ケニア共和国
アフリカ型イノベーション振興・
JKUAT/PAU/AU ネットワーク
プロジェクト
事業完了報告書

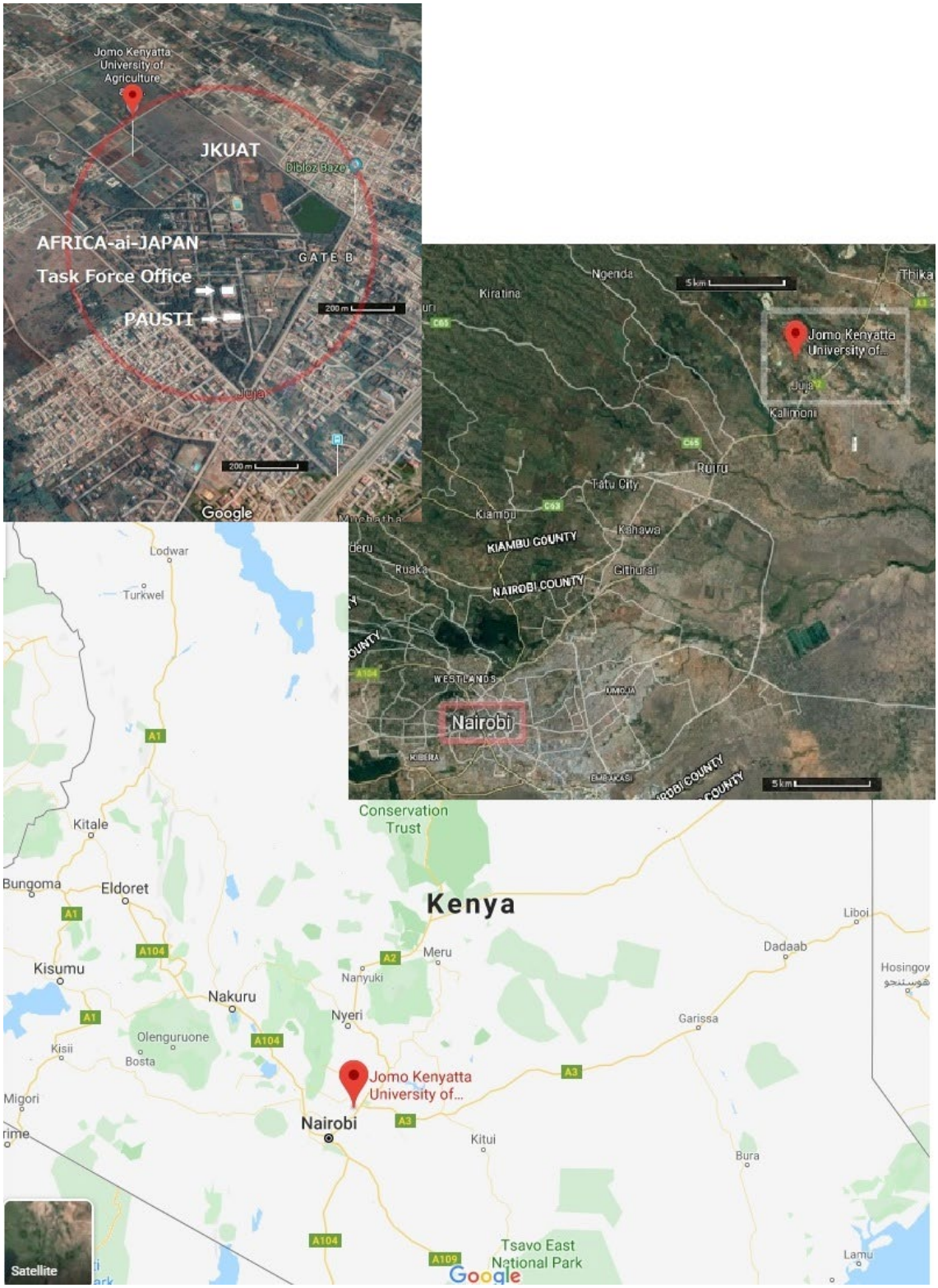
令和 4 年 4 月
(2022 年 4 月)

独立行政法人
国際協力機構（JICA）

人間
JR
22-048

目　次

プロジェクト活動　位置図



出所：Google –地図データ（2013 年）

略　語　表

略　語	英　語	日　本　語
ai	African Innovation	アフリカ型イノベーション
AU	Africa Union	アフリカ連合
AUC	African Union Commission	アフリカ連合委員会
CeSEM	Center for Scientific Equipment Maintenance	機材維持・管理センター
E-JUST	Egypt-Japan University of Science and Technology	エジプト日本科学技術大学
iCB	Innovation Center for Bio-resources	理学系サブタスクフォース
iCCATS	Innovative Center for Computing and Technological Solutions	コンピューター科学系サブタスクフォース
iCEOD	ICT Centre of Excellence and Open Data	情報通信技術・オープンデータセンター（JKUAT の ICT 拠点センター）
iCMoB	Innovation Center for Molecular Biology and Biochemistry	分子生物・生化学系サブタスクフォース
iODaV	Innovative Open Data and Visualization	情報科学系サブタスクフォース
iPDeC	Innovation Center for Product, Development and Commercialization	製品開発・商業化サブタスクフォース
iPIC	Innovation and Prototyping Integrated Centre	工学系サブタスクフォース
JCC	Joint Coordination Committee	合同調整委員会
JICA	Japan International Cooperation Agency	独立行政法人 国際協力機構
JKUAT	Jomo Kenyatta University of Agriculture & Technology	国立 ジョモ・ケニヤッタ農工大学
Kshs.	Kenyan Shilling	ケニア・シリング（現地通貨の単位）
PAU	Pan African University	汎アフリカ大学
PAUSTI	Pan African University, Institute of Basic Sciences, Technology and Innovation	（アフリカ東部）汎アフリカ大学 基礎科学・技術・イノベーション科学院
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PO	Plan of Operation	活動計画
SAFARI	Small Animal Facility for Research and Innovation	小動物実験施設
STI	Science, Technology and Innovation	科学技術イノベーション

