

Accelerating Higher Education Expansion and Development (AHEAD)

**Ministry of Higher Education and Highways
University Grants Commission**

Results Area Three:
Promote Research, Development and Innovation

Research, Innovation and Commercialization Grants
(RIC Grants)

Guidelines for Proposal Submission

January 2018



LIST OF ABBREVIATIONS

AHEAD	-	Accelerating Higher Education Expansion and Development
DOR grants	-	Development Oriented Research grants
HEI	-	Higher Education Institution
HETC	-	Higher Education for the Twenty-First Century
HEMS	-	Humanities, Education, Management, Social Sciences
IBRD	-	International Bank for Reconstructions and Development
ICE grants	-	Innovation, Commercialization Enhancement grants
IDA	-	International Development Association
LKR	-	Sri Lankan Rupees
MHEH	-	Ministry of Higher Education and Highways
MIC	-	Middle income countries
OMST	-	Operations and Monitoring Support Team
OVAA	-	Other Value Added Activities
PI	-	Performance Indicator
PAT	-	Performance Achievement Template
PP	-	Procurement Plan
PPDU	-	Policy Planning & Development Unit
POTS	-	Program Operations and Technical Support
QIG	-	Quality & Innovation Grant
RICARP	-	RIC Academic Review Panel
RIC grants	-	Research, Innovation and Commercialization grants
R&D	-	Research and Development
SLQF	-	Sri Lanka Qualification Framework
STEM	-	Sciences, Technology, Engineering, and Mathematics
UGC	-	University Grants Commission
UMIC	-	Upper Middle Income Countries

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1. INTRODUCTION

1. The Accelerating Higher Education Expansion and Development (AHEAD) program will pay heed to expand, diversify and develop the higher education sector in Sri Lanka to drive economic growth through knowledge-based industrial and service sector activity and to produce graduates of global quality.

2. This program will be financed by the World Bank through Ministry of Higher Education and Highways (MHEH) **via the Program-for-Results (PforR) financing instrument.** The PforR's distinctive features include linking of disbursement of funds directly to the achievement of specific program results. AHEAD program will have the following four results areas.

Results Area One: Increase Access to Higher Education in priority Areas for Economic Development

3. Sri Lanka has an under-developed higher education sector which needs to be expanded rapidly to help attain the country's ambition to achieve fast, equitable growth and UMIC status. With a gross enrollment ratio (GER) of 19 percent in 2013 Sri Lanka is well below UMICs and even LMICs, which have average GERs of 37 percent and 23 percent respectively. Overall Sri Lanka is ranked 91st of 118 countries for higher education participation. Among East Asian countries which Sri Lanka aims to emulate, Indonesia's GER is 31 percent, Malaysia's GER is 39 percent, and Thailand's GER is 51 percent. The country also fares badly in terms of the proportion of higher education students enrolled in subjects of vital importance for economic development, such as the sciences (including medicine), technology, engineering and mathematics (STEM). The proportion of students is just 17 percent, causing Sri Lanka to be ranked only 79 of 99 countries. For engineering alone, with an enrolment share of 8 percent the country fares even worse at 92 of 103 countries. Sri Lanka needs to urgently increase higher education enrollment with a special focus on degree programs, such as STEM programs, that are important to drive future economic growth through higher value-added industries and services.

4. Objective of results area 1: To increase enrollment in higher education programs of strategic importance for economic development.

Result Area Two: Improve the Quality of Higher Education

5. The quality of higher education graduates currently varies sharply. At the high end graduates are globally employable. At the lower end graduates struggle to find suitable employment. These differences reflect sharp variations in the quality of programs and the socio-emotional skills (employability skills) of students. There are also major challenges in terms of inadequately qualified academic staff. Only 45 percent of university academics have Ph.Ds. Well-qualified academics are essential for university teaching and research, and the scarcity of such academics sharply constrains higher education development. Curricula, teaching and learning methods, and assessment systems in a majority of higher education programs have not kept pace with rapidly evolving knowledge, information and technology in advanced and upper-middle income countries.

6. Objective of results area 2: To increase the academic quality, and economic and social relevance, of higher education programs.

Result Area Three: Promote Research, Development and Innovation

7. The research output of Sri Lankan universities needs to be increased urgently. Research products from Sri Lankan universities are totally inadequate for an aspiring UMIC. For instance, the number of citations per million inhabitants shows Sri Lanka at 138 position out of 204 countries, which is three times less than Thailand and five times below Malaysia. While South Korea had about 4,500 patents applications per million inhabitants in 2014, Sri Lanka had only 22. The promotion of research is an urgent next step in the development of higher education in the country. First, research is a vital and distinguishing mandate of universities. Second, academics engaged in research are more likely to be more up-to-date in their discipline than other academics, and therefore better able to teach the current state of knowledge to students. Third, research and innovation makes a vitally important contribution to economic and social development in the modern world. This benefit is maximized when research outputs lead systematically to practical and relevant applications for economic development.

8. Objective of results area 3: To develop a culture of research, development, innovation and commercialization in (RDIC) higher education institutions.

Promote Research, Development and Innovation

9. GoSL currently funds research through a variety of institutions. However, the allocation for research has historically been small, with Gross Expenditure on Research and Development (GERD) considerably below 0.25 percent of GDP, which is the lowest category among countries in international classifications. The Government will scale up RDIC resources, with assistance from the Bank operation, to promote academic research and develop research and innovation activities in higher education institutions under three sub-result areas.

➤ Sub-Result Area 3.1: Promoting academic research

The Government strategy is seeking to promote academic research through a system of competitive performance-based research grants. There will be three types of Development-Oriented Research (DOR) grants

- DORs for the STEM subjects.
- DORs for the HEMS subjects.
- DORs for a combination of STEM-HEMS research.

