



ReCAP
Research for Community Access Partnership



Development of a Business Plan for the African Roads and Transport Research Forum (ARTReF)

Inception Report



FC Rust, B Verhaeghe

CSIR South Africa

RAF2102A

September, 2016



The views in this document are those of the authors and they do not necessarily reflect the views of the Research for Community Access Partnership (ReCAP), the CSIR or Cardno Emerging Markets (UK) Ltd for whom the document was prepared

<i>Quality assurance and review table</i>			
Version	Author(s)	Reviewer(s)	Date
1	FC Rust, B Verhaeghe	L Sampson; J Cook	11/10/16

ReCAP Project Management Unit
Cardno Emerging Market (UK) Ltd
Oxford House, Oxford Road
Thame
OX9 2AH
United Kingdom



ReCAP Database Details: [Project Title]			
Reference No:	RAF2102A	Location	
Source of Proposal	Carno Emerging Markets (UK) Ltd	Procurement Method	Individual Framework
Theme	Cross cutting	Sub-Theme	
Lead Implementation Organisation	ReCAP	Partner Organisation	
Total Approved Budget	£23,000	Total Used Budget	
Start Date	15 September 2016	End Date	10 March 2016
Report Due Date	6 October 2016	Date Received	

Abstract

The African Roads and Transport Research Forum (ARTReF) was created to stimulate collaboration in research across the African continent to exploit synergy in individual research programmes, to facilitate sharing and learning between research organisations and therefore to improve the outputs of the programmes and also the uptake of the results of the programmes.

The aim of this project is to develop a business plan for ARTReF that would ensure that it meets its mandate and remains sustainable in the long term.

Key words

African Roads and Transport Research Forum; business plan.

RESEACH FOR COMMUNITY ACCESS PARTNERSHIP (ReCAP)
Safe and sustainable transport for rural communities

ReCAP is a research programme, funded by UK Aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. The ReCAP programme is managed by Cardno Emerging Markets (UK) Ltd.

See www.research4cap.org

Acknowledgements

Acronyms, Units and Currencies

\$	United States Dollar (US\$ 1.00 ≈ provide conversion to local currencies)
AFCAP	Africa Community Access Partnership
ASCAP	Asia Community Access Partnership
ARTReF	African Road and Transport Research Forum
FEHRL	Forum of European Highway Research Laboratories
R&D	Research and Development
RECAP	Research for Community Access Partnership
UK	United Kingdom (of Great Britain and Northern Ireland)
UKAid	United Kingdom Aid (Department for International Development, UK)

Contents

Abstract	3
Key words	3
Acknowledgements	5
Acronyms, Units and Currencies	5
1 Executive Summary	7
2 Introduction	7
3 Background	7
4 Approach and Methodology	8
5 Inception Phase	8
5.1 Status Quo of ARTReF	8
5.1.1 Aims and Objectives of ARTReF	8
5.1.2 Structure of ARTReF	9
5.1.3 Roles and Responsibilities	10
5.1.4 Current Membership of ARTReF	12
5.1.5 R&D, Capacity Building and Skills Development Needs	13
5.2 Initial Gap Analysis	14
5.2.1 Structure of ARTREF	14
5.2.2 Research Focus Areas	15
5.2.3 Collaboration	15
5.2.4 Potential Funding Models	16
5.2.5 Growing the membership	16
6 Revised Workplan and Deliverables	16
7 Management Approach	16
8 Budget and Resources	16
9 Community Access	16
10 M&E Plan	17
11 Risks	17
Annex A: Updated Workplan	18
Annex B: Contribution to ReCAP Log Frame	19
Annex D: Risk Matrix	23
Annex E: References	24
Annex F: Technical Inputs	25
Annex G: Revised Budget	26

1 Executive Summary

The African Roads and Transport Research Forum (ARTReF) aims to stimulate collaboration in research across the African continent to exploit synergy in individual research programmes, to facilitate sharing and learning between research organisations and therefore to improve the outputs of the programmes and also the uptake of the results of the programmes.

The aim of this project is to develop a business plan for ARTReF that would ensure that it meets its mandate and remains sustainable in the long term.