第 1 章　プロジェクトの概要

1-1　基礎情報

(1)	対象国	ケニア
(2)	プロジェクト名：	和文：　アフリカ型イノベーション振興・JKUAT/PAU/AU ネットワークプロジェクト 英文：　AFRICA-ai- JAPAN Project：African Union - african innovation - JKUAT and PAUSTI Network Project
(3)	上位目標：	アフリカにおいて科学技術イノベーション（STI）分野の産業人材が育成される
(4)	プロジェクト目標：	JKUAT/PAUSTI で STI を生みだす学生を輩出する
(5)	成果：	成果 1：JKUAT/PAUSTI の STI 分野の研究環境が整備される 成果 2：JKUAT/PAUSTI においてケニア及びアフリカに特徴的な STI に繋がる活動（研究等）が実践される 成果 3： JKUAT/PAUSTI の研究・実践活動及びその成果がアフリカ内外の高等教育機関や産業界等に情報発信される
(6)	実施期間：	2014 年 6 月-2020 年 6 月
(7)	実施機関：	国立ジョモ・ケニヤッタ農工大学　Jomo Kenyatta University of Agriculture and Technology（JKUAT）
(8)	プロジェクトサイト	PAU 基礎科学・技術・イノベーション学院　The Pan African University, Institute of Basic Sciences, Technology, and Innovation (PAUSTI) 国立ジョモ・ケニヤッタ農工大学　Jomo Kenyatta University of Agriculture and Technology (JKUAT)
(9)	ターゲット　グループ	PAUSTI で教育を担う JKUAT の教員及び技官

1-2　背景

アフリカの多くの国において、産業発展や工業化は政策目標となっているが、科学技術イノベーション（STI）分野を担う人材、予算、質を伴った実践の不足等により、それら政策実現は進んでおらず、加えてアフリカにおいては、頭脳流出の問題が指摘されている。

このような状況の下、アフリカ域内の社会開発を担う人材を養成・確保するためには域内の高等教育の強化が重要なため、アフリカ連合委員会（以下、AUC）は、汎アフリカ大学（Pan African University、以下PAU）構想を2008年に立ち上げた。PAUはアフリカを5つの地域（北部、西部、中部、東部、南部）に分け、各地域に対象分野、ホスト国・ホスト大学・支援パートナー国（Lead Thematic Partner、以下LTP）を設け、アフリカ大陸内で多国籍の修士・博士課程の学生を指導する大学院大学である。

PAUの東部拠点として、ケニアをホスト国とし、「科学技術イノベーション（STI）」を対象分野とする「PAU基礎科学・技術・イノベーション学院」（以下、PAUSTI）を、国立ジョモ・ケニヤッタ農工大学（以下、JKUAT）キャンパス内に2012年10月に開講した。

PAUSTIのホスト大学であるJKUATは、日本が1978年から2000年まで継続的な支援を行ってきた歴史がある。1981年に農学・工学分野の短期大学（カレッジ）として開講して以降、日本の支援により着実に成長し、1988年にはケニヤッタ大学の分校（University College）として大学に昇格した。1994年には総合大学とな

り、その後、親大学として4つのカレッジを大学に昇格（2013年2月）させるなどし、東部アフリカにおける中心的な大学の一つに成長している。その一方で、同大学の現状は、大学運営・教育については十分な能力・経験を有するものの、教員の異動により、質の高い教員が引き抜かれる傾向にあり、また、施設・機材の老朽化が進んでいることなどから、イノベーション活性化に向けた研究活動の推進体制に課題を抱えている。したがって、PAUSTIを運営管理するために、研究環境の整備・強化が必要とされた。

日本政府は、AUからの要請に応じ、2013年1月にPAUSTIの支援パートナー国になり、AUCと2者間の覚書を締結した。また、2014年1月には、PAUSTIへの協力に関し、AUC、日本政府及びケニア政府の3者間で覚書が締結された。ケニア政府は、PAUSTIの持続的運営のため、JKUATとPAUSTIの研究環境の整備・強化を支援する「アフリカ型イノベーション振興・JKUAT/PAU/AUネットワークプロジェクト」を我が国に要請し、2014年6月からプロジェクトが開始された。

2016年11月に「中間レビュー調査」が行われ、プロジェクト成果を高めるための提言[1]がなされた。また、2018年11月に開催された第4回JCCにてプロジェクトの1年間の延長について関係者間で合意し、2019年1月に延長が決定され、2020年6月に6年間のプロジェクトが終了となった。

1-3　PDM とその変遷

PDMは、第2回JCC（2016年11月開催）で承認されたバージョン1が最終版となっている。中間レビュー時（2016年11月）に指標が最終合意され、PDM（指標）が設定され、同時期に開催された第2回JCCで新PDM（バージョン1）が承認された。その後、更新はされていない。

1-4　活動実施スケジュール

PO も PDM 同様に第 2 回 JCC にて承認されたが、プロジェクト期間の 1 年間延長に伴い、新 PO（バージョン 2）（改定版）が 2018 年 11 月から有効となった。バージョン 1 からの変更箇所は、プロジェクト期間（当初計画のプロジェクト期間 2014 年 6 月～2019 年 6 月から一年間延長し、2020 年 6 月までに変更）、その延長に伴う一部の活動（活動 1-3、1-5、1-6、1-7、1-8、2-2、2-8、2-9、2-10、2-11、2-12、3-1、3-2）計画の変更であった。バージョン 2 に基づく活動実施実績については別添 Project Completion Report の Annex.1 Plan of Operation（PO）で示すとおり。

[1] （1）投入の効果的な活用による研究成果の発現、（2）早急なCeSEM の設立と活動開始、（3）研究成果の実践としての商業化・実用化の促進、（4）学術雑誌への論文掲載の促進、（5）PAUSTI 棟の建設とiCMoB（Innovation Centre for Molecular Biology and Biochemistry）による研究活動の促進、（6）PAUSTI の卓越した研究拠点（Center of Excellence：COE）としての機能強化、（7）STI の再整理・具体化、関係者間の認識共有、（8）学生育成の具体的なイメージ明確化、（9）PDM の活用による外部者への理解促進、（10）報告書による進捗等の報告、（11）プロジェクト終了後の展開検討

第 2 章　投入実績

2-1　概要

日本側及びケニア側の投入実績に関する概要は、以下のとおりである。

投入	概要
日本側： a. 長期専門家 b. 短期専門家 c. 機材供与 d. 研修員受入（本邦研修）	a. 長期専門家は合計で 6 名派遣された b. 短期専門家は、合計 58 名が派遣された c. 機材は合計 189,694,395Kshs.[2]分が供与され、施設整備として、iPIC（ものづくりセンター）、SAFARI（研究とイノベーションを目的とした小動物実験ラボ）、ALB（農学部研究棟）のリノベーションが行なわれた d. 本邦研修が実施され合計 40 名が研修員として受入れられた（うち長期研修員は 8 名、短期研修参加者は 32 名（延べ数））
ケニア側： a. カウンターパート b. 施設・設備、機材 c. ローカルコスト負担	a. タスクフォース及びその下部組織としてサブタスクフォースが配置された b. ローカルコストとして、プロジェクト年間係費（Departmental Annual Budget）として、年間約 250,000Kshs.が提供された c. 施設・設備として、JKUAT 構内 ELB（工学部教室棟）にプロジェクト事務所（専門家執務室）兼会議室が提供された