➤ Sub-Result Area 3.2: Promoting innovation and commercialization of research

The Government strategy is seeking to promote innovation and commercialization of research through a system of competitive performance-based Research, Innovation and Commercialization (RIC) grants. There will be three types of competitive RIC grants

- RICs for the STEM subjects.
- RICs for the HEMS subjects.
- RICs for a combination of STEM-HEMS research.

➤ **Innovation commercialization enhancement grants:** There were nine programs under the WB funded HETC/QIG/W4 project which successfully implemented activities to promote the commercialization of research. These nine programs will be assisted to further develop their capacity for the commercialization of research, development and innovation.

10. The DOR and RIC grants will operate at the level of research teams where research teams are defined as a study program, a team drawn from a study program, a team whose members span more than one study program, a team with collaborative researchers from abroad.

11. In all research teams, researchers from a University/Institute under the UGC must be the team leader. Multidisciplinary research teams and collaborations with researchers from abroad are encouraged, however payments for overseas researchers are not allowed under the grant unless they are given a consultancy assignment based in Sri Lanka. The majority of the researchers in the team must be from Sri Lanka.

12. This document aims to provide Guidelines for the Proposal Preparation for the RICs. Separate guidelines are provided, for the proposal preparation under the DORs.

Grants will be made available in two rounds, the first round commencing in 2018 according to the Table 1 below.

Table 1: Grant types and the grant size of RIC under two broad categories where Sciences, Technology, Engineering, and Mathematics (STEM), Humanities, Education, Management, Social Sciences (HEMS)

Grant Type.	2018		2018		2019	
	Value per grant Rs (Mn)	No. of grants	Value per grant Rs (Mn)	No. of grants	Value per grant Rs (Mn)	No. of grants
RIC STEM Open to research teams not receiving Innovation, Commercialization Enhancement Grants. Competitively selected.	45	7	-	-	45	7
RIC HEMS Open to research teams not receiving Innovation, Commercialization Enhancement Grants. Competitively selected.	10	4	-	-	10	4
RIC STEM - HEMS Open to combinations of research teams, which cover STEM and HEMS <u>within Universities.</u> Competitively selected.	-	-	50	5	-	-

2. ELIGIBILITY

13. This competitive grant scheme under RIC is open to all 15 public universities including affiliated institutes under the purview of the UGC (Annex 1), and non-state HEIs (Annex 2), subject to meeting the following eligibility criteria.

- Higher Education Institution should have prepared and be ready to implement an institutional development plan promoting research innovation and commercialization in their institutional plan covering the entire AHEAD program implementation period. In 2018 a statement acceptable to the World Bank from the Vice Chancellor/Head of HEI will be sufficient to meet this condition. In subsequent years this should be incorporated into the institutional development plan.
- The research team should consist of at least 3 members and at least 60% of the team should have Ph.D. qualifications.

14. The proposals should be submitted by research teams of eligible Higher Education Institutes, with the endorsement of the Head/s of the relevant Department/s, Dean/s of the relevant Faculties or/and Director of the Institute (where relevant) and the Vice-Chancellor/s. There is no limit on the maximum number of proposals that can be submitted by any University. However, the maximum number of RICs awarded to any University including the affiliated Institutes will be limited to 3 (STEM and HEMS) per round (2018 and 2019). There will be no limit to RIC STEM+HEMS per University/Institutes, due to be awarded around 2018.

15. Funds will be provided, using a competitive mechanism for DOR and RIC grants and only the winners of the competition will benefit from this grant scheme.

3. ELIGIBLE ACTIONS

16. The RIC grants are available for the researchers to commercialize their research findings along with a suitable entrepreneur or firm/industry. In all research commercialization teams, researchers from a University/Institute under the UGC must be the team leader. Multidisciplinary research commercialization teams and collaborations with researchers from industry are encouraged, however payments for the industry researchers are not allowed under the grant.

17. The RIC grants facilitate and encourage the eligible research commercialization teams to commercialize an outcome of a research with a partner such as an industry in order to improve the economic, social and cultural development of Sri Lanka. It is expected that the output and outcome of the commercialization activities undertaken by the research commercialization teams will ultimately be beneficial to the Sri Lankan Society.

18. The RICs will support properly designed strategic and innovative commercialization proposals submitted by eligible University/Higher Education Institutions. The commercialization partner must be identified in the proposal and their commitment must be indicated in the proposal. All the proposed actions should be linked with the proposed commercialization program. Manufacturing and subsequent commercialization operations should be solely the responsibility of firm/industry/entrepreneur.

19. Innovation and creativity in formulating the outcomes is encouraged and will be highly valued. It is essential that all the actions in Table A are designed to achieve the desired performance indicators.

20. The proposed research commercialization should be backed by the prior research in the form of patents, copyrights, consultancy outputs, research papers or communications by the research team.

21. Relevance and impact of the commercialization output of the proposed actions to the society and socio-economic development of Sri Lanka should be clearly identified in the proposal. It is important to highlight the necessity to utilize the funds from a loan to the Government of Sri Lanka towards this commercialization endeavor. Where relevant, significance of the commercialization endeavor to the other industries, human resource development in R&D, institutional strengthening in R&D infrastructure, benefits to the national and international researchers and general public, benefits to the undergraduate programs should be described in the proposal.

4. ELIGIBLE EXPENDITURE

22. The budget ceiling for different grants under RIC are given in Table 1 and the total grant size should not be exceeded by the planned actions. The eligible expenditure to be proposed for the RICs will be limited to the items described in the following sections under four cost components: **Goods (maximum 90% of the total), Works (maximum 50% of the total), Services [Consultancy services (maximum 20% of the total) and Non-Consultancy Services (maximum 20% of the total)] and Other Value Added Activities (OVAA) (maximum 90% of the grant). OVAA are “workshops and training” and “other items”** such as the normal expenditures of the research program, such as repair, maintenance of equipment and technology and research vehicles; fuel; office supplies; utilities; consumables; bank charges; advertising expenses; salaries, allowances, and benefits of research staff such as research assistants and survey enumerators; communications; travel of staff for research purposes such as surveys (including per diems and accommodation where needed).

