

Annex 2: Status of 1st Round Research and Innovation Grant Projects as at December 31,2021

a. RSIF Research Award (Research Grant, Type 1)

| No | Grant Ref No | Project Title | Project Leader | African Host University | Proposal Value (USD) | Duration | Status | Challenges noted | Proposed solution offered |
|----|--------------|--|------------------------|--|----------------------|-----------|--|---|---|
| 1 | RSIF/RA/001 | Solar-assisted heat pump dryer with energy storage for drying biomaterials | Dr. Thomas Kivevele | Nelson Mandela African Institution of Science and Technology | 81,133 | 36 Months | <p>Project objective is to develop a prototype of a solar assisted heat pump dryer integrated with energy storage system for drying fruits.</p> <p>Status</p> <ul style="list-style-type: none"> -Renovation of sustainable energy lab completed -2 RSIF PhD students engaged and currently researching on objective 2 and 3 of the project -Collection on samples of heat storage materials done -Dryer has been designed and construction is on-going | -Some research component related to field work delayed due to COVID 19 restrictions. | - RCU has followed up with students to make travel arrangements following the relaxation of restrictions. |
| 2 | RSIF/RA/002 | Fluoride removal from drinking water using capacitive deionization | Dr. Yusufu A. Chande | Nelson Mandela African Institution of Science and Technology | 90,000 | 36 Months | <p>Project objective: to produce capacitive deionization (CDI) stack to be used for fluoride removal from water.</p> <p>Status</p> <ul style="list-style-type: none"> -CDI laboratory has been renovated and 4 RSIF students using it -Research on various bio materials to be used for developing the stack at advanced stages including procurement of various research supplies -Presented in the virtual 12th European Symposium on Electrochemical Engineering (June 14-17, 2021) -Participated in a workshop on Capacitive Deionization Modelling at Botswana International University of Science &Technology (October 2021) | -One student involved in the project is expected to go to Hanyang University (Collaborating partner) for Sandwich placement, however, Hanyang Univ. is currently not an IPI -Lengthy procurement processes at the University | -RCU has followed up with Hanyang University to sign MOU with PASET for hosting students |
| 3 | RSIF/RA/003 | Do-It-For-Yourself Adaptation: New Pathways For Community Flood Risk Communication | Dr. Aliyu Salisu Barau | Bayero University, Kano. | 90,000 | 24 Months | <p>Project objective: To strengthen flood resilience/adaptation capacity of dryland rural communities by developing an innovative, integrated, interdisciplinary, knowledge based, and solution-oriented approach.</p> <p>Status</p> <ul style="list-style-type: none"> -translation of meteorological terms and flood hazards related scientific terminologies completed. -desk review of most flood hazard and meteorological key words based on key terminologies approved by the UN General Assembly and other national climate agencies completed. -trainings for community members on flood response mechanisms conducted including sensitizing youth and women on following up politicians and policy makers for flood risk mitigation actions done. -produced 3 music tracks on flood related management -community members sensitized on human activities exacerbating flood incidences. | None | N/A |

