

Federal Ministry of Education and Research (BMBF)

Regulations
governing funding of projects on the topic of
“Sustainable land management in Sub-Saharan Africa:
Improving livelihoods through local research”
within the framework of the Research for Sustainability (FONA) strategy of the
BMBF

8 April 2021

1 Aim and purpose of funding

1.1 Aim and purpose of funding

Sustainable land management is of key importance for the sustainable development of the world's population. According to forecasts of the United Nations (UN), the global population will rise to approximately 9.8 billion people by 2050. The population of Africa alone is projected to grow by 1.3 billion to around 2.5 billion people. This will entail a higher demand for food which – together with climate change – will increase the pressure on natural resources.

Within the framework of these funding regulations, the German Federal Ministry of Education and Research (BMBF) is calling for research and development projects to contribute to improving living conditions through sustainable land management in Sub-Saharan Africa. Local and regional solutions are sought for the sustainable use and increase of food production on existing land not least due to anticipated changes to the natural environmental and socio-economic conditions. These solutions should be based on a more efficient use of existing resources (e.g. soil, water, biodiversity, labour, technology) and reduce soil erosion, land degradation and desertification. Resource-friendly farming system which takes account of the optimal use of available land and the use of modern technologies and services adapted to regional conditions (in particular in the context of digitalization) must be combined in such a way that synergies can be achieved for the benefit of regional value creation. At the same time, it is important to strengthen resilience against the impact of global change.

The funding measure has the following overarching objectives which can also serve as a basis for a subsequent progress review (see section 2 for information on indicators of success):

- Resource-friendly increase of efficient land management, for example through the verification of land management forms that have been developed as well as through the strengthening and utilization of digital and technology-based methods (including relevant (further) training)
- Development and provision of instruments to ensure forward-looking land-use planning and to increase the exchange of information and knowledge between the different governance levels (land users, NGOs, advisory bodies, administrative authorities, policy-makers)
- Exemplary implementation of the measures and instruments which will be developed on a participatory basis as well as transfer of findings into capacity building processes in the partner countries (multiplier effect, joint ownership of know-how)

The purpose of the funding is to develop user-friendly knowledge transfer formats and set out transparent decision-making processes to facilitate the implementation and acceptance of these measures. Governance structures can be strengthened by presenting implementation strategies and tools for fair, inclusive and transparent negotiation processes. This requires an intensive exchange between all governance levels and representatives from civil society, industry and science as well as the coordinated use of aligned policy instruments (see section 2). Specific scientific solutions should be developed and implemented on this basis in an exemplary way in cooperation with regional partners (multi-stakeholder approach).

These funding regulations are based on the BMBF's Research for Sustainability (FONA) strategy. The funding regulations contribute to achieving the UN Sustainable Development Goals (in particular the objective of land degradation neutrality by 2030). They are also embedded in the BMBF's Africa Strategy which aims to enhance the links between science and industry, enable the utilization of innovative research findings and accelerate sustainable economic development in Africa. Furthermore, the funding regulations make an active contribution towards strengthening research, education and innovation in Germany and the African partner countries involved and towards supporting the competitiveness of German and African companies. In this way, Germany is meeting its international responsibility in the fields of research, education and development to tackle global challenges.

For its part, the African Union (AU) has expressed its research policy commitments in the Science, Technology & Innovation Strategy for Africa 2024 (STISA-2024). The main innovation and research priorities identified in the strategy include the

development of agriculture and agronomy in terms of cultivation technique, seeds, soil and climate. State-of-the-art information and communication technologies are identified as a key driver for developing a science-based and innovation-led economy. The strategy is part of the African Union's Agenda 2063 adopted by the AU member states in 2013 to establish a common vision for the development of Africa in the next 50 years.

2 Object of Funding

Applicants must address the following individual topics or provide reasons for placing a particular focus (which will entail a corresponding budget redistribution):

– Action area 1: Digitalization

Further development and enhancement of technology-based methods for information-based sustainable land management (e.g. digital farming) to enable their broader application

This includes the development of advice apps for land users according to their needs and capacities as well as the further development of state-of-the-art information and communication technologies for the sustainable development and integration of the agricultural process chain (e.g. during sowing, fertilization, irrigation, harvesting, processing, storage and utilization) in order to improve the efficient use of natural resources and the preservation of biodiversity. The African partners' development of their own technology should be supported at all levels (e.g. development of software and apps or digital learning tools). Work in this field should build on previous experience and existing operational systems and must take account of the specific requirements and potential for implementation.