2-2　専門家派遣実績

2-2-1　長期専門家

当プロジェクトにおける長期専門家派遣実績（指導分野・派遣期間・専門家氏名・業務概要）は別紙 1 のとおり。

2-2-2　短期専門家

6 年間のプロジェクト期間中に合計 58 名（延べ数）の短期専門家が派遣され、JKUAT/PAUSTI において研究・技術指導やセミナーを実施した。年度毎の短期専門家派遣実績は別紙２のとおり。

[2] 1Khsh.＝1.01875 円（2020 年 6 月 JICA 統制レート）

2-3　研修員派遣実績

2-3-1　長期研修

長期研修制度を通じて 8 名（1～8）の JKUAT 教員が博士号を取得した。加えて、文部科学省の奨学金を通じた留学（下表のうち 9 の研修員）および E-JUST アフリカ留学生枠における E-JUST 工学系大学院への留学（下表のうち 10・11 の研修員）については、当プロジェクト予算での留学ではないもののプロジェクトにて側面支援を行ない、各大学へ留学し博士号を取得した。詳細は以下のとおり。

	研修員名	本邦受入大学・研究科	サブ タスクフォース	修了 年度
1	Dr. James Mutuku Mutua	鳥取大学大学院 工学研究科	iPIC	2017
2	Dr. Eunice Nduati	千葉大学大学院 環境リモートセンシング研究センター	iPIC	2018
3	Dr. Geofrey Sing'ombe (Recommended by JICA)	岡山大学大学院 環境生命科学研究科	iCB	2018
4	Dr. Teresia Aluoch Muhomah (Recommended by JICA)	岡山大学大学院 環境生命科学研究科	iCMoB	2018
5	Dr. Annah Indeche	岡山大学大学院 環境生命科学研究科	iCB	2019
6	Dr. Bernard Owiti	鳥取大学大学院 工学研究科	iPIC	2019
7	Dr. Robert Nesta Kagali	長崎大学大学院 水産・環境科学総合研究科	iCMoB	2019
8	Dr. Justus Mutuku Maithya	九州大学工学府	iPIC	2019
9	Dr. Martin Ruthandi Maina	岡山大学大学院 自然科学研究科	iPIC	2019
10	Dr. Njoka Francis Namu	E-JUST Energy Resources Engineering	iPIC	2019
11	Dr. Ochieng Meshak Hawi	E-JUST Energy Resources Engineering	iPIC	2019

日本での長期研修プログラムに参加し博士号を取得した長期研修員は、帰国後、JKUAT の教員職に復職し、JKUAT の研究力の向上に貢献している。

2-3-2　短期研修

当プロジェクト期間中に JKUAT の教員・技官計 29 名（延べ数）が本邦短期研修に参加した。各年度の参加者、研修先及び研修内容は以下のとおり。

【2014 年度】

	研修員名(サブタスクフォース)	本邦受入大学・研究科	研修内容
1	Mr. Daniel Omondi (iPIC)	鳥取大学工学部 ものづくり教育実践センター	• ものづくり教育実践センター視察 • 同センターでの各種機材に係る実習 • JKUAT に建設予定（現在は完成済みの）ものづくりセンター（iPIC Building）設計計画策定 • 同センターでの活動計画に係る協議
2	Mr. James Mutuku Mutua (iPIC)		
3	Prof. Bernard W. Ikua　(iPIC)		
4	Prof. Walter O. Oyawa　(iPIC)		

【2015 年度】

	研修員名(サブタスクフォース)	研修先	研修内容
1	Mr. Ben Maniafu (iPIC)	鳥取大学 工学部・工学研究科	• 各種 NC 加工機械の実習 • Digital Fabrication Machine 個別実習
2	Mr. Patrick Kavagi (iCB)	岡山大学農学部・ 大学院環境生命科学研究科	• 分子生物学･遺伝子工学関連機器類を用いた実験技術の習得 • 各種実験機器の維持管理技術・システムの習得等
3	Mr. Paul Karanja (iCB)	帯広畜産大学 食品科学研究部門	• 食品全般にわたる化学分析能力の習得 • 研究能力、問題発掘・解決能力の向上等
4	Ms. Grace Wambui Kimani (iCMoB)	岡山大学農学部・ 大学院環境生命科学研究科	• 分子生物学･遺伝子工学関連機器類を用いた実験技術の習得 • 各種実験機器の維持管理技術・システムの習得
5	Prof. Losenge Turoop (iCB)	帯広畜産大学、 岡山大学および 東京農工大学	• 農学・理学系の各種イノベーション活動の視察 • 大学でのイノベーション活動の理解促進 • （産業技術総合研究所、バイオ・ジャパンの視察を通じた）産学連携に関する知見の収集等
6	Dr. Daniel Sila (iCB)		
7	Prof. Naomi Maina (iCMoB)		
8	Dr. Peter Mwangi (iCMoB)		
9	Dr. Adrew Nyerere (iCMoB)		
10	Prof. Romanus Odhiambo Otieno (PD)	東京工業大学、 京都大学および 大阪大学	• 産学連携活動の視察
11	Prof. Martin Obanda (iPDeC)		
12	Eng. B.K. Kariuki (iPDeC)		
13	Dr. Thomas Ngigi	千葉大学	• リモートセンシング分野に関する知見強化 • 千葉大学リモートセンシングセンターの視察
14	Ms. Eunice Wanjiku Nduati		
15	Prof. Mabel Imbuga	日本機械輸出組合	• 研修先で開催された Japan Education Forum での基調講演 • 同組合との今後の連携活動に係る協議

【2016 年度】

	研修員名(サブタスクフォース)	研修先	研修内容
1	Ms.Mingate Rose Nyaboke (iCB)	帯広畜産大学	• 土壌診断技術の習得等
2	Mr. Harrison Mutua (iPIC)	中部大学/JICA 中部	• 産業技術教育の教員研修カリキュラムや教材の開発・改良等
3	Dr. Margaret Oloko (iPDeC)	豊橋技術科学大学	• クラスター・アプローチによる地域産業振興の知識習得等
4	Mr. Fredrick Otswongo (iPDeC)		
5	Mr.Daniel Omondi (iPIC)	鳥取大学工学部 ものづくり教育実践センター	• 音響・振動騒音に係る基礎技術及び創造的活動の習得 • 解析技術・成果の発表 • iPIC Building におけるものづくり活動に係る協議
6	Mr.Francis Kimuyu (iCB)	岡山大学農学部・ 大学院環境生命科学研究科	• 植物バイオテクノロジーの基本操作習得 • 遺伝子組み換え植物の作成技術の習得 • 遺伝子組み換え植物の作成技術の習得 • 組み換え遺伝子の発現解析 • 実験機器類・圃場の維持管理
7	Ms.Jane Wacera Kiarie (iCMoB)	岡山大学資源植物科学研究所	• 微生物学･遺伝子工学関連の基本的機器類を用いた実験技術の習得 • 遺伝子工学関連実験機器類の維持管理