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| 4 | RSIF/RA/004 | Real time Assessment of the indoor air pollution in Sub-Saharan households (Case study: Rwanda rural and urban areas) | Dr. Fredreric Nzanywayin goma | University of Rwanda | 89,980 | 36 Months | <p>Project objective: to investigate indoor air pollution in households using effective and adapted indoor air pollution IoT monitoring tools to evaluate the potential health hazard associated with the exposure to the indoor air pollution against the World Health Organization air quality guidelines targeting the Rwanda rural and urban population.</p> <p>Status</p> <ul style="list-style-type: none"> -Designed and developed prototype IOT device for indoor air pollution monitoring. 3 devices have been developed. -Server and user interface for monitoring data sent by the prototype device has been configured. -PhD students have been trained on how to develop and use the new IoT device | <ul style="list-style-type: none"> -Lengthy and delayed procurement processes at the university. -Challenges getting suppliers for required IoT devices | -RCU to provide procurement support where possible |
| 5 | RSIF/RA/005 | Research and Development of Photovoltaics based on Lead-Free Perovskite Solar Cell Technology | Prof. Francis Nyongesa | University of Nairobi | 89,988 | 36 Months | <p>Project objective: to conduct research and training in energy and renewable energy and policy advisory in photovoltaics' (PV) specifically on lead-free perovskite solar cells.</p> <p>Status</p> <ul style="list-style-type: none"> - Research work is on-going with 2 publications done in two Journals (New Journal of Chemistry and Materials Letters) - 7 conference presentations made as at Nov 2021 - One mentorship workshop conducted targeting scholars on career in physics and soft skills -2 short courses on solar PV technology, sizing and installation held in April and August -Participated in the energy policy and innovation workshop in Kenya organized by NACOSTI to influence policy regulatory framework on solar use systems. -Partnership established with the NACOSTI for development of energy policy paper for domestic and commercial use in Kenya. | <ul style="list-style-type: none"> -Closure of physical learning at university due to COVID, affecting pace of research progress | -Flexible timelines for implementation of workplan |
| 6 | RSIF/RA/006 | Building Resilient Agribusiness Practitioners through Design Thinking Approach | Prof. Irene Egyir | University of Ghana | 89,748 | 36 Months | <p>Project objective: to set up and pilot a Design Thinking (DT) Development Centre (DTDC) at the Department of Agricultural Economics and Agribusiness at the University of Ghana</p> <p>Status</p> <ul style="list-style-type: none"> -Design Thinking Development Centre established -Design Thinking curriculum and training calendar drafted; 1st phase of DT sessions implemented. 70 students and faculty trained. - Network of faculty of agri-product departments in Universities in Ghana established, consists of over 122 members. Virtual interactions among members. 105 network members expresses | <ul style="list-style-type: none"> - Post-COVID restrictions at partner institutions affected their level of engagement in project activities. - Networking platform meetings hindered by budget limitations | - Flexible timelines for implementation of workplan |

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| | | | | | | | interest to support Agri-product development for students as part of the graduation requirements. | | |
| b. RSIF Institutional Innovation Capacity Building Program Grant (ICBP), Innovation Type 1 | | | | | | | | | |
| 1 | RSIF/ICBP/001 | Institutional Framework to enhance the Agri-Innovation Ecosystem within the University of Ghana | Prof. Irene Egyir | University of Ghana | 50,000 | 24 Months | <p>Strengthening University Policy Environment</p> <ul style="list-style-type: none"> -Draft University of Ghana Agri-Innovation Policy strategy developed. -University's 10-year strategic plan has been reviewed to contextualize research and innovation status of the university. i.e facilities, and relevant training courses. <p>IP and Entrepreneurship capacity development</p> <ul style="list-style-type: none"> -2 workshops on IP protection and Agricultural Technology transfer conducted to 70 faculty and students - One online course with 2 modules on Agri-Innovation Development and Commercialization of Research developed and presented to graduate students and faculty - Training of Agri-TTO office staff on IP management conducted -Development of an accredited course on innovation and entrepreneurship ongoing. <p>Networking with partners</p> <ul style="list-style-type: none"> -1 Technical University and 4 Research Institutes of the Council for scientific and Industrial Research have been engaged in agri-innovation development and research commercialization - A formal partnership has been discussed with Head of Department of Family of Consumer Sciences in the UG School of Agriculture to host a maker space | <ul style="list-style-type: none"> - Lengthy and delayed procurement processes at the university. -COVID 19, affected operations for partner organizations | <ul style="list-style-type: none"> - RCU to provide procurement support where possible - Flexible timelines for implementation of workplan |
| 2 | RSIF/ICBP/002 | Initiatives for Sustainable Food Security Innovations in the Drylands | Prof. Jibrin Mohammed Jibrin | Bayero University, Kano | 50,000 | 18 Months | <p>IP and Entrepreneurship capacity development</p> <ul style="list-style-type: none"> -61 students trained on research and innovation best practices. -41 university staff trained on operating functional Tech Transfer Offices. <p>Networking with partners</p> <ul style="list-style-type: none"> - Stakeholder mapping to identify interests and constraints of key actors in food and agriculture innovation ecosystem completed. -Guest lecture on "building an enabling innovation environment" held with 50 attendees -Database of local, regional and international innovation hubs created and uploaded to the CDA website. | | |
| 3 | RSIF/ICBP/003 | Capacity Building for University-Industry Business Technology Transfer | Prof Julius Mwabora | University of Nairobi | 50,000 | 24 Months | <p>Strengthening University Policy Environment</p> <ul style="list-style-type: none"> -Review of relevant policies on technology transfer and research commercialization initiated -auditing of existing piloting and commercialization infrastructure initiated | <ul style="list-style-type: none"> - Slow university procurement processes delaying | <ul style="list-style-type: none"> - Flexible timelines for implementation of workplan |