23. It is strongly recommended that the proposal must consider the institutional commitment and capacity in proposing the budget and not merely based on the allowable ceiling. The proposals should be accompanied by strong arguments and justifications of their needs.

I. Goods

24. Goods to be procured under the RICs include all relevant research materials such as equipment, furniture, books, journals, software etc. which will be kept at the eligible HEI. Support for procuring new research equipment may be proposed under this component. Furniture purchases are limited to items required to produce the research output of relevant program winners. Purchase of vehicles is not allowed, however specialized vehicles for research purposes (such as tractors) are allowed.

II. Works

25. The civil works to be carried out under the project can be construction, renovation or expansion/upgrading of the existing physical facilities at the existing premises of grant winning HEI, directly relevant to the research programs. Construction of new buildings will be eligible provided it is relevant to meet the research objective/s. *Purchase of land is not eligible*.

III. Services

- **Consultancy services:** A person provides an intellectual service. There is a knowledge dimension in his/her service. E.g. an expert to train researchers/staff to use high end equipment or a patent attorney to protect intellectual property.

26. Payment for national and international consultants will be eligible under the Consultancies, subject to strong arguments and justifications of their needs. Terms Of References (TORs) will be prepared based on the template provided by OMST for the eligible consultancies during the preparation of the Performance Achievement Template (PAT).

- **Non Consultancy Services:** Services that are not intellectual services.

27. These are contracted on the basis of performance against a measurable physical output, where performance standards can be clearly identified and consistently applied. For example drilling, aerial photography, satellite imagery, mapping and similar operations.

IV. Other Value Added Activities (OVAA)

28. OVAA include the relevant expenditures of the research project such as reasonable costs of goods and services required for day-to-day implementation, including maintenance of equipment, fuel, office supplies, utilities, consumables, office maintenance, payments for research staff such as research assistants and survey enumerators, activity coordinators, academic and research staff travel and accommodation and per diems, advertising expenses, communications expenses, travel of academic and research staff and associated per diems. The percentage of OVAA cannot exceed more than 90% of the total grant. A lump sum of OVAA can be allocated for the project. A plan for the first year must be clearly identified in the PAT/PP preparation. At the beginning of the second and third years plans for the expenditures under the OVAA should be clearly identified for the respective years.

29. The monthly allowance of full time Post- Doctoral fellows, Research Assistants and Project Assistants (no TOR but monthly time sheets must be submitted to OTS) will also come under this category. Payment rates will be set as per payments by Management Services Circular No 1/2016 by Department of Management Services or any updates thereafter. Monthly allowance of research assistant can be on par with relevant academic funding agencies in the country such as National Science Foundation/National Research Council of Sri Lanka. The salary scale of a Research cum project assistant is higher than ordinary research assistant and this should be periodically agreed with the WB.

30. Other actions that fall under this component are as follows.
- Operational assistance (for example technical assistance, labor cost)
 - Research expenses such as questionnaire preparation, translation
 - Any expenses on focus group discussions and field work
 - Short term domestic training (i.e. less than 3 months)
 - Registration and tuition fees for M.Phil./ degree programs at the University where the research is being done
 - Fees for publishing research papers
 - Attending Workshops/Seminars for dissemination of research findings (only for research assistant, Post-Doctoral fellow and research team members)
 - With a completed working paper submitted to the OMST, a researcher can attend overseas conference to present a conference paper once. All members of the team are eligible for this expense however only a maximum of Rs. 600,000/= can be set aside for this purpose in the PAT.
 - Frame work contracts (where suppliers are identified at the beginning of the year to provide the chemicals required, at an agreed price, during the course of the year) for workshops seminars purchases of consumables
 - The costs of conducting training, workshops, seminars, symposia.
 - Out-sourcing scientific analysis (such as chemical and biological analysis) and relevant professional services (such as language editing)
 - Local travelling, field visits/excursions directly relevant to the proposed actions

31. In addition to above, other services strictly related to the research will be considered on exceptional basis with proper justifications. The grant coordinator will be able to incur the expenditure based on the rates provided by the OMST. List of ineligible expenditures will also be provided.

NOTE:

Foreign partnerships are possible under the grant however cost must be borne by the foreign party.

Funds can be allocated to obtain the services of a post-doc in order to strengthen the output of the research activity at Higher Educational Institution (HEI).

5. BUDGETING GUIDELINES

32. In allocating funds under the RICs, the universities will be clustered into 3 tiers according to Annex 3. Under any eligible Higher Educational Institution, a research team can obtain funds according to the Table 1.

33. Proposals should be self-contained and fully financed by this project and should not depend on funds external to the research proposal to make sure the external factors will not affect reaching the performance indicators. Further the percentage allocation for the four cost components (Goods, Works, Consultancies and Other services) should not exceed the maximum allowed percentage.

34. The proposed budget should be based on solid rationale reflecting an efficient and effective use of proposed investment as well as the existing resources to achieve the objectives. The proposals should be accompanied by strong arguments and justifications of their needs.

6. STRUCTURE OF THE PROPOSAL AND SCORE CARD

35. *Proposal should be limited to a maximum of 20 pages (excluding appendices)* printed in A-4 paper format, single spaced using Times New Roman font (font-size – 12). Each sub heading below from 1-14 must start on a new page.

Layout of the Proposal

1. Title page
2. Research team
3. Literature survey
4. The potential commercializable research product/process/idea for HEMS
5. Objective/s
6. Methodology
7. Time sequence of project actions
8. Economic/market and social relevance
9. Budget justification
10. Institutional commitment
11. Implementation schedule
 - Table A – Proposed Budget
 - Table B – Overall Activity Plan
12. Performance Indicators
 - Table C – Overall Performance Indicators
13. Appendices:
 - Table D.1 - Research output
 - Table D.2 - Physical Resources Available for the proposed Research
 - CV of the Research team

36. The proposal and the scoring system for each individual criterion are given below to enhance the transparency of the evaluation process. The italicized font differentiate the instruction to the reviewer from the proposal writer.