	研修員名(サブタスクフォース)	研修先	研修内容
8	Prof.Muliaro Wafula (iCMoB)	京都大学 学術情報メディアセンター	• メディアセンターに関する全体像の理解 • ビジュアライゼーションに関する基礎理解・技術促進

【2017 年度】

	研修員名(サブタスクフォース)	研修先	研修内容
1※	Mr. Gilbert Kipng'etich Bett (iPC)	九州大学 その他フィールド	• 地熱資源開発に関する知識と実践スキルを習得する • 日本及びケニアの地熱資源開発に関する近年の状況を把握する
2※	Mr. Alvin Kiplpno Bett (iPC)		
3	Mr.Daniel Omondi (iPIC)	鳥取大学工学部 ものづくり教育実践センター	• 音響・振動騒音に係る基礎技術及び創造的活動の習得 • 解析技術・成果の発表 • iPIC Building におけるものづくり活動に係る協議

※1・2 の研修は課題別研修「地熱資源エンジニア」の上乗せとして、当プロジェクトの国別研修の枠組みで実施したもの。

【2018 年度】※

	研修員名(サブタスクフォース)	研修先	研修内容
1	Mr. Njoka Francis Namu (iPC)	東京工業大学	• 最新実験機材の知識と活用スキルの習得 • 博士論文執筆に必要なデータ収集・解析等
2	Mr. Ochieng Meshak Hawi (iPC)		

※2018 年度の国別研修は、エジプト日本科学技術大学（E-JUST）の博士課程に留学中の 2 名が同大学のプログラムの一環である本邦研究短期滞在への派遣のために、当プロジェクトの国別研修の枠組みで実施したもの。

【2019 年度】

プロジェクト予算の都合上、2019 年度は短期国別研修の派遣は行なわなかった。

2-4　供与機材実績

供与機材の支援額（年度およびサブタスクフォース等供与先）実績は以下のとおり。なお、詳細な機材のリストについては別添 2 を参照されたい。

（単位：Kshs.）

年度 / 供与先	2014	2015	2016	2017	2018	2019	2020	合計
iCB	2,000,000	841,600	22,113,819	1,095,150	7,940,800	6,885,267	20,921,000	**61,797,636**
iPIC	0	8,000,000	64,434,901	0	905,060	6,254,501	0	**79,594,462**
iCMoB	5,037,223	2,573,580	16,943,280	2,390,366	640,800	386,995	0	**27,972,244**
DIPUIL	0	0	566,700	0	0	0	0	**566,700**
iODaV	0	0	496,000	0	0	0	0	**496,000**
Corporate	0	0	3,005,300	0	0	0	0	**3,005,300**
iCCATS	0	0	940,000	0	0	4,965,000	0	**5,905,000**
Project	5,397,744	952,127	2,138,369	1,751,318	117,495	0	0	**10,357,053**
合計	**12,434,967**	**12,367,307**	**110,638,369**	**5,236,834**	**9,604,155**	**18,491,763**	**20,921,000**	**189,694,395**

2-5　在外事業強化費実績

在外事業強化費を活用して実施した中核的なプロジェクト活動は、JKUAT/PAUSTI教員・学生の教育・研究能力向上を目的としたイノベーションリサーチ（公募型競争的研究費の支給）である。（イノベーションリサーチの採択件数や支給額の詳細については、成果2指標2を参照されたい。）加えて、施設・設備面の強化は、小動物生体実験施設（SAFARI）や、ものづくりセンター（iPIC）、農学部棟（ALB）のリノベーションを通じて行われた。これら研究環境整備に要した費用も在外事業強化費の大きな割合を占めている。各年度の在外事業強化費実績額は以下のとおり。

年度	実績額（円）
2014	102,829,978
2015	171,957,066
2016	130,087,766
2017	276,776,560
2018	169,712,018
2019	121,052,204
2020	26,284,610
合計	998,700,202

第 3 章　プロジェクトの成果

3-1　成果 1 : JKUAT/PAUSTI の STI 分野の研究環境が整備される

【成果概要】

研究用機材の調達は完了し、機材の修理に関しては体制が整備されつつある。8 名の若手研究者が長期研修に参加し、教員・技官等合計 57 名が機材のメンテナンス（維持・管理や修理）の研修を受けた。

指　標	成果（詳細）
1.1　研究に必要な機材及び設備が JKUAT / PAUSTI で調達・修理される	(1) 機材の調達 プロジェクト開始前の協力準備調査にて JKUAT / PAUSTI の機材インベントリーが行われリストが作成され、必要機材の要請がまとめられ、この要請に基づいて機材供与が行われた。 (2) 機材リストの作成 上記（1）のとおり、協力準備調査で機材リストが作成され、本プロジェクトでの供与機材や既存の機材の故障有無等について、各サブタスクフォースや各学科によって随時同リストがアップデートされた。2018 年以降、更に詳細な機材リストがまとめられている。加えて、機材リストが CeSEM のデータベースとしてまとめられ、オンラインでアクセスできるデータベースが青木専門家の支援により開発された。 (3) 機材や施設のメンテナンス（維持管理・修理） 研究環境の整備に不可欠な機材のメンテナンスに関して、2014 年のプロジェクト開始時より、学内での横断的な維持管理と修理のシステム構築や組織作りの必要性が認識され、2014～15 年にかけて機材のメンテナンスを行う組織体制作りの準備チームをつくり、工学系・農学系機材の一部を試験的に修理しながら、新規購入と修理費用の比較を行った。その結果、修理をした場合の、費用軽減の比較優位性が明らかとなった。その後、プロジェクトやタスクフォースで JKUAT に働きかけて 2018 年に CeSEM が正式に JKUAT に承認・設立された。CeSEM のウェブサイトには、故障機材のメンテナンス申請、対応状況の反映がなされるシステムを青木専門家の支援により開発され、現在は運用に至っている。 他方、修理に必要な予算の確保、専門知識や技術の習得および専門スタッフの配置について未だに課題が残っており、次期プロジェクトでの引き続きの対応が必要な状況にある。
1.2　JKUAT / PAUSTI の 8 人の若手研究者が日本での長期研修プログラムに参加し博士号を取得する	長期研修員として本邦大学の博士課程に留学した若手教員は 8 名全員、博士号を取得した。
1.3　JKUAT / PAUSTI の少なくとも 25 人のスタッフが、機材の運用と保守に関する研修に参加し、すべての参加者が担当の機材の保守について 100%理解する	日本での短期研修に参加したカウンターパートは 32 名であり、そのうち 7 名が機材メンテナンスに関する研修を受けた。帰国した研修員は、研修で得た知識を JKUAT/PAUSTI の教職員等や学生へ広める役割を担っており、帰国後に各サブタスクフォースの定例会議で、本邦研修の内容に関しセミナーを行い、情報共有を行っている。短期研修の各年度の参加者数は次ページの下表のとおり。 表-1　短期研修の実績 **年度** | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | **合計** **人数（人）** | 4 | 15 | 8 | 3 | 2 | 0 | **32**

