addressing violence against women, such legislation has been widely introduced. Not least former conflict countries in Africa have made great advances on this front during the last decade. But we do not know much about the effects (legal, health, economic and social) of criminalising acts such as female genital mutilation, violence in the home or child marriage in developing countries. Can such legislation make a difference? What positive and any negative or unexpected consequences can it have?

The Swedish Research Council's research overview within development research describes the current position of research and makes a forecast of developments over the next five to ten years. The overview also includes scientific and research policy recommendations for inputs to promote research in Sweden within the area.

This is one of seven research overviews in total, produced during 2018. The other overviews cover the areas of humanities and social sciences, clinical therapy research, artistic research, medicine and health, natural and engineering sciences and educational sciences. The overviews form a central part of the Swedish Research Council's input into the upcoming Government Research Bill.

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