37. Each criterion will use a five scale scoring (1-5) where 1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent. The score will be multiplied by its respective weight factor to get the total weighted score. The proposals with a score more than 65 will be considered as satisfactory and will move to the next level of evaluation.

1. Title page

Title of the research project:
Area of specialization of the research study (identify the relevant classification in the first three columns and fill in column four of the Table in Annex4):
University/Institute
Grant type: RIC 1 STEM/RIC 1 HEMS/RIC STEM/HEMS

Name/s of reviewers who should NOT review the proposal can be incorporated in the cover letter

2. Research team

Information of the team leader and all researchers in the team (Give the following information on this section and attach the curriculum vitae of the members of the research team). The team leader must be eligible to be in the University during the project period and the team must have a representative from a firm/industry/entrepreneur/public sector/NGO.

Name:

ID number:

Present position/designation:

Highest academic qualification:

Field of specialization:

Official address:

Mobile Phone:

Email address:

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Reviewer: Rate the competence of the research team (Weight factor = 10)

1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent

3. Literature survey

Give a summary of the literature survey in the relevant research area based on the literature and site the references

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Reviewer: Rate the comprehensiveness of the literature survey (Weight factor = 10)

1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent

4. The potential commercializable research product/process/idea for HEMS

Explain the research solution and state any outcomes arising from previous research such as patents, publications or communications. Describe the technology developed (product or process) and how you intend to commercialize. For HEMS applicants commercially viable idea with either industry/public policy partner will be acceptable.

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Reviewer: Rate the strength of the relevant research product/process and rationale for the commercialization (Weight factor = 15)

1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent

5. Objective/s

State the objective/s of the commercialization endeavor and indicate the appropriate collaboration arrangements

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Reviewer: Rate the preparedness/readiness of the proposal towards commercialization (Weight factor = 10)

1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent

6. Methodology

Provide details of methodology. Describe the planning and management of actions with an industry partner in sufficient detail.

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Reviewer: Rate the appropriateness of the proposed methodology (Weight factor = 15)

1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent

7. Time sequence of project actions

Give a time sequence of all project actions with time estimation in months. Describe how the actions, will be set up and how it will be implemented under a given time frame. Limit the number of actions to five.

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Reviewer: Rate the chance of success of the project (Weight factor = 10)

1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent

8. Economic/market and social relevance

State the economic and social relevance of the outcomes of the commercialization on the wider scientific community and /or society. Include targeted beneficiaries as well as indirect benefits to the stakeholders. This should include showing how any expensive equipment can be used for undergraduate teaching and learning. State very clearly how the benefits of this commercialization support the University through royalty or other benefits. This section can be supported by the IP policy of the University or the license agreement. The proposal will demonstrate the commitment of research team and the university to use the part of income generated to maintain and develop the equipment & facilities required for future research work.

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Reviewer: Rate the value of the commercialization endeavor (Weight factor = 20)

1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent

9. Budget justification

Indicate a budget justification for your actions (include justification for any consumable, equipment, civil works etc.). Proposal should show how adequate physical space can be made available for equipment. Where relevant state how resources from the collaborative party/industry will be used for the implementation of the proposed commercialization.

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Reviewer: Rate the value for money and check whether the proposal is technically and financially fully self-contained (Weight factor = 10)

1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =Excellent

10. Institutional commitment

Include a statement from an academic administrator (Head or Dean) on the provision of available facilities to conduct this research. Include a statement from the entrepreneur or the industry partner on the willingness towards the commercialization endeavor

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Recommendation of the Head/s of the relevant Department/s,
Recommendation of Dean/s of the relevant Faculties or Director of the Institute (where relevant)

Recommendation of the Vice-Chancellor

Certification by the entrepreneur/industry partner

Reviewer: Institutional commitment is a necessary requirement for funding. Proposals under RIC STEM and HEMS should have the endorsement of all relevant academic administrators

11. Implementation Schedule

In order to undertake the research project successfully the following implementation schedule will be followed as in Table A and B.

Proposed Budget (Table A) and Overall Activity Plan (Table B)

The Proposed Budget (Table A) and Overall Action Plan (Table B) should be presented using the standard formats given in pages 13 and 14.

Person in Charge

Provide the name and designation of the researchers(s) who will be mainly responsible for the implementation of the actions (not for sub action) given in Table A and B.

Table A. Proposed Budget

Action	Sub-action	Estimated Cost (LKR)					
		GOODS	WORKS	CONSULTANCY SERVICES	NON-CONSULTANCY SERVICES	OTHER VALUE ADDED ACTIVITIES (OVAA)	TOTAL
1.	1.1						
	1.2						
	1.3						
	Sub total for action 1						
2.....	2.1						
	2.2.						
	2.3						
	Sub total for action 2						
3.	3.1.....						
	... 3.2.						
	Sub total for action 3						
4.....	4.1						
	4.2						
	4.3						
	Sub total for action 4						
5.....	5.1						
	5.2						
	Sub total for action 5						
Total							

- Actions are processes of the research project helping the researches to achieve the output and finally an outcome
 - Do not exceed more than 5 actions

Table B. Overall Action Plan

Action	Sub-Action	Year 1				Year 2				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.	1.1.												
	1.2.												
	1.3.												
2.....	2.1.												
	2.2.												
	2.3												
3.	3.1.												
	3.2.												
4.....	4.1.....												
	4.2.....												
	4.3.....												
5.....	5.1.....												
	5.2.....												