Development of local or regional scenarios, land use models or early warning systems based on existing data sources and modern data collection methods (e.g. drones)

Scenarios and models must be developed in close cooperation with the involved practice partners and decision-makers from agriculture, administrative authorities, advisory bodies, training institutions, commercial companies, aid organizations, etc. (see action area 2). Probable developments influenced by relevant drivers (climate change, demography, land-use change, etc.) should be demonstrated through innovative models or model combinations and the development of plausible scenarios which take into account relevant factors such as climate, water, soil fertility, different cultivation practices and crops as well as socio-economic circumstances in order to derive and evaluate options for action and development paths for sustainable land use. The development of early warning systems for minimization of risks (e.g. of imminent damage caused by droughts, floods, plant diseases/pests, etc.) can also be considered.

Development of user-friendly formats and tools for exchanging information and knowledge between researchers, land users and administrative or advisory bodies

State-of-the-art information and communication tools should be further developed for this purpose so that they enable interested participants (e.g. land users) to contribute their own knowledge (e.g. preferences for crops or crop varieties, types of soil management, market demand, etc.) and to use information and findings from observations and simulations. For example, this may include knowledge-based advice tools containing desirable scenarios, alternative options for action and potential development paths as well as information on business management and financial issues. Close cooperation with local or regional administrative and advisory bodies is required so that they can interpret the information appropriately and process it in line with the needs of land users or other decision-makers. These bodies should be enabled to take over process control and effectively counteract potential adverse developments and emerging environmental risks (e.g. degradation of ecosystems and loss of ecosystem services, excessive water consumption and water pollution in irrigated agriculture, impact of climate change).

– Action area 2: Strengthening governance through sustainable development

Operationalization and lasting consolidation of tools for the planning and evaluation of measures based on forecasts and scenarios (e.g. in the form of user-friendly geographic information systems, innovative networking and communication platforms or combination with existing operational services and tools).

The developed options (e.g. technologies, scenarios and models, see action area 1) for sustainable land management (including discussion of advantages and disadvantages, trade-offs) should be translated into generally understandable formats (e.g. recommendations, options for action, policy briefs, guidelines). On this basis, specific implementation strategies and key players should be defined in cooperation with the involved practice partners and decision-makers from agriculture, politics and administration, advisory bodies, training institutions, commercial companies, aid organizations, etc. The aim must be to quickly implement the developed instruments and measures (e.g. with regard to agricultural techniques, drought risks, farming methods that conserve ecosystems, instruments for the planning and dissemination of information and for knowledge transfer, etc.) and to contribute to the lasting consolidation of the projects after the project period. In this context, established national measures and structures should be used and strengthened in a meaningful way (e.g. from WASCAL – West African Science Service Centre on Climate Change and Adapted Land Use [www.wascal.org] and SASSCAL – Southern African Science Service Centre for Climate Change and Adaptive Land Management [www.sasscal.org]).

Development of solutions to reconcile the existence of conflicting interests.

Alternative visions for the future developed on a participatory basis (e.g. with regard to land-use rights or types of land-use such as pastoral farming vs. crop farming) will provide the basis for the development of cross-sectoral solutions, measures

and instruments (e.g. creative facilitation techniques, incentive systems) for integrated land management which can accelerate the sustainable development of the rural areas in question (see action area 1). Existing strategies of the respective countries/regions should be considered in this context. In particular, the needs of indigenous and disadvantaged population groups in the region (e.g. women) must be taken into account.

Strengthening of local and regional market participants as a key for sustainable regional development

The development and strengthening of sustainable economic principles (e.g. sustainable resource management, product diversification, improved regional value creation, consumer protection) are regarded as an opportunity for the future. One approach is to increase the attractiveness of regionally produced agricultural products using new technologies and services as well as marketing strategies. For example, this could include efforts to improve and control the quality of the goods and services offered (e.g. using recognized certification instruments). Moreover, instruments can be developed which serve to enable the local/regional market participants to improve the marketing of their products, thus increasing local value creation. This includes efforts to identify and overcome infrastructure bottlenecks, e.g. in the fields of logistics, transport, digitalization tools, communication/information, and to facilitate access to financial resources and financial services.

Funding will also be provided for an accompanying project aiming to accelerate the implementation of the entire funding measure and its action areas as well as to increase their transformation potential. Essential priorities and structural elements of the accompanying process involve the coordination and organization of overarching accompanying activities carried out under the funding measure.