2 Introduction

The African Road and Transport Research Forum (ARTReF) was created on a model similar to that of the Forum of European Highway Research Laboratories (FEHRL). FEHRL is an international association comprising over 30 national research and technical institutes from across Europe. Associates from non-European countries provide FEHRL with strong links to the considerable research capacity available globally.

FEHRL's mission is to promote and facilitate collaboration on road research and provide high quality information and advice on technologies and policies related to roads with the specific objective to, through the specification and delivery of research:

- Provide scientific input to European and national government policy on highway engineering and road transport matters
- Create and maintain an efficient and safe road network in Europe
- Increase innovation in European road construction and road-using industries
- Improve the energy efficiency of highway engineering and operations.
- Protect the environment and improve quality of life.

The African continent has very specific and diverse challenges and needs road infrastructure and transport systems that address these. Typical examples are improved access to facilities in rural areas, job creation and poverty alleviation. In addition, the African continent is very diverse with some strong economies in the North and the South compared to a number of other areas that have major challenges with respect to poverty and its alleviation. The local conditions in terms of weather, geology, existing infrastructure etc. also vary markedly across the continent and the norms and standards used for road and transport system design vary significantly.

To ensure the effective provision, maintenance and management of roads and transport systems, and the effective provision of transport services, a significant amount of research and development (R&D) is required to develop local solutions that take these local conditions into consideration. It is also necessary to develop cadres of highly-skilled roads and transport professionals that can implement these solutions and manage the system effectively. Effective cooperation in this regard is best achieved through a network of research organisations throughout Africa that can develop the required solutions in collaboration whilst sharing the learning. The African Roads and Transport Research Forum (ARTReF) was created for this purpose. Collaboration of this nature will provide R&D sustainable critical mass in specific focus areas throughout the continent.

3 Background

Whilst some initial funding for ARTReF has been provided by the Research for Community Access Partnership (ReCAP) through the Africa Community Access Partnership (AfCAP), the long-term aim is that the Forum will be self-sustainable and play a significant role in the

development of solutions for problems experienced with roads and transport on the African Continent. To this end, ReCAP has called for the development of a business plan for ARTReF that would address its aims, objectives, function, income models and sustainability.

4 Approach and Methodology

The business plan will be developed through:

- A review of all the existing ARTReF documentation with recommendations for modification if required;
- The development of a draft plan that will cover
 - The vision and strategic objectives of ARTReF;
 - The ARTReF mandate and operational procedure;
 - Specific functions to be undertaken by ARTReF;
 - The governance structure of ARTReF;
 - The operational structure of ARTReF;
 - Resource requirements in terms of personnel, facilities and budget to manage the operations of ARTReF, and
 - Performance measures for ARTReF.

The business plan and business model will be discussed with ARTReF members for input. The draft business plan will then be presented to the ARTReF Executive Committee for inputs and modifications. Progress towards the business plan will be presented at the ARTReF meeting on 17 November, 2016. Finally the business plan will be presented to the ARTReF General Assembly for approval.

5 Inception Phase

The inception phase included review of existing ARTReF documents and discussions with peers, and the preparation of an inception report. Pertinent aspects of the current status of ARTReF are discussed below.

5.1 Status Quo of ARTReF

5.1.1 Aims and Objectives of ARTReF

Supported by AfCAP through funding from the UK Department for International Development (DFID), thirteen African countries came together in February 2015 to explore means by which to stimulate cooperation in research and innovation in roads and transport in Africa. This led to the establishment of the African Road and Transport Research Forum (ARTReF). The CSIR was asked to perform the role of Interim Secretariat to support the establishment of ARTReF.