12. Performance Indicators

38. A set of key performance indicators (KPIs) will be used to assist implementation and to measure the overall performance of the research program. Each KPI will be measured annually using the Template depicted in Table C. Baseline values should be zero. The KPIs relevant for your research program should be identified on the contents of the proposed research. If an indicator is not relevant to the proposed study, write zero without changing the format. The disbursement of funds will be linked to the achievement of the targets specified in Table C.

Table C. Overall Performance Indicators

No.	Indicator	Baseline	Year 1	Year 2	Year 3	Final	Evidence*
1	Number of national patents	0					
2	Number of international patents	0					
3	Number of industrial designs	0					
4	Number of national copyrights (e.g. software)	0					
5	Number of international copyrights (e.g. software)	0					
6	Number of national trademarks	0					
7	Number of international trademarks	0					
8	Number of Patent Cooperation Treaties (PCTs)	0					
9	Number of license agreements	0					
10	Number of assignments of IP	0					
11	Number of commercialized products	0					
12	Number of industry-university linkages (MOU or agreements) for research commercialization	0					

Baseline, end of year 1-3 are not cumulative. The final KPI is cumulative

* Evidence need not be filled at the proposal writing stage

During implementation, the performance indicators will be divided into the following categories and will be monitored quarterly.

(a) **Outcome indicators.** These are indicators which mark the completion of a research and innovation activity and are (mainly) in the control of the research team. For instance, a research activity completed and submitted for a patent, copyright or trademark, can be an outcome. A research activity completed and negotiations commenced for license agreements can be another outcome.

(b) **Final results indicators.** These are indicators which mark the full completion of a research commercialization activity, but which contain elements that are outside the control of the research team. For instance, the obtaining of a patent, copyright or trademark, can be a final result. This is because obtaining a patent, copyright or trademark, can take considerable time, and is based on factors outside the control of the research teams.

(c) **Downstream benefits.** These are direct spin-off benefits from the research activity. For instance, if a patent were to generate an income, either as a one-time fee, or a stream of royalties, this would be a spin-off benefit. If a research activity were to enable a company to introduce a new or improved product to the market that would also be a downstream benefit.

At the stage of proposal writing, the teams are asked to propose only the outcome indicators which they plan to achieve under this RIC program. Final results indicators and

downstream benefits will be monitored during implementation as it is of importance to us, the university and the country.

13. Appendices

39. The proposal should contain the Table D.1 and the Curriculum vitae of the research team as appendices. *Any other tables/graphs that the proponent may consider relevant could also be included as appendices.*

Table D.1 Research output of the research team (During the years 2011-2016)

Output	Team leader	Researcher 1	Researcher 2	Total
Number of research papers published in peer reviewed indexed international journals				
Number of research papers published in peer reviewed local journals				
Number of other research publications (monographs, books, book chapters etc.) by reputed publishers				
Number of research papers presented and abstract published in academic symposia, professional bodies at international level				
Number of research papers presented and abstract published in academic symposia, professional bodies at national level				
Number of journals where the researcher served as an editor				
Number of applications for patents, copyrights, trademarks, industrial designs etc.				
Number of innovations commercialized				

CV of the Research team

Details of the collaboration with the counterpart (firm/industry/entrepreneur)

7. SELECTION CRITERIA

40. The score card given in section 6 will be used by the reviewers during the desk evaluation and the discussion stage. The weight factor for each criterion is given within parentheses in section 6.

41. The scoring system for each individual criterion will use a five scale scoring (1-5) where 1=very poor, 2 =poor, 3 =fair, 4 =good, 5 =very good. Reviewers' guidelines for five scale scoring is given in Annex 5.

Section	Weight (A)	Score (B)	Actual mark (A x B/5)
Research team	10	3	6
Literature survey	10	4	8
The potential commercializable research product/process/idea for HEMS	15	3	9
Objective/s	10	4	8
Methodology	15	4	12
Time sequence of project actions	10	3	6
Economic/market and social relevance	20	3	12
Budget justification	10	3	6
Total score	100		67

42. The score will be multiplied by its respective weight factor as given above to obtain the actual mark and simple addition of the actual mark for each section will give the total mark.

8. SELECTION PROCESS

43. The necessary conditions for a proposal to be short listed for progression to the “discussion stage” are:

- (a). The assigned score for each criterion is at least 3 (at least 60% of the points allotted for each criterion) **AND**
- (b). The total score is at least 65 out of 100

44. The decision for discussion stage will however depend on the number of available grants for the RICs.

45. Overall final score for the proposal would be the average total scores of the desk and discussion stage. Evaluation in the discussion stage will also follow the same format given in section 7.

Final Score = (Desk evaluation actual mark + Discussion stage actual mark)/2

The final score must be minimum 70 out of 100 to receive a grant under RIC.

The evaluation of proposals will be based on the following principles:

- Objectivity
- Fairness
- Competence
- Professionalism
- Relevance to the results to be achieved.

46. The evaluation process should not only be fair and objective, but also should be transparent. Any potential conflict of interest should be prevented in the evaluation process. Hence, the reviewers will not be allowed to evaluate the proposals submitted by his/her own university or the institution that he/she has affiliation, financial connection or personal interest. It has to be emphasized that the process is subjected to be observed and audited by independent, external experts at a later stage.

47. The proposal will be evaluated by academics of the same discipline. A foreign reviewer may be included in the desk evaluation but during discussion stage a local reviewer may replace the foreign reviewer.

48. The evaluation process for the RICs involves the following steps:

- Submission of the Proposal
- Eligibility Check
- Desk Evaluation of the Proposal
- Discussion stage for clarifications and re-evaluation
- Recommendation of the RIC Academic Review Panel
- Ratification by the RIC Board

49. *Proposal Submission* should be done according to the Guidelines for submission of RIC proposals, and the structure of the proposal is described in Section 6 of the Guidelines. The proposal should not exceed 20 pages excluding appendices.

50. *Eligibility Check* of the proposing research team will be conducted by the MHEH and those satisfying the eligibility criteria will be forwarded for desk evaluation.