The accompanying project must address the following objectives and thematic fields:

- Linking of the projects within the research programme to identify and utilize synergies
- Linking with other projects and relevant stakeholders in the field of sustainable land management in the proposed project regions (e.g. research/development organizations, foundations, NGOs). The activities must be carried out in close cooperation with the African centres WASCAL and SASSCAL
- Linking with the activities of the relevant UN conventions (UNFCCC, CBD, UNCCD) and intergovernmental institutions such as IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services), IPCC (Intergovernmental Panel on Climate Change) and FAO (Food and Agriculture Organization of the United Nations). For example, this includes the organization and hosting of side events related to the funding priority at UN events where the African partners should play an active part
- Further supporting activities include addressing scientific cross-sectoral issues (e.g. by hosting relevant specialist workshops), increasing the scientific utilization of the results, for example by creating relevant (cross-project) professional publications on the effect and implementation of good governance, stakeholder processes and international (data) networking
- Enhancing the practical relevance of scientific research through the consistent orientation to specific stakeholder demands, e.g. by implementing a stakeholder process involving cross-regional, national and international actors and institutions (e.g. economic communities in West Africa (ECOWAS) and Southern Africa (SADC) and the African Union). Close collaboration with the African centres WASCAL and/or SASSCAL is also recommended in this context.
- Increasing the visibility and incorporation of the funding priority in the political and public debate, e.g. by drawing up position papers and policy briefs, hosting events with discussions or presentations on specific current issues in the fields of sustainable land management, land use and governance, organizing conferences on the status and results of the funding measure and through other innovative formats
- The accompanying project will have responsibility for the overarching scientific communication of the funding measure and public relations (see BMBF basic policy paper on science communication, 2019). The main focus will be on direct communication of science and research with stakeholders and the general public through information, dialogue and participation (e.g. processing of utilizable results with political and practical relevance, e.g. through publications or events aimed at target groups outside the specialist academic community). The activities must be carried out in close coordination with the regional projects. In addition, training should be offered to promote skills of project participants which are relevant for the creation and implementation of new science communication formats (e.g. seminars, information material). This includes the preparation of information for the funding provider as well as the communication of the results of the funding measure to the broader public in both Germany and the partner countries
- Providing support for education collaboration in the partner countries at higher education level (e.g. organization of guest lectures, courses, graduate study programmes) and at other levels (e.g. schools) in consultation with the African centres.

All projects are expected to make the following contributions which will be used in a progress review as indicators of success.

Contributions to be made in the field of science and education are the promotion of young scientists (numbers of successful PhD, MSc and BSc graduates) and the long-term development of German-African capacities in scientific research and education as well as the utilization of research findings in study modules or courses and the development of curricula. In particular, cooperation is desired with the two Regional Science Service Centres for climate change and sustainable land management, WASCAL and SASSCAL, which also receive BMBF funding (e.g. Graduate Studies Programme (GSP)).

The benefits of cooperation on a participatory basis are the continuous involvement of local authorities/village communities/towns, administrative and political decision-makers, representatives from civil society and further decision-

makers.

Application-oriented success includes collaborations with commercial companies (e.g. patent applications), adapted digital and resource-friendly solutions (e.g. services and technologies) for sustainable land management, sustainably produced agricultural products, innovative marketing strategies, the establishment of successful producer associations, the establishment of dedicated experimental plots and demonstration objects for both academic and non-academic initial and continuing training, including material for information and continuing education centres.

Peer-reviewed publications created collectively by all project partners – in particular the African partners – and, if appropriate, stakeholders are key for establishing inclusive cooperation on an equal footing.

3 Special prerequisites for funding

The details of cooperation between the German and African partners must be set out in a statement of participation (e.g. Memorandum of Understanding) of the foreign project partners.

3.1 One-step application procedure (for the accompanying project only)

The evaluation of the project proposals received will involve external experts and be based on the following criteria:

- Compatibility of the project with the objectives of the call
- Thematic and specialist expertise of the applicants
- Contributions to transdisciplinary networking
- Appropriate management of potential risks in achieving the objectives of the accompanying project
- Quality of the management strategy (structure, responsibilities, interfaces and linking between the different work packages as well as internal and external partners involved, project control and competences of the project management, work plan, milestone planning)
- Submission of a coherent plan for the integration of the subject areas and work packages involved in the accompanying project together with an appropriate internal communication strategy (including a strategy for handling data and data products and managing data within the collaborative project) as well as a comprehensive science communication strategy (including public relations) for the funding measure
- Submission of a coherent plan for the integration and linking of the regional projects operating under the funding measure as well as for the utilization of synergies
- Quality of the envisaged synthesis products and their compatibility with the objectives of the international conventions (UNCCD, UNFCCC, CBD) and their subordinate bodies (IPBES, IPCC) including the input of the synthesis products for these bodies
- Quality and meaningfulness of the utilization plan, also in terms of the objectives of this funding measure pertaining to the accompanying project (see above) and relevance within the political context of sustainable land management
- Quality of the work plan including milestone planning with regard to achieving the project objective and the feasibility of implementation within the set time frame
- Quality and appropriateness of personnel and financial resources planning based on a plausible list of planned expenditures or costs, broken down by work packages and partners. Due to the extensive management tasks, sufficient budgeting must be ensured for project management including (science) communication
- Plausibility of the explanations regarding the financial plan

3.2 Two-step application procedure (for the research and development projects)

The evaluation of the project outlines received will involve external experts and be based on the following criteria:

- Compatibility with the funding goals and action areas of the call
- The reasons for the selection and boundary of the proposed project region which are expected to lead to the successful achievement of the objectives
- Relevance of the working hypothesis and adopted research approach for the proposed project region
- Scientific and technological quality and originality and the probability that these will lead to the successful achievement of the objectives
- Potential for implementing knowledge with societal, technological and economic relevance
- Description of existing knowledge and methods as well as already available data and information to be built upon
- Outline of how the proposed project both differs from and complements the funding programmes of the two Science Services Centres (WASCAL and SASSCAL)

- Previous experience of the consortium in the field of interdisciplinary and transdisciplinary cooperation
- Probability of success of the research and development project with regard to the
 - composition of a qualified transdisciplinary team including an explanation of the choice of composition
 - planned measures for the involvement of the entire collaboration (research and practice partners or stakeholders) in the further specification and design of the research plan
 - appropriateness of the outlined communication strategy (including data management) and the outlined science communication strategy
- Appropriateness of the estimated costs/expenditures

3.2.1 Submission of formal proposals and decision-making procedure

The evaluation and review of the applications received will involve external experts and be based on the following criteria:

- Suitability of the firmed up working hypothesis for the proposed project region taking into account the action areas mentioned above
- Level of innovation and its scientific and technological quality
- Adequate incorporation of existing data and research findings as well as regional knowledge (including (ILK))
- Description of how the proposed project both differs from and complements the funding programmes of the two Science Services Centres (WASCAL and SASSCAL) including a description of envisaged cooperation
- Suitability of the project approach for generating knowledge with an effective societal, technological and economic impact (orientation to application)
- Quality of the research and development phase with regard to:
 - expertise of the overall collaboration (research and practice partners and stakeholders) and appropriate degree of transdisciplinarity
 - analysis of stakeholders including an explanation of stakeholder interests and how these are taken into account in the project objectives and work plans
 - envisaged implementation of the project findings and lasting project consolidation with the involvement of stakeholders
 - SWOT analysis
 - planning and feasibility of logistical aspects (e.g. research permits, availability of technical equipment)
 - feasibility of completion within the project period
- Quality of the management strategy which meets the above-listed transdisciplinarity requirements (structure, responsibilities, interfaces and linking between the different work packages, project control and competences of the project management, milestone planning, work plan)
- Envisaged support for young scientists (to gain PhD, MSc and BSc qualifications) including the development of German-African capacities in scientific research and education
- Quality of the work plan including milestone planning with regard to achieving the project objective and the feasibility of implementation within the set time frame
- Quality and appropriateness of personnel and financial resources planning based on a plausible list of planned expenditures or costs, broken down by work packages and partners. Due to the extensive management tasks, sufficient budgeting must be ensured for project management including (science) communication
- Submission of a statement of participation of the foreign project partners (e.g. Memorandum of Understanding), specifying a financial or in-kind contribution of their own. Project partners from BRICS or OECD countries must also submit a declaration on co-financing, e.g. through combination with projects which are currently funded in the partner country. Envisaged partners should already be involved at the conceptual phase of the project in order to ensure thematic and methodological consistency as well as cooperation on an equal footing.
- Submission of a coherent plan for the integration of the subject areas and work packages involved in the overall project together with an appropriate internal communication strategy, including a strategy for handling data and data products and managing data within the collaborative project, as well as a detailed science communication strategy (including public relations) for the collaboration
- Quality of the evaluation strategy including the continuous monitoring and documentation of indicators of success and quality assurance measures