The **aims** of ARTReF are *to promote research and innovation in roads and transport through networking, coordination, collaboration, knowledge transfer and the provision of advice on policies for sustainable development in Africa.*

ARTReF's current **Mission statement** reads: *ARTReF is to promote research and innovation in roads and transport through coordination, networking, collaboration, knowledge transfer, and advice on policies for sustainable development in Africa.*

The main **objectives** of ARTReF are:

- To promote collaboration and coordination of road and transport research policy. This would include:
 - Lobbying for regional harmonisation;
 - Identification of strategic research needs;

- Facilitation of processes for Members to jointly seek funding through common research proposals.
- To develop and manage a knowledge management system for its members that would include:
 - A database of transport information and documentation;
 - A network to share research experience locally and internationally;
 - Lobbying for acceptance and implementation of new innovations.
- To lobby for more research funding (especially from governments) including demonstration of the value of research.
- To promote academic growth and training of research personnel including interface with academic institutions.
- To assist members in establishing and sustaining research capacity.
- To facilitate science and technology development through research and innovation in Africa that would include:
 - Coordination of regional applied research projects, including demonstration projects;
 - Facilitation of research programmes for Africa.
- To promote networking of resources and technical expertise at regional level
- To advise road authorities on road design, construction and maintenance, and transport services.

The main **areas of collaboration** identified for ARTReF are:

- Regional, strategic research programmes and projects
- Concept notes for regional projects
- Identification of funding opportunities
- Ensure linkages to regional structures and organisations for improved lobbying
- Formulation of research strategies and policies, and implementation plans for the Forum
- Influencing national roads and transport policy
- Scientific validation and peer review
- Capacity building
- Knowledge sharing of research outputs

5.1.2 Structure of ARTReF

ARTReF had its first General Assembly meeting on 15 May 2015 in Bulawayo, Zimbabwe, its second meeting on 18 August 2015 in Sun City, South Africa, and its third meetings on 17 March 2016 in Mombasa, Kenya.

At the second meeting, Executive Committee membership were proposed and approved by the ARTREF General Assembly. The members were selected to represent three main regions:

- East Africa: Ethiopia and Kenya;
- Southern Africa: Botswana and Zimbabwe; and
- West Africa: Ghana and Sierra Leone.

The current Executive Committee members are:

- Mr Alemayehu Endale, Director of Research & Development, Ethiopian Roads Authority
- Mr Stephen K Kogi, Chief Engineer, Ministry of Transport & Infrastructure, Research Department, Kenya
- Dr Adewole Oladele, Transport Specialist, Botswana Transportation Research Centre
- Mr Actor Zondo, Chief Research Officer, Ministry of Transport, Zimbabwe

- Mr Francis Afukaar, Head of Traffic & Transportation, Building & Road Research Centre, Ghana
- Mr Tamba Amara, Chief Engineer, Sierra Leone Roads Authority

At the second meeting, Eng. Stephen K Kogi, Kenya, was elected President and Chairman of the Executive Committee, while Eng. Alemayehu Endale, Ethiopia, was elected Vice-President. The interim Articles of Association were also tabled and accepted.

The proposed structure of ARTReF at the time is shown in Figure 1 below.