	本邦における短期研修に加え、機材操作や維持に関する研修を青木専門家（短期専門家）が 2018 年と 2019 年に行い、50 名（延べ人数）が参加した。従って、合計 57 名が研修を受けたと言える。 研修受講者の理解度は総じて高く、ほぼ全ての研修内容を理解したとの報告があった。他方、短期研修での理解度は、英語通訳の専門知識の深度等に左右されるとの意見もあった。

【評価判断】
目標はほぼ達成したと判断する。オンラインでアクセスできる研究機材リストのデータベースが開発され、JKUATの8名の若手研究者が本邦大学で博士号を取得し、目標を達成できた一方で、機材修理に必要な予算の確保、専門知識や技術の習得および専門スタッフの配置については未だ課題が残っている。

3-2 成果２: JKUAT/PAUSTI においてケニア及びアフリカに特徴的な STI に繋がる活動（研究等）が実践される

【成果概要】
年次計画をイノベーションリサーチ応募に合わせサブタスクフォースを中心に更新し、中期計画は適宜改定を行なった。また、イノベーションリサーチを通じてアフリカに特徴的な研究プロジェクトを 180 件実施し、JKUAT/PAUSTI の若手教員 296 名（延べ人数）が同研究プロジェクトや日本人専門家による研修等を通じて OJT（実地研修）を受講した。

指　標	成果（詳細）
2.1 イノベーションに関する中期計画及び実施計画が策定され、毎年更新される。	**（1）年次活動計画（イノベーションリサーチとプロジェクトの年次活動計画）** イノベーションリサーチはプロジェクト活動の中核であり、会計年度ごとの研究活動となるため、イノベーションリサーチのプロポーザルを年次の活動計画として位置づけた。また、同プロポーザルは、サブタスクフォース毎に次年度の研究計画としてまとめられるため、サブタスクフォース毎の年次研究計画かつ活動計画の一部にもなり、毎年更新されたと言える。 **（2）中期計画** 中期計画の内容は、サブタスクフォース毎の「Key Thematic Research Areas」を柱とする研究計画とプロジェクトの PO で構成しており、適宜更新を行なった。

表-2　各サブタスクフォースの Key Thematic Research Areas

iPIC	iCMoB
1. Environment and Infrastructure 2. Sustainable TransportVehicles and Systems 3. Agricultural and Industrial Machineries 4. Manufacturing Processes	1. Drug and Disease Control 2. Biodiversity and Conservation 3. Food Security and Value Addition
iCB	**iPDeC**
1. Food Security and Value Addition 2. Bio-diversity and Conservation 3. Animal Health and Production 4. Bio-resources and Waste Management	1. machinery Development 2. Drug and disease control 3. Food security 4. Value addition
iODaV (Changed to iCCATS since July, 2019)	
1.Open Research Data-based Innovation 2. Data Analytics 3. Data, Info & Scientific Visualization 4. Smart Learning Think Board S/W 5. Open Data Principles, Stds & JORD 6. Reuse of Research Data	

2.2 アフリカで特徴的な 10 の研究プロジェクトが毎年選択され、JKUAT / PAUSTI の研究者を対象とした公開競争（コンテスト）を通じて選定され実践される。	各年度のイノベーションリサーチへの応募数と採択件数は、次ページの表 3.1 および 3.2 のとおりで応募総数は 522 件、採択件数は 180 件、また支給総額は表 4 のとおりで総額 Kshs. 83,268,702 であった。

表-3.1　イノベーションリサーチの応募数と実施件数（2014～2016年）

（単位：件）

サブタスクフォース	2014		2015		2016	
	応募	採択	応募	採択	応募	採択
iPIC	7	7	21	16	14	8
iCB	7	7	17	9	24	8
iCMoB	6	6	24	13	53	22
合計	**20**	**20**	**62**	**38**	**91**	**38**

表-3.2　イノベーションリサーチの応募数と実施件数（2017～2019年）

（単位：件）

サブタスクフォース	2017		2018		2019	
	応募	採択	応募	採択	応募	採択
iPIC	26	10	27	7	0	0
iCB	80	10	25	7	0	0
iCMoB	59	23	72	7	0	0
iODaV	23	8	19	4	0	0
iCCATS	-	-	-	-	-	-
分野横断	4	4	6	2	47	2
合計	**192**	**55**	**149**	**27**	**47**	**2**
総計	**561**	**180**				

2019 年度は予算および専門家配置の関係上、学際融合的な大型研究プロジェクトに主眼を置いたためにそれまでの年度と比較すると採択件数が少なかった。また、各年度の各サブタスクフォースの応募・採択件数及び支給総額の詳細は下表のとおり。

表-4 イノベーションリサーチの応募・支給件数と支給額（単位：KSh）

年度	サブタスクフォース	応募	採択	支給総額
2014	iPIC	7	7	1,762,500
	iCB	7	7	1,500,000
	iCMoB	6	6	1,500,000
	iODav			
	Interdisciplinary			
	年度合計	**20**	**20**	**4,762,500**
2015	iPIC	21	16	6,980,000
	iCB	17	9	6,000,000
	iCMoB	24	13	6,003,702
	iODav			
	Interdisciplinary			
	年度合計	**62**	**38**	**18,983,702**
2016	iPIC	14	8	5,950,000
	iCB	24	8	5,950,000
	iCMoB	53	22	6,000,000
	iODav			
	Interdisciplinary			
	年度合計	**91**	**38**	**17,900,000**
年度	サブタスクフォース	**応募**	**採択**	**支給総額**
2017	iPIC	26	10	4,277,500
	iCB	80	10	4,100,000
	iCMoB	59	23	5,050,000
	iODav	23	8	4,000,000
	Interdisciplinary	4	4	2,100,000
	年度合計	**192**	**55**	**19,527,500**
2018	iPIC	27	7	3,785,000
	iCB	25	7	3,800,000
	iCMoB	72	7	4,710,000
	iODav	19	4	2,100,000
	Interdisciplinary	6	2	1,100,000
	年度合計	**144**	**27**	**15,495,000**
2019	iCB			
	iCMOB			
	iPIC			
	iODav			
	Interdisciplinary	47	2	6,600,000
	年度合計	**47**	**2**	**6,600,000**
総支給額				**83,268,702**