51. *Desk Evaluation of the proposal* will be undertaken by a RIC Academic Review Panel (RICARP) selected by the UGC and MHEH and appointed by the OMST. The RICARP will consist of minimum 3 members including *subject specialists*. One of the panel members will be designated as the *Anchor Reviewer*. During the desk evaluation, the reviewers evaluate the proposals according to a set of evaluation criteria stated in this document and recommend whether to proceed or not to the next stage (i.e. Discussion stage). A score card will be provided to all the proponents who have submitted proposals, along with *Reviewers' Comments*.

52. Subsequent to the desk evaluation, discussion will be conducted with the selected proponents by the RICARP that has conducted the desk evaluations of the proposal (If a foreign evaluator was involved in the desk evaluation such reviewers may be replaced by local reviewers). The discussion stage would normally be conducted through face-face onsite evaluation in exceptional circumstances in HEMS the discussion may be conducted by personal interviews or video conferencing.

53. The main objective of the discussion stage is to assess the conformity between the written proposal and the ground realities, and to draw a final judgment on the feasibility and implementability of the proposed plan.

In particular, the discussion stage has the following objectives:

- Validation of the information included in the proposal;
- Clarification of issues that would have arisen during the desk evaluation;
- Check the availability of researchers throughout the project duration;
- Assessment of the University/Institute/Faculty commitment to the project actions outlined in the proposal.

54. Accordingly, during the discussion stage, the reviewers will look for documentary and factual evidences to verify information provided in the proposal. The review report will act as guides during the discussion stage. The reviewers will make suggestions/recommendations for further improvements of the proposal so as to ensure that the proposal would be able to achieve the anticipated objective of RIC of the AHEAD program. A feedback will be provided to the proponent through the *final score card and reviewers' comments* after the Site Visit.

55. *Recommendation* to award a grant will be made by the RICARP based on all the above evaluations, and this will be forwarded to the RIC Board for ratification.

56. *Ratification* of the RICARP recommendation will be done by the RIC Board at aggregate level. The RIC Board will consist of representatives of MHEH, UGC, OMST. Reviewers will be invited for clarifications if required.

9. SCHEDULE FOR THE COMPETITION

ACTIVITY	TO BE COMPLETED
Invitation for proposals	January 2018
Training on Proposal Writing	March 2018
Training of Reviewers	March 2018
Submission of Proposals	April 2018
Desk Evaluation	May 2018
Discussion stage	June 2018
Announcements	July 2018
PAT preparation	July 2018
Award of Grants	August 2018

10. SUBMISSION PROCEDURE

57. The proposal with a covering letter signed by Head/s of Department/s, the Dean of the relevant Faculty/ies or/and Director of the Institute (where relevant) and the Vice-Chancellor must be received by the OMST/AHEAD program on or before the stipulated deadline. The format for the covering letter will be issued by the OMST. Submission can be done in person, by messengers or by mail. Proposals received beyond the deadline or sent by e-mail will not be considered. Proponents are strongly encouraged to submit their proposals in advance of the deadline.

58. Proposals should be submitted in their final form, and no additional written or other information will be considered in the evaluation process.

59. Proposals should be submitted in 5 (five) hard copies and 1 (one) soft copy in CD to the following address.

Lead Academic Expert, Research, Development and Innovation
Accelerating Higher Education Expansion and Development (AHEAD)
Ministry of Higher Education and Highways
Address to be announced

11. MONITORING & EVALUATION

60. The Monitoring and Evaluation are indispensable elements for the effective and efficient implementation of the AHEAD program. The development of a comprehensive Monitoring and Evaluation (M&E) program will ensure that waste of resources during project implementation is prevented, that the project will stay on course, and that the objectives are achieved within the planned time frame. Moreover, it will set the standards for a project implementation, where transparency and accountability are comprehensively incorporated into the project design. Further, a sound M&E system would undoubtedly benefit the management in particular and all stakeholders in general. Hence, the AHEAD program will pay a special attention to the M&E process.

61. Monitoring and Evaluation of RICs will be conducted through the following means:

1. Submission of Half Yearly Progress Reports
2. Annual Evaluation

62. The *Half Yearly Progress Monitoring* is aimed at consolidating the progress achieved during the previous six months. Each research team receiving a RIC grant is expected to submit *Half Yearly Progress Reports* to the MHEH according to a format provided. This report shall include brief descriptions on major achievements, obstacles encountered and actions taken to overcome them. The available data on Performance Indicators (PIs) should also be included in the report. Further, the deviation(s) from the Performance Achievement Template (PAT), if any, should be discussed in detail and reason(s) for such deviations should be established with certainty. The MHEH will assess the degree of compliance by the grantee to the PAT. If and when there is a major deviation, the MHEH may recommend the necessary corrective action(s).

63. The *Annual Evaluation* will be conducted at the end of the each year of the sub-project against a set of indicators. The primary objective of the *Annual Evaluation* is to recommend the corrective measures that need to be taken before entering the next year of implementation. The *Annual Evaluation* will produce a concrete recommendation affecting project implementation during the balance project period. In particular, the *Annual Evaluation* will

- assess the grantee's capacity to implement the plan;
- assess the feasibility to achieve the performance indicators within the given time frame;
- recommend the necessary corrective action to improve performance.