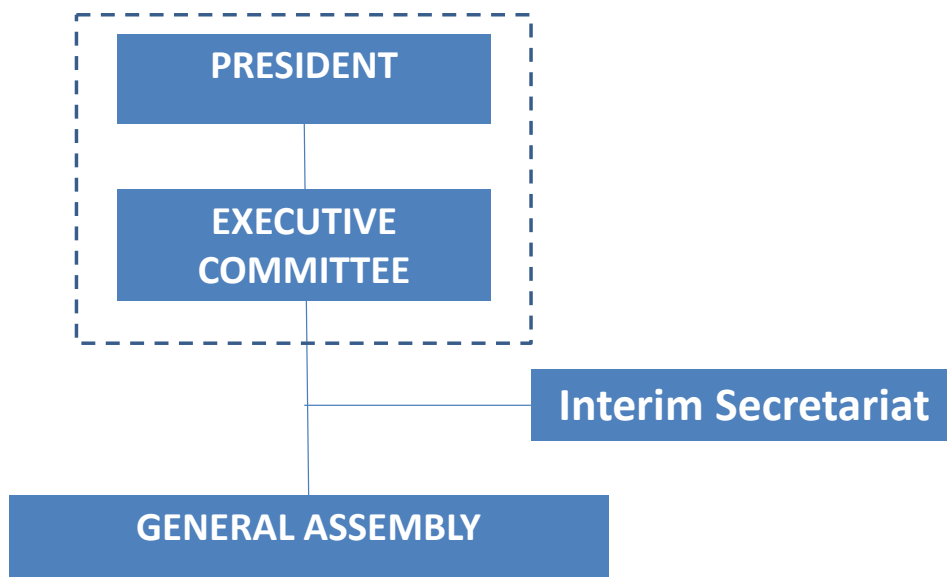


FIGURE 1: Structure of ARTReF

5.1.3 Roles and Responsibilities

The following roles and responsibilities were assigned to the President, vice-President, Executive Committee and the Secretariat (once formally established):

President (and vice-President):

- The President and vice-President act as members of the Executive Committee and will provide supervisory oversight ensuring that all actions and decisions taken by the Executive Committee and the General Assembly are consistent with the Articles of Association and the (yet to be developed) ARTReF Rules of Procedures;
- The President validly represents ARTReF judicially and extra judicially (see also *Executive Committee*);
- Convenes the General Assembly by written and signed notice to all Members, also special meetings of the General Assembly at the request of at least half the Members. The convening notice shall state the agenda for the meeting;
- Presides over the meetings of the General Assembly;
- Approves and signs the minutes of the General Assembly;
- Receives and puts valid applications for ARTReF membership on the agenda of the General Assembly;
- Receives resignation from Members of ARTReF;
- Receives notifications for proxies from Members not able to attend the General Assembly;
- Is informed of any conflict of interest that might impact on voting.

Executive Committee:

- Is presided over by a Chairperson;
- Its members are appointed by the General Assembly for a renewable period of three years;
- Will meet at least two times a year and at other times if necessary;
- Its members are not remunerated;
- Any of its members can be suspended or dismissed by the General Assembly if found to be contravening the Articles or Rules of Procedure of ARTReF (latter still to be developed);
- Has the residual powers within ARTReF and manages ARTReF;
- Has the powers to do and perform whatever shall be necessary or useful for the realisation of the objectives of ARTReF, save to the extent of the powers reserved to the General Assembly;
- Has the powers to represent the interests of the General Assembly between its meetings;
- The Chairman or two members of the Executive Committee validly represent ARTReF judicially and extra judicially (see also *President*);
- Draws up the Rules of Procedure of ARTReF and proposes any changes to be made to those;
- Prepares the budget and financial accounts of ARTReF;
- Presents annually the business plan, budget and financial accounts to the General Assembly for approval;
- Arranges for activity reports to be presented to each General Assembly meeting covering, at a minimum, actions taken and results achieved since the previous meeting, and forward activity plans;
- Seek sources of funding for sustaining the operations of ARTReF (in association with the Secretariat);
- Calls for General Assembly meetings to be held;
- Co-approves and co-signs the minutes of the General Assembly;
- Can suspend memberships of Members acting in ways prejudicial or contrary to the objectives of ARTReF;
- Can propose a Secretary-General, for approval by the General Assembly.

Secretariat and Secretary-General:

- Once appointed, the Secretary-General will be responsible for the day-to-day operations of ARTReF and the office of ARTReF. These shall include:
 - Accomplishing all necessary, useful and reasonable actions and requests in realisation of the objectives of ARTReF as proposed and agreed on by the General Assembly, the President and the Executive Committee;
 - Preparation of required documentation (agenda, briefing notes, background information, official documents, minutes, etc.) for all meetings of the Association based on the direction and instructions provided by the President and/or the Executive Committee;
 - Provision of reports and information to the ARTReF General Assembly on the current state of research cooperation, and on specific research topics/projects;
 - Preparation and reporting of meetings of the General Assembly and Executive Committee;
 - Carry out actions arising from these meetings;

- Providing support to the President (and, in future, the Treasurer) of ARTReF in carrying out their duties;
- Providing individual support to the Executive Committee in carrying out their duties;
- Execution of ARTReF responsibilities in respect of legal and financial obligations (registration and employment matters, financial payments, etc.) and the operations of the office;
- Preparation of ARTReF publications (research reports, annual reports, technical reports, management notes) for internal free distribution to ARTReF members and other selected organisations, subject to the approval of the President and/or the Executive Committee;
- Liaison with Members of ARTReF on provision of information for the ARTReF Knowledge Centre;
- Administration of ARTReF website and Knowledge Centre;
- Liaison with other organisations, associations and forums interested in the activities of ARTReF;
- Identification and development of opportunities for carrying out cooperative research in support of ARTReF objectives;
- Support (information gathering, dissemination, liaison, etc.) to those Member institutes/organisations wishing to participate in cooperative research;
- Liaison assistance to project consortia;
- Participation, where appropriate, in suitable proposals for research-related activities.