2.3 JICA が支援する研究プロジェクトの実施を通じて、JKUAT / PAUSTI の若手研究者（TA、TF、及び技術者）が 30 名以上、OJT（実地研修）を受講する。

OJT は①イノベーションリサーチ、②短期専門家による研修を通して実施した。①は上記のとおり、2014～ 19 年の間に 180 件のイノベーションリサーチを実施した。同リサーチは複数の研究者による共同研究もあるため、件数は OJT を受けた最低人数とみなすことができる。また、②短期専門家による研修には合計 166 名（延べ人数）が参加した。従って、合計 346 名（延べ人数）に対する研修が実施されたことになる。

表-5 若手研究者に対する研修（2016 年度～2019 年度）

年度	開催日時	研修タイトル（実施者）	参加者数：属性
2016	2017 年 3 月 15 日～25 日 （8 日間）	Technical Operation and Maintenance training on CNC Milling, 3D Printer and 3D Modelling （竹歳大樹短期専門家）	9 名： Technologists (Engineering workshop)
2017	2017 年 6 月 29 日～30 日 （2 日間）	SAFARI Training on Animal care and handling	8 名： Technologists 3 名 PAUSTI 学生 4 名、JKUAT 修士 1 名
	2017 年 9 月 13 日～15 日 （3 日間）	Training on Assembling of Fume Filter using milling machine （竹歳大樹短期専門家）	11 名： Technologists (Mechatronics)1 名、 Technologists (Engineering workshop)4 名、JKUAT 学生　6 名
	2017 年 9 月 13 日～15 日 （3 日間）	Training on how to make gear using involute cutter （竹歳大樹短期専門家）	6 名： Technologist 3 名、 Teaching Assistant　3 名
	2017 年 9 月 13 日～15 日 （3 日間）	Training on installation and commissioning of laser cutter （竹歳大樹短期専門家）	12 名： Technologist 4 名(Engineering workshop) Technologist (Mechatronic) 1 名 JKUAT 学生(Mechatronic Engineering) 6 名、Marine Engineering 1 名
	2017 年 11 月 30 日～12 月 1 日 （2 日間）	SAFARI Training on Animal Care and Handling	14 名： Human Anatomy　Department Technologists 5 名 JKUAT 修士 4 名 Teaching Assistant 5 名
	2018 年 2 月 5 日～9 日 （5 日間）	Training on Digital Fabrication Tools and Software （青木翔平短期専門家）	17 名： Technologist (Engineering workshop)
2018	2018 年 6 月 8 日～9 日 （2 日間）	SAFARI Training on Animal Handling	18 名： JKUAT and PAUSTI PhD and MSc students
	2018 年 8 月 2 日~3 日 （2 日間）	SAFARI Training on Animal Handling	12 名： Technologists4 名 JKUAT and PAUSTI PhD and MSc students8 名
	2018 年 9 月 10 日~14 日 （4 日間）	Training on Culture and Inoculation of Bacteria Wilt （斎藤猛雄短期専門家）	17 名： Technician　1 名 Dean　1 名 Lecturer 4 名 Research Assistant　2 名 MSc student　8 名 PhD student　1 名
	2018 年 9 月 5 日～12 日 （5 日間）	Workshop on Digital Fabrication: Mobile robot fabrication and programming （青木翔平短期専門家）	14 名： Technologist (Engineering workshop)
2019	2019 年 6 月 24 日 （1 日）	PCB design and　fabriction training （青木翔平長期専門家）	15 名： Technologist
	2019 年 8 月 12 ～16 日 （5 日間）	Molecular Biology Training	9 名 Technologist, Postgraduate student (MSc/PhD)
	2019 年 9 月 4 日 （1 日）	PCB design and fabriction training （青木翔平長期専門家）	4 名 Technologist
		合計	**166 名**

	上記の OJT に加え、PAUSTI 学生に対して、研究を始める際に、プロジェクトから研究初動費として Seed fund を支給した。この資金は直接的な OJT には当たらないものの、若手研究者の研修の一環として位置づけられる。合計 302 名の PAUSTI 学生に、総額 19,742,900Kshs を支給した。

表-6　PAUSTI学生に対するSeed fund（研究費）支給数と支給金額

年度	2015	2016	2017	2018	総計
件数(件)	48	54	82	118	302
支給額 (Kshs.)	3.360,000	3,779,900	5,740,000	6,863,000	19,742,900

【評価判断】

目標は達成できた。イノベーションリサーチ公募に合わせて年次計画を毎年更新し、中期計画は適宜改訂した。イノベーションリサーチでは研究内容を重視した適切な審査によってアフリカに特徴的な研究プロジェクトを計180件採択・実施した。また目標人数の30人を大きく超えるJKUAT/PAUSTIの若手教員296名（延べ人数）が同研究プロジェクトや日本人専門家による研修等を通じてOJTを受講した。

3-3　成果３:JKUAT/PAUSTI の研究・実践活動及びその成果がアフリカ内外の高等教育機関や産業界等に情報発信される

【成果概要】

JKUAT/PAUSTI 主催のセミナー等はプロジェクト期間中に 10 回以上、民間企業との共同セミナー等も年に 2 回以上開催した。

指　標	成果（詳細）
3.1　JKUAT / PAUSTI が主催する研究セミナー、シンポジウム、ワークショップ、会議を、少なくとも年 2 回開催する。	2014 年以降、JKUAT もしくは、PAUSTI が主催するセミナーは、年 2 回以上（毎年 5 月に「SRi Conference（Sustainable Research and Innovation）」、11 月に「Scientific Conference（JKUAT Scientific, Technological and Industrialization Conference）」）開催されている。 SRi Conference は主に工学系の論文発表が中心であり、Scientific Conference は科学技術全般（農学・工学・理学・情報コミュニケーション技術（ICT）など）の論文やプロトタイプや製品等の研究成果の発表が中心となっている。これら 2 つのカンファレンスは、JKUAT 教員、JKUAT/PAUSTI の学生,外部の教員・学生を対象にした研究発表の場となっているが、産学間連携を模索する取り組みも行った。また、プロジェクトとしては両カンファレンスにおいて、長期・短期専門家等による基調講演を行い、情報共有・発信を行ってきた。

表-7 各年度に開催されたカンファレンスと参加者数

年度	カンファレンス	参加者数(人)	プレゼンテーション数(件)
2014	Scientific	400	85
2015	SRi	320	49
	Scientific	220	66
2016	SRi	250	42
	Scientific	250	73
2017	SRi	250	46
	Scientific	160	67
2018	SRi	250	47
	Visualization*	80	35
	Scientific	250	63
2019	SRi	250	44
	Scientific	250	44

	*Visualization カンファレンスは 8 月に実施。
3.2 民間企業との協働セミナーを、少なくとも年 2 回開催する。	SRi Conference と Scientific Conference が民間企業と共同で 6 回開催された。また、研究成果の実用化を促進することを目的に民間企業関係者を招へいして Innovation Incubation Seminar を 2018 年より開始し、2018 年には 9 回、2019 年には 3 回開催した。加えて、産学連携を促進するために Univerwsity-Industry Linkage Workshop も 2019 年より開催し始めた。 民間企業ではないものの、大学間連携活動の一環として、E-JUST の Dr. Ahmed Mohamed Rashad Fathel Bab とカント一大学（ベトナム）の Prof. Binh Ly Nguyen による JKUAT/PAUSTI 教員・学生向けのセミナーも開催した。