ANNEXES

Annex 1. Classification of STEM & HEMS

Applicants can decide whether to submit their proposals under STEM or HEMS (e.g. Classification of a proposal from staff of Faculty of Graduate Studies depends on the content of the proposal)

UNIVERSITY	STEM (FACULTY, INSTITUTE)	HEMS (FACULTY, INSTITUTE, CAMPUS)
University of Colombo	Medicine, Science, Institute of Indigenous Medicine, University of Colombo School of Computing	Arts, Education, Law, Management & Finance, Sri Palee, Graduate Studies
University of Peradeniya	Agriculture, Dental Sciences, Engineering, Medicine, Science, Veterinary Medicine & Animal Science, Allied Health Science, PGIS, PGIA	Arts, Management
University of Sri Jayewardenepura	Applied Sciences, Medical Science, Technology, Engineering,	Humanities & Social Science, Management Studies & Commerce, Graduate Studies
University of Kelaniya	Medicine, Science, Computing & Technology, Gampaha Wickramarachchi Ayurvedic Institute	Commerce & Management Studies, Humanities, Social Science, Graduate Studies
University of Moratuwa	Architecture, Engineering, Information Technology	
University of Jaffna	Agriculture, Medicine, Engineering, Science, Vauniya Campus (Applied Science), Sidda Medicine Unit	Arts, Management Studies & Commerce, Graduate Studies, Vauniya Campus (Business Studies)
University of Ruhuna	Agriculture, Engineering, Medicine, Science, Fisheries and Marine Science, Technology	Humanities and Social Sciences, Management & Finance, Graduate Studies
Eastern University Sri Lanka	Agriculture, Health Care Sciences, Science, Trincomalee Campus (Applied Sciences, Sidda Unit)	Arts & Culture, Commerce & Management, Trincomalee Campus (Communication & Business Studies), Swami Vipulananda Institute of Aesthetic Studies,
South Eastern University of Sri Lanka	Applied Sciences, Engineering	Arts & Culture, Management & Commerce, Islamic Studies & Arabic Language
Rajarata University of Sri Lanka	Agriculture, Applied Sciences, Medicine & Allied Sciences	Management Studies, Social Sciences & Humanities
Sabaragamuwa University of Sri Lanka	Agricultural Sciences, Applied Sciences, Geomatics	Management Studies, Social Sciences & Languages
Wayamba University of Sri Lanka	Agriculture & Plantation Management, Applied Sciences, Livestock Fisheries & Nutrition	Business Studies & Finance
Uva Wellassa University of Sri Lanka	Animal Science & Export Agriculture, Science & Technology	Management
University of Visual and Performing Arts		Dance & Drama, Music, Visual Arts
Open University of Sri Lanka	Engineering & Technology, Health Sciences, Natural Sciences	Education, Humanities & Social Sciences

Annex 2. Non-State Private Higher Education Institutions

1. Institute of Technological Studies
2. Sri Lanka Institute of Information Technology (Guarantee) Limited
3. Aquinas College of Higher Studies
4. South Asian Institute of Technology and Medicine (Pvt) Ltd. (SAITM)
5. Colombo International Nautical and Engineering College (CINEC)
6. The Institute of Chartered Accountants of Sri Lanka
7. SANASA Campus Ltd
8. Horizon College of Business & Technology (Pvt) Ltd.
9. KAATSU-Highly Advanced Medical Technology Training Centre (Pvt) Limited
10. Other institutions will be added as they are approved by the MHEH

Annex 3. Notional Allocations and Maximum Grant Sizes for RICS

	No. of Grants/Allocation LKR million			No of Grants/Allocation LKR million			Total
	RIC 1 STEM	RIC 1 HEMS	RIC STEM + HEMS	RIC 2 STEM	RIC 2 HEMS		
Tier 1 (number of grants 2018+2019)/2018 <i>CMB, KLN, MRT, OUSL, PDN, RHN, SJP</i>	4	2	2	3	2		13
Tier 2 (number of grants 2018+2019)/2018 <i>EUSL, JFN, RUSL, SEUSL, SUSL, UVPA, UWU, WUSL</i>	3	2	2	4	2		13
Tier 3 (number of grants 2018) <i>Non-state HEI</i>	-	-	1	-	-		1
<i>Maximum Grant (LKR m)</i>	45	10	50	45	10		-
<i>Total No. of Grants</i>	7	4	5	7	4		27
Total Allocation (SLR m)	315	40	250	315	40		960

Tier 1: CMB (University of Colombo), KLN (University of Kelaniya), MRT (University of Moratuwa), OUSL (Open University of Sri Lanka), PDN (University of Peradeniya), RHN (University of Ruhuna), SJP (University of Sri Jayewardenepura)

Tier 2: EUSL (Eastern University Sri Lanka), JFN (University of Jaffna), RUSL (Rajarata University of Sri Lanka), SEUSL (South Eastern University of Sri Lanka), SUSL (Sabaragamuwa University of Sri Lanka), UVPA (University of Visual and Performing Arts), WUSL (Wayamba University of Sri Lanka), UWU (Uva Wellassa University of Sri Lanka)

Annex 4: Area of Research Specialization

The researcher is asked to underline the relevant grant type, broad research area and discipline in column 1-3, and write the sub-discipline (specialization) in column 4.

Grant Type	Broad Research/Study Area	Discipline	Sub-discipline (specialization) e.g. Molecular biology, Social anthropology, Pediatrics, Civil engineering, Human resource management, Latex technology
STEM	Sciences Technology Engineering Medicine	Biology, Chemistry, Physics, Mathematics Statistics, Computer science, Medical and health sciences, Dental Surgery, Veterinary Science, Agriculture, Food sciences, Marine sciences, Environmental sciences, Animal sciences Engineering, Technology areas, Surveying, Town & country planning, Architecture	
HEMS	Humanities Education Management Social Sciences Law	Anthropology, Economics Sociology, Political science, Geography History, Philosophy Psychology, Demography Education subjects, Communication studies and media, Peace and conflict resolution, Language and literature, Cultural studies, Music, dance, arts and design, Management studies, Commerce, Hospitality and tourism, Religious studies, Visual & Technological Arts/Visual Arts	

Note: This is an indicative list of research areas and is not meant to be exhaustive.