ARTReF is in need of a more formal management structure with dedicated staff to ensure that the objectives are reached. This will also require an income stream to cover cost of operations and events.

5.1.4 Current Membership of ARTReF

The **current members** of ARTReF are national road and/or transport research entities, representing the following African countries:

- Botswana;
- Democratic Republic of the Congo;
- Ethiopia;
- Ghana;
- Kenya;
- Malawi;
- Mozambique;
- Namibia;
- Nigeria;
- Sierra Leone;
- South Africa;
- South Sudan;
- Tanzania;
- Zambia, and
- Zimbabwe.

Three additional countries have indicated their interest in joining ARTReF, namely Lesotho, Rwanda and Uganda. The ultimate aim is to incorporate all African countries in the membership base of ARTReF. All ARTReF members congregate twice a year at the ARTReF General Assembly to determine the priorities and areas of activity for ARTReF.

5.1.5 R&D, Capacity Building and Skills Development Needs

At the second meeting of the ARTReF General Assembly, a survey was launched amongst the ARTReF members to identify the main challenges that each country is facing in providing acceptable levels of road infrastructure and transport services to satisfy their socio-economic objectives. The main challenges identified by the members to date are the following:

- Provision of sustainable transport infrastructure in a changing climate
- Disparity in materials testing standards across Africa
- Cost-effective upgrading methods and technologies for unpaved roads, including:
 - Optimal use of local materials in road construction
 - Low-cost surfacings for rural roads
- Cost-effective maintenance strategies
- Pavement structures and revised material specifications able to cope with the impact of increasing traffic volumes and axle loading, and changes in tyre configurations

From the list of (preliminary identified) main challenges, it is clear that there is significant scope to strengthen current levels of synergy between ARTReF and AfCAP, and to establish future cooperation between ARTReF and DFID's High Volume Transport Applied Research Programme once this programme has been initiated.

Specific research topics raised by the member countries are:

- Regional needs:
 - Regional climate vulnerability and adaptation programme;
 - Regional sustainable maintenance programme, and
 - Harmonisation and updating of materials testing standards.
- Mozambique:
 - Use of Road Works to enhance Community Water Supplies in Mozambique
 - Protocols for improving the proficiency of material testing laboratories
 - Continued monitoring of road trials
 - Mapping of materials for road construction and development of a database
 - Implementation of a National/Regional Strategy for Vehicle Overloading Control
 - Further exploitation of results from previous research projects and practical implementation of results
- Nigeria:
 - Development of light equipment for rural road construction in Nigeria
 - Development of alternative rural road surfacings
 - Development of a design manual and training modules for rural roads
 - Development of a performance monitoring framework for community-based rural roads maintenance contracting
- Sierra Leone:
 - Utilisation of alternative materials in road construction
 - Influence of axle loading on the deterioration of rural / feeder roads in Sierra Leone
 - Investigation into the causes and possible preventive measures of premature pothole formation
 - The impact of inadequate drainage structures in road construction
- Tanzania
 - Road trials, demonstrations and monitoring
 - Optimisation of delivery methods for the maintenance of local government roads

- National road material and aggregate inventory and database
- Use of local and alternative materials in roads
- Climate resilience
- Guidelines for design and construction of stone arch and timber bridges
- Enhancement of urban transport in emerging cities
- Zimbabwe:
 - Sustainable transport infrastructure in a changing climate for the African region
 - Self-cementing mechanisms in laterites used in low-volume roads
 - Updating of road design, construction and materials manuals
 - Camber grading/shaping options for unpaved road construction and maintenance