【評価判断】

目標は達成できた。JKUAT もしくは PAUSTI は 2014 年以降、毎年 5 月に SRi Conference（Sustainable Research and Innovation）、11 月に Scientific Conference（JKUAT Scientific, Technological and Industrialization Conference を主催しており年 2 回以上セミナーを開催している。うち 6 回は民間企業と共同で開催したのに加え、Innovation Incubation Seminar を 2018 年には 9 回、2019 年には 3 回開催、更に 2019 年からは Univerwsity-Industry Linkage Workshop も開催し、民間企業との協働セミナーを年 2 回以上の頻度で開催している。セミナー等に参加した組織及び民間企業は 160 以上（延べ数）であった。

3-4 プロジェクト目標: JKUAT/PAUSTI で STI を生み出す学生を輩出する

【概要】JKUAT / PAUSTI は毎年一定数の新入学生を受入れ、プロジェクトによって整備された研究環境下で STI のスキルと知識を習得し、学術論文も産出した卒業生を輩出した。

指　標	成果（詳細）
1 ラボの機材情報が定期的に更新され、必要な機材や設備は更新された情報に基づいて調達・修理される。	プロジェクトの開始から 2017 年まで、JKUAT とプロジェクトチームは、準備調査で作成されたリストに基づいて機材を調達した。タスクフォースにおいて、機材メンテナンスのためのシステム構築の必要性が議論され、それらを担う CeSEM が 2018 年 5 月に正式に JKUAT によって設置され、技官 1 名が配属された。 CeSEM は、短期専門家のアドバイスを受け、JKUAT の教員と技官向けの機材データベースを構築し、各研究室の機材情報管理を可能にし、また、CeSEM への修理依頼もオンラインできるようにシステムを構築した。修理に関する情報は、教員と技官のデータベースを通じて共有されるようになっており、JKUAT の機材の記録と修理情報は、データベース上で定期的に更新されることが期待されている。 従って、CeSEM が構築したデータベースにより機材の維持管理・修理も行えるようになったと言える。 一方、JKUAT による CeSEM への予算は限定的で、JICA プロジェクト側が、（JKUAT の代わりに）スペアパーツを購入し供給している状況である。また、各部門から CeSEM に修理費用を支払うシステムが作られておらず、機材を持続的に維持・管理し、修理するための課題となっており、次期フェーズにて引き続き同課題への対応が必要と考える。
2 JKUAT / PAUSTI の研究者によって書かれた学術論文が、アフリカ及び海外の査読付きジャーナルに年	2017 年まで、サブタスクフォースは掲載された論文数を報告しておらず、論文を取りまとめるシステムも存在しなかった。係る状況下、論文発表実績管理体制の未整備と研究費支給件数に対する発表論文数の少なさを確認し、これら課題への対応のために、2018 年 11 月の第 4 回 JCC においてプロジェクトの 1 年間の延長が合意された。 掲載論文の能力強化向上の活動に焦点を当てた結果、サブタスクフォースにより、Abstracts of Scientific Publications が 2019 年よりまとめられるようになった。プロジェクト終了時点でのタスクフォース及び PAUSTI の学生によって作成され査読付きジャーナルに掲載された学術論文数は次のとおり。

間 100 以上掲載される。	表-8　タスクフォースとPAUSTIの掲載論文数 **年度** / **タスクフォース** / **PAUSTI** / **合計** 2014 / 21 / 41 / 62 2015 / 34 / 22 / 56 2016 / 36 / 41 / 77 2017 / 30 / 48 / 78 2018 / 63 / 90 / 153 2019 / 124 / 18※ / 142 **合計** / **308** / **260※** / ※PAUSTI 学生により 2019 年度中に産出された論文数は 2019 年 12 月時点の実績であり、それに伴い合計数も同時期の実績値。 表-9　各サブタスクフォースの掲載論文数 **年度** / **iCMoB** / **iPIC** / **iCB** / **iCCATS** / **合計** 2014 / 6 / 2 / 13 / / 21 2015 / 12 / 2 / 20 / / 34 2016 / 14 / 1 / 21 / / 36 2017 / 22 / 3 / 5 / / 30 2018 / 12 / 47 / 4 / / 63 2019 / 12 / 32 / 69 / 11 / 124 **合計** / **78** / **87** / **132** / **11** / **308** 上記の表-8 のとおり、査読されたジャーナルに掲載された学術論文数は、2018 年は 153 件、2019 年は 142 件となり目標指標の 100 件を超えている。 なお次表に示すように、PAUSTI 博士課程の卒業生数は当初の想定より少なかったものの、PAUSTI の卒業生は卒業前に論文が査読付きジャーナルに掲載されている。上記の表-8 に記載している PAUSTI の掲載論文数は下表の卒業生によるものである。なお、論文掲載年度と卒業年度は必ずしも一致するものではない。 表-10　PAUSTIの卒業生数 **年度** / **卒業者数** 2014 / 55（修士のみ） 2017 / 42（修士のみ） 2018(6 月)※ / 46（修士 32、博士 14） 2018(11 月) / 51（修士 46、博士 5） 2019 / 114（修士 70、博士 44） ※通常 11 月に行われる JKUAT の卒業式に合わせて PAUSTI 学生も卒業するが、2018 年度のみ入学時期の都合上、6 月にも卒業生を輩出している。
3　JKUAT / PAUSTI が主催する研究セミナー、シンポジウム、ワークショップ、会議に、80 以上の学術機関・研究機	達成度：セミナー等に参加した組織及び民間企業は 160 以上（延べ数）であった。JKUAT/PAUSTI が STI 分野におけるアフリカ地域の拠点教育・研究機関となるためには、これらセミナーやワークショップを契機に、民間企業との協働活動（インターンシップや共同研究等）が行われ、JKUAT/PAUSTI の研究成果がアフリカの地域社会や産業界に広く共有されることが課題となる。 JKUAT/PAUSTI が主催する各種セミナーに参加した組織及び民間企業を集計すると、総数は 160 以上となった。　参加者の数はプロジェクトチームによっ