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| | | | | | | | | implementation of some activities | |
| 4 | RSIF/ICBP/004 | From research to markets: Strengthening the Innovation Capacity of AUSTInspire | Prof. Peter Onwualu | African University of Science and Technology (AUST), Abuja | 50,000 | 14 Months | <p>Strengthening University Policy Environment</p> <ul style="list-style-type: none"> -Draft policy documents for copyright, innovation activities and start ups <p>Networking with industry partners</p> <ul style="list-style-type: none"> - Developed feasibility study report of hubs in Nigeria - Industry Advisory Board established -Innovation and entrepreneurship boot camp done. <p>IP and Entrepreneurship capacity development</p> <ul style="list-style-type: none"> -Inaugurated AUST Centre for Life Long Learning, one course started, 4 certificate short courses have been identified | -COVID 19 travel restrictions affected activity implementation for regional activities | - Flexible timelines for implementation of workplan |
| 5 | RSIF/ICBP/005 | Innovative Biosystems for Self-sufficiency in Molecular Biology Reagents in Africa | Prof. Eson Karimuribo | Sokoine University of Agriculture | 50,000 | 24 Months | <p>Strengthening University Policy Environment</p> <ul style="list-style-type: none"> -1st draft of IP Guidelines developed to facilitate operationalization of the SUA IP Policy. -Consultant engaged to develop draft University-Industry linkage policy <p>Networking with industry partners</p> <ul style="list-style-type: none"> -Agreement signed with TEMDO company for design and installation of a bioreactor for the project at SUA. - Networking visits to innovations hubs (RLabs and Kiota hubs) | -COVID 19 affected possibility to import bioreactor from a partner institute, opted for local manufacturing by local company (TEMDO) - Lengthy and delayed procurement and funds transfer processes at the university delayed the transfer of funds to TEMDO for construction of the bioreactor. | - RCU to provide procurement support where possible - Flexible timelines for implementation of workplan |
| 6 | RSIF/ICBP/006 | Strengthening Institutional Infrastructure for an Innovation Ecosystem | Prof. Onyewuchi Akaranta | University of Port Harcourt | 50,000 | 24 Months | <p>Strengthening University Policy Environment</p> <ul style="list-style-type: none"> -Discussions with University's Technology Park Committee to develop Stakeholders Strategic Policy Document. <p>IP and Entrepreneurship capacity development/ management</p> <ul style="list-style-type: none"> -32 faculty members, graduate students trained on competitive grants writing. -3 certificates filed as at April 2021 secured, a further 2 patents have been filled for processing. Draft policy to be developed by April 2022. <p>Networking with industry partners</p> <ul style="list-style-type: none"> -3 draft partnership MoUs with 3 industrial partners are under review by university's legal unit. | -Partnering industries shutdown due to COVID_19 pandemic - COVID 19 travel restrictions | - Flexible timelines for implementation of workplan |
| Cooperability Grant (Innovation Grants, Type 2) | | | | | | | | | |

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| 1 | RSIF/COOP/001 | Smart Bee Hiving Technology | Dr. Damien Hanyurwimfura | University of Rwanda | 49,995 | 24 Months | <p>Project objective: To design and implement a smart bee hiving monitoring system using IoT devices for smart bee honey farming production.</p> <p>Status</p> <ul style="list-style-type: none"> -Design of IoT tool developed. - Data collection and procurement of relevant IoT devices for development of prototype ongoing - One paper published in sensor journal under MDPI publisher | <ul style="list-style-type: none"> -The COVID 19 -Delayed procurement, there were limited suppliers for some of the equipment needed for developing the prototype | - Flexible timelines for implementation of workplan |
| 2 | RSIF/COOP/002 | Sustainable and innovative production of yams in Côte d'Ivoire by post-harvest pest control | Dr. Brahama Camara | Universite Felix Houphouet-Boigny | 50,000 | 24 Months | <p>Project objective: To develop biopesticide from 4 plant extracts to treat fungi in yams</p> <p>Status.</p> <ul style="list-style-type: none"> - Research work to develop a prototype ongoing, field work on data collection of infected yams and in vitro tests done, control tests done, -One article published based on research work done. | <ul style="list-style-type: none"> - Lengthy university administrative procedures that delayed start of the project - | |