In addition to the above technical topics, the following were also raised as capacity building and skills development topics:

- A national research centre management training programme with the purpose to facilitate the development of appropriate and the necessary capacity to manage the research centres through cooperation with, and learning from, International Research Institute's experience and capability. The key impacted group will be Middle Managers who will be sensitised to research centre management, operational management and research programme management.
- A Regional Capacity Building Programme with the purpose to adopt a regional approach to the building of sustainable capacity, predominantly through research centres and through the establishment of a train-the-trainer programme. Activities could include: training courses, study tours, distance/e-learning, mentoring, secondments, joint research projects, post-graduate research.

An interim website was created for ARTReF at www.artref.co.za.

5.2 Initial Gap Analysis

An initial analysis of the Status Quo of ARTReF highlighted a few areas that may need some attention. These are discussed below and will be followed up during the development of the business plan.

5.2.1 Structure of ARTREF

The current ARTReF structure lacks a Permanent Secretariat that can administer and drive the objectives of ARTReF. The function of such a secretariat could include inter alia the following:

- To administer ARTReF funding;
- To organise Executive Committee and General Assembly meetings and other events and to keep minutes of these;
- To assist with obtaining funding and sponsors for ARTReF;
- To assist with the management of co-operative research programmes;
- To organise workshops, seminars and conferences in line with the Members' needs;
- To facilitate inter-research group discussions to maximise the benefit obtained from research programmes;
- To create and update the permanent ARTReF website;
- To draw up procedures for the management of ARTReF;
- To assist with increasing the membership of ARTReF; and
- To prepare reports and report back to stakeholders and funders on the activities of ARTReF.

The secretariat would thus ensure that there is sufficient momentum to render ARTReF effective.

5.2.2 Research Focus Areas

Currently the research topics are a compilation of projects identified by individual countries. This needs to be analysed further and grouped into Research Focus Areas that can benefit more than one country. In this manner, more benefit in terms of learning, implementation and final impact will be achieved. These can be structured through the use of tools such as the technology tree that clearly indicates the technology layers from research infrastructure to key solution that will provide the required coherence in the programme with individual roles clearly spelled out. Figure 2 shows a schematic diagram of a technology tree.

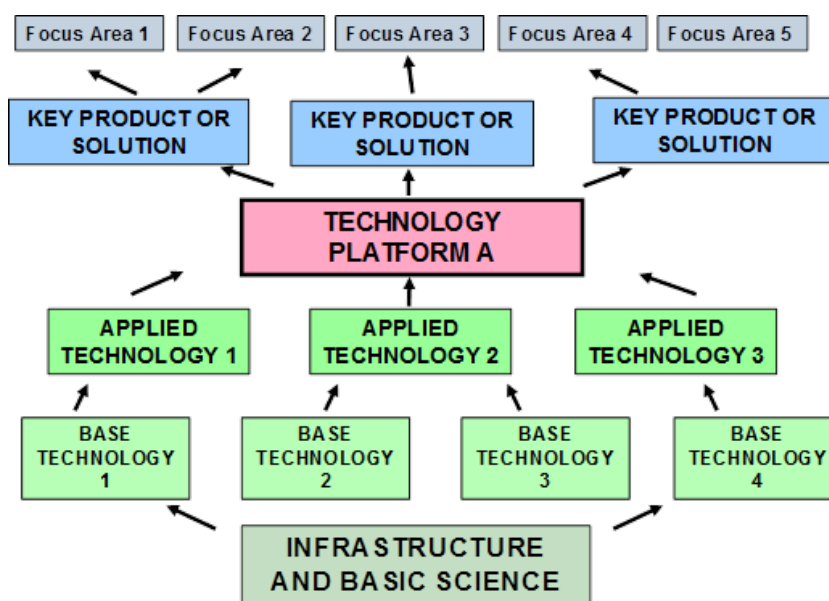


FIGURE 2: Schematic diagram of technology tree

5.2.3 Collaboration

One of the main objectives of ARTReF and also of the AfCAP programme is to ensure collaboration between researchers and research organisations. To this end the following should be considered:

- Creating a collaboration platform using software such as *Vibe*;
- Stimulating collaboration by creating incentives such as dedicated (sourced) research funding available only to teams of research organisations on the African continent to create critical mass;
- Identifying the critical core capabilities required for a roads and transport research programme and then obtaining sponsorship to develop these capabilities in the most appropriate research centres on the continent. These capabilities should then be available to and accessible to other countries on the continent;
- Considering the creation of a special African Roads and Transport Research Conference or, alternatively, dedicated sessions in existing African conferences (e.g. Technology Transfer Conference, Southern African Transport Conference, etc) where collaborative research is published and presented.

5.2.4 Potential Funding Models

ARTReF will require a budget, and sponsorship or membership fees to cover its costs. This concept needs to be developed. Some initial thoughts in this regard are that one can use a transitional business model in a combination of sponsorship and membership fees. It is envisaged that the business model for ARTReF will grow as follows:

- Initial period of 2 years: Full sponsorship model
- Second period of two years: 50% sponsorship and 50% membership fees
- Third period: 15% sponsorship and 85% membership fees

The options of the business model should be discussed in detail with the members to ensure that the most optimum model is selected. Membership fees could also be varied based on the GDP of the country to ensure that smaller countries can participate.

5.2.5 Growing the membership

The membership of ARTReF should be grown to ensure future viability of ARTReF. It may be necessary to create different classes of membership to allow countries that do not have Roads and Transport Research Centres to become associate members and share in the benefit of the programme until such time that they can become full members.

6 Revised Workplan and Deliverables

Apart from the start date, the work plan and deliverables have not changed from the project proposal. The work plan is given in Annex A. The start date has been changed from 1 October to 15 September 2016.

The deliverables for the project are:

- A short inception report after three (3) weeks, outlining the scope of the project.
- A draft business plan and budget after sixteen (16) weeks for submission to the Executive Committee
- A final business plan and budget after twenty-four (24) weeks for presentation and approval by the ARTReF General Assembly.

7 Management Approach

Chris Rust will take the lead in the project, supported by Benoît Verhaeghe, as planned in the proposal. The outputs of the project will be discussed with AfCAP/ReCAP on a regular basis. Interactions will take place with the Executive Committee members of ARTReF to ensure the feasibility and adoptability of the business plan and funding model(s). Final decision making will be at the ARTReF Executive Committee and General Assembly meetings.

8 Budget and Resources

The team will be as per the proposal, Chris Rust leading with support from Benoît Verhaeghe. The budget will remain unchanged.

9 Community Access

If ARTReF functions well and is sustainable, this will create the R&D critical mass through collaboration and learning that will produce the key solutions required to ensure that countries can improve their design and provision of rural and urban roads and transport systems.

10 M&E Plan

The following progress monitoring processes will be utilised:

- Discussions with AfCAP/ReCAP on the progress of the project against targeted deadlines and milestones;
- Discussions with the Executive Committee of ARTReF to test the basis of the business plan and the proposed funding models(s), and
- Final approval by the ARTReF General Assembly.

11 Risks

The main risk will be the timing associated with obtaining inputs from all stakeholders on the draft business plan before finalising it. The team will do its best to ensure the ARTReF member respond timeously to requests in order to provide inputs into the project.

Annex A: Updated Workplan

Activity Gantt Chart

Activity	Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Inception Report		Red	Red	Green																						
Draft Business Plan					Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Green									
Final Business Plan																		Red	Red	Red	Red	Red	Red	Red	Green	
-																										