Annex 5. Reviewer’s Guidelines for Five Scale Scoring

	Excellent (5)	Good (4)	Average/fair (3)	Poor (2)	Very poor (1)
Research team – competence of the research team	There are at least 10 publications and/or innovations (peer reviewed indexed journals, books or monographs published by recognized publishers) in total by the researchers.	There are at least 8 publications and/or innovations (peer reviewed indexed journals, books or monographs published by recognized publishers) in total by the researchers.	There are at least 6 publications and/or innovations (peer reviewed indexed journals, books or monographs published by recognized publishers) in total by the researchers.	There are at least 4 publications and/or innovations (peer reviewed indexed journals, books or monographs published by recognized publishers) in total by the researchers.	There are less than 3 publications and/or innovations (peer reviewed indexed journals, books or monographs published by recognized publishers) in total by the researchers.
Literature survey – Comprehensive ness of the literature survey	A thorough reference including most relevant and balanced coverage of most recent and important literature. Studies are compared and contrasted with controversies highlighted.	Less thorough and balanced coverage of most recent and relevant literature. Some controversies are highlighted.	Only some reference to most recent and relevant literature. Very briefly compare and contrast studies without controversies being highlighted.	Very brief reference to most recent and relevant literature. No comparing and contrasting. Controversies are not highlighted.	No reference to most recent and relevant literature.
	Has included material to very clearly show the development and limitation in the area.	Has included material to sufficiently show the development and limitations in the area.	Briefly show the development and limitations in the area without adequate reference/evidence.	Very briefly and inadequately show either development or limitations in the area without reference/evidence.	Does not show the development or limitations in the area.
The potential commercializable research product/process/	Provides a thorough explanation about the context for the research study.	Provides an adequate explanation about the context for the research study.	Provides a brief explanation about the context for the research study.	Very brief and inadequate explanation about the context for the research study.	Does not provide an explanation about the context for the research study.

idea for HEMS – strength of the relevant research product/process and rationale for the commercialization	The solution is very clearly communicated with relevant evidence and justifications.	While not very clear, the solution is adequately communicated with relevant evidence and justifications.	The solution is marginally identified and briefly communicated with relevant evidence only being briefly presented.	The solution is very vaguely identified and elusively communicated and evidence is not provided.	The solution is not identified nor clearly communicated.
Objectives- the preparedness/readiness of the proposal towards commercialization	Objectives are extremely innovative indicating new ideas, original and creative thinking. Has come to a formal agreement with the collaborative partner.	Objectives are adequately innovative with an element of originality and creative thinking. Has come to an informal agreement with the collaborative partner.	Objectives are slightly innovative with little originality and creative thinking. Has identified the collaborative partner.	Objectives are hardly innovative with very little originality and creative thinking. Has a plan to identify a collaborative partner	Objectives are not innovative at all without any originality or creative thinking. Has no idea about a collaborative partner
Methodology- the appropriateness of the proposed methodology	Describe the research actions and methodological aspects very clearly and rationally in full detail. Excellent description about actions with the collaborative partner.	Adequately describe the research actions and methodological aspects clearly and rationally. Good description about actions with the collaborative partner.	Describe the research actions and methodological aspects, rationality briefly. Some actions with the collaborative partner have been identified.	Vaguely describe the research actions and methodological aspects, rationality is not clear. Actions with the collaborative partner have not been identified.	Does not describe the research actions and methodological aspects well and rationality of relevant selections are not presented.
	Where relevant, has very clearly stated the actions which will be taken to obtain ethical clearance for the study.	Where relevant, has adequately stated the actions which will be taken to obtain ethical clearance for the study.	Where relevant, has briefly stated the actions which will be taken to obtain ethical clearance for the study.	Where relevant, has vaguely stated the actions which will be taken to obtain ethical clearance for the study.	Has not stated the actions which will be taken to obtain ethical clearance for the study, where relevant.

Time sequence of project actions - the chance of success of the project	Very clearly describe how the actions will be set up and how it will be implemented under a given time frame.	While not very clear, adequately describe how the actions will be set up and how it will be implemented under a given time frame.	Briefly describe how the actions will be set up and how it will be implemented under a given time frame.	Does not sufficiently describe how the actions will be set up and how it will be implemented under a given time frame.	Does not describe how the actions will be set up and how it will be implemented under a given time frame.
Economic/mark et and social relevance - the value of the commercializati on endeavor	Outcomes of the project have a high relevance and impact on the economy and society.	Outcomes of the project have considerable relevance and impact on the economy and society.	Outcomes of the project have some relevance and impact on the economy and society.	Outcomes of the project has little relevance and impact on the economy and society.	Outcomes of the project have a no relevance and impact on the economy and society.
	Has very clearly indicated the potential significance of the research output to the industries and to the HEI.	Has adequately indicated the potential significance of the research output to the industries and to the HEI.	Has briefly indicated the potential significance of the research output to the industries and to the HEI.	Has vaguely indicated the potential significance of the research output to the industries and to the HEI.	Has not indicated the potential significance of the research output to the industries and to the HEI.
Budget justification - the value for money and check whether the proposal is technically and financially fully self-contained	Very clearly indicate the budget justification for all consumable, equipment, civil works, data analysis etc. in the proposal.	Adequately indicate the budget justification for all consumable, equipment, civil works, data analysis etc. in the proposal.	Briefly indicate the budget justification for most of the consumable, equipment, civil works, data analysis etc. presented in the proposal. Justifications for few of the items are either not clear/valid or not presented.	Budget justifications for the items in the proposal are not clear or valid.	Budget justifications for the items in the proposal are not presented.
	Where relevant, very clearly stated how the resources available at the	Where relevant, adequately stated how the resources available	Where relevant, briefly stated how the resources available at the	Where relevant, has not clearly or justifiably stated how the	While relevant, has not stated how the resources available

	institution will be used for the implementation of the proposed research.	at the institution will be used for the implementation of the proposed research.	institution will be used for the implementation of the proposed research.	resources available at the institution will be used for the implementation of the proposed research.	at the institution will be used for the implementation of the proposed research.
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Annex 6. RIC– Key Steps