Key –Activity Type

	Advisory Input
	Milestones
	Workshops

Annex B: Contribution to ReCAP Log Frame

Intervention Logic	Indicator	Source of Verification	Baseline (Date)	Milestone 1 31 July 2016	Milestone 2 31 July 2017	Milestone 3 31 July 2018	End of Project Target (Date)	Assumptions
<p>Outcome:</p> <p>Sustained increase in evidence base for more cost effective and reliable low volume rural road and transport services, promoted and influencing policy and practice in Africa and Asia</p>	<p>1. SUSTAINABILITY: Partner Government and other financiers co-funding research with ReCAP. Contributions in kind (K) and Core Contributions (C)</p>	N.A.						
	<p>2. Concrete examples of change (applied or formally adopted), influenced by ReCAP research that will be allied to #km of road in focus countries.</p>	N.A.						
	<p>3. Number of citations in academic articles of ReCAP peer reviewed articles and/or working papers, conference papers etc.</p>	N.A.						
<p>Output 1:</p> <p>RESEARCH and UPTAKE: Generation, validation and updating of evidence for</p>	<p>1.1 LVRR: Number of peer reviewed papers generated from ReCAP supported or related LVRR research projects</p>	N.A.						

Intervention Logic	Indicator	Source of Verification	Baseline (Date)	Milestone 1 31 July 2016	Milestone 2 31 July 2017	Milestone 3 31 July 2018	End of Project Target (Date)	Assumptions
effective policies and practices to achieve safe, all-season, climate-resilient, equitable and affordable LVRR and transport services in African and Asian countries. (Low Volume Rural Roads : LVRR / TS – Transport Services)	made available in open access format.							
	1.2. TS: Number of peer reviewed papers generated from ReCAP supported or related LVRR research projects made available in open access format.	N.A.						
	1.3 Engineering Research: National policies, manuals, guidelines and/or research outputs that have been fully incorporated into Government/Ministerial requirements, specifications and recommended good practice as a result of ReCAP engineering research (including climate change adaptation and AfCAP and SEACAP adaptations). To include introduction of new policies and modification to existing policies.	N.A.						

Intervention Logic	Indicator	Source of Verification	Baseline (Date)	Milestone 1 31 July 2016	Milestone 2 31 July 2017	Milestone 3 31 July 2018	End of Project Target (Date)	Assumptions
	<p>1.4 TRANSPORT SERVICES Research: National policies, regulations and/or practices for rural transport services modified or introduced as a result of ReCAP research (including road safety and gender and AFCAP and SEACAP research)</p> <p>To include introduction of new policies and modification to existing policies.</p>	N.A.						
	<p>1.6. LVRR and TS information generated for dissemination, and disseminated, that is not peer reviewed. Total to include research papers, final research reports, workshop reports, manuals and guidelines.</p>	N.A.						
Output 2: CAPACITY BUILDING: The building of sustainable capacity to carry out research on low volume	2.1. African / Asian experts or institutions taking lead roles in ReCAP Research Projects.	N.A.						

Intervention Logic	Indicator	Source of Verification	Baseline (Date)	Milestone 1 31 July 2016	Milestone 2 31 July 2017	Milestone 3 31 July 2018	End of Project Target (Date)	Assumptions
rural roads, and rural transport services in African and Asian countries.	2.3. Research projects with female researcher inputs at senior technical level.	N.A.						
Output 3: KNOWLEDGE: Generated evidence base of LVRR and transport services knowledge is widely disseminated and easily accessible by policy makers and practitioners (including education and training institutions).	3.2. ReCAP generated knowledge presented and discussed at high level international development debates and conferences	N..A.						
	3.3.ReCAP generated knowledge disseminated through significant workshops and dedicated training, virtually or physically, that are rated by participants as effective..	N.A.						

Annex D: Risk Matrix

Programme Risk Assessment and Mitigation Matrix				Very High	High	Medium	Low
Potential Risk	Risk Grading ¹		Description of risk	Proposed Management and mitigation actions			
	Probability	Impact					
A. Programme Management Risks							
A1: Delay due to slow response in comments on draft plan	M	M	The response from stakeholders such as membership countries and the executive committee may be slower than expected with the result that the project may be delayed.	Push for stakeholders to meet deadlines before the presentations are made to the Executive Committee and the General Assembly.			
B. Risks associated with Research							

¹ **Probability** = the likelihood of this risk occurring despite the management and mitigation activities being in place. **Impact:** = the effect on the ability of the programme to achieve its objectives without major revision or review.

Annex E: References

None.

Annex F: Technical Inputs

Technical Adviser Input schedule

Annex G: Revised Budget

Budget will remain as per the proposal.