関・民間企業が参加する。

て記録されたが、参加組織数は記録されていない場合もあり、下表の合計は最小値となっている。

表-11　JKUAT / PAUSTI主催セミナー等への参加組織数（2019年11月まで）

年度	セミナー等の種類	参加組織数
2014	短期専門家（本邦大学教員等）による特別セミナー	2
	STI シンポジウム	1
	カンファレンス（SRi）	29
2015	カンファレンス（SRi, Scientific 等）	30
	ジョイントセミナー	1
2016	イノベーション リサーチ発表会	2
	カンファレンス（SRi、メディアアートフェスティバル等）	27
	TICAD VI サイドイベント	4
	短期専門家（本邦大学教員等）による特別セミナー	6
2017	短期専門家（本邦大学教員等）による特別セミナー	2
	セミナー（PAUSTI 学生対象等）	9
2018	短期専門家（本邦大学教員等）による特別セミナー	5
	イノベーション・インキュベーションセミナー	9
	カンファレンス（SRi 等）	7
2019	産学連携ワークショップ	14
	カンファレンス（SRi, Scientific 等）	12
合計		**160**

【評価判断】目標は達成できた。JKUATによって設置されたCeSEMが構築したデータベースにより、ラボの機材情報が定期的に更新され、必要な機材や設備は更新された情報に基づいて調達・修理されるようになった。ただしCeSEMの継続的な運営資金については課題が残っている。ジャーナル掲載論文数についてはプロジェクトの助言で学術論文実績の管理と論文発表の勧奨が始まりAbstracts of Scientific Publicationsがまとめられるようになった。結果、JKUAT / PAUSTIの研究者による査読ジャーナルに掲載された学術論文数は、2018年は153件、2019年は142件となり目標の100件を超えた。またJKUAT/PAUSTIが開催したセミナー等に参加した組織及び民間企業は160以上（延べ数）となり、目標の80機関を大きく超えている。

3-5 上位目標の達成度の予測

第1期生は92.7%がアフリカの民間企業や学術機関に雇用されているので指標を達成している。しかしPAUSTIの学生は、卒業後は就職前にアフリカ各国に戻るため「上位目標：アフリカにおいて科学技術イノベーション（STI）分野の産業人材が育成される」の達成状況を把握するための卒業後の進路調査等が難しいという課題があり、達成度の予測は困難である。実際、第2期及び3期生のうち追跡調査で回答が得られた卒業生については100%が就職しているが、約半数は未回答である。

第1期生の調査結果は、PAUSTI修士課程から博士課程に進学していた学生の個人的なネットワークをも利用して、プロジェクト主導で一年以上かけて得た結果である。その後は学生のネットワークを活用した調査ができなくなったために、第2期以降の回答が満足に得られていない。5-1-(4)のように、後継案件においてはPAUSTIに対する追跡調査の助言等を行いながら卒業生の情報収集のサポートを行い、アフリカにおいて科学技術イノベーション（STI）分野の産業人材が育成されていく状況を確認できるのが望ましい。また後継案件の上位目標とその指標については事業完了後もデータ収集可能な指標によるものに設定することを検討することが推奨される。

第 4 章　OECD5 項目評価基準の観点からの評価

これまで確認したプロジェクトの実績を、OECDの5項目評価基準（「妥当性」「有効性」「効率性」「インパクト」「持続性」）の観点から評価した。それぞれの観点について、「高い」「比較的高い」「中程度」「やや低い」「低い」という5段階の格付け評価を行った。

4-1　妥当性

妥当性：「高い」

中間レビューにおいて妥当性が「高い」と評価されて以降も、ケニア政府の政策文書「Kenya Vision2030」における高等教育分野の開発方針や2063年までのアフリカの政治、経済、社会に関する長期的ビジョン「Agenda2063」を含むアフリカ諸国のニーズに関する政策や優先課題に大きな変化はなく、また日本の対ケニア政府開発援助（ODA）政策にも変更はないため、妥当性は「高い」。

(1)　ケニアの開発計画や高等教育政策との整合性

ケニア政府の同国開発に係る政策文書「Kenya Vision 2030」における（高等）教育セクターのビジョンとして「持続的な発展を実現するため、世界的に競争力のある質の高い教育、訓練、研究を行うこと」を定めている。また、2063年までのアフリカ地域の政治、経済、社会開発に関する長期的ビジョン「Agenda2063」を含むアフリカ諸国のニーズにおける政策や優先課題に大きな変化は見られない。従って、本プロジェクトは、同国の教育政策の方向性と整合している。

(2)　日本の対ケニアへの援助政策との整合性

PAUホスト国であるケニアに関しては、国別援助方針（2012年4月）では、援助の基本方針（大目標）として、「持続的な経済・社会の発展の促進」を挙げ、「Kenya Vision 2030」を基に、重点分野（中目標）の4番目として経済成長のもととなる「人材育成」をあげている他、対ケニア共和国JICA国別分析ペーパー（2018年3月）でも、「STI人材育成」を重点分野「産業開発」の主要開発課題として位置づけている。第7回アフリカ開発会議（TICAD VII、2019年8月28～30日）では、アフリカへの重点支援策として、投資やイノベーションの促進、人材育成が公約として挙げられている。従って本プロジェクトはケニアへの日本の政府開発援助政策を具現化するものとなっている。

(3)　手段としての適切性

イノベーション創出に向けて、①JKUAT/PAUSTIの研究環境の整備として、施設設備や研究機材の供与、教員や技官への研修などが行われ、②研究活動の促進として、イノベーション リサーチの実施や、論文能力の強化が行われた。また、③研究成果の共有や産学連携として、セミナーやカンファレンスの開催が行われている。施設整備では、iPIC（ものづくり）センターが建設され、施設が活用されている。供与機材は調達され、同時に機材の維持管理、修理体制の構築が進んでいる。予算的制約の多い、ケニアの大学において、新たな施設・機材の導入により、新たな研究に取組む下地を築いた。また、日本人の短期専門家を招いてのセミナー等実施と同時に、有望なJKUAT/PAUSTI職員や技官の本邦研修が行われており、能力強化と共に、研究へのモチベーション向上などの効果が見られた。

4-2　有効性

有効性：「比較的高い」

プロジェクト目標の「JKUAT/PAUSTIにおいてSTIを生み出す学生を輩出する」に対し、「STI分野の研究環境が整備」されつつあり、「ケニア及びアフリカに特徴的なSTIに繋がる研究活動が実践」され、また「それら研究活動やその成果がアフリカ内外の高等教育機関や産業界等に発信」されている。他方、PAUSTI博士課程の修了生数が当初の想定よりも少なかったため、学術論文の年間掲載数達成にはやや阻害要因となってしまった。したがって、プロジェクトの有効性は「比較的高い」と評価される。

4-3　効率性

効率性：「中程度」

本プロジェクトは、成果を生み出すための、日本側、ケニア側からの投入が適切であり、成果達成に貢献している。特に、サブタスクフォースとタスクフォースは献身的に活動した。投入のタイミングも、概ね適切であった。全体的に、プロジェクト活動は概ね計画通りに進み、投入は適切に利用され維持されている。他方、プロジェクト目標のうち指標1と2の達成と持続性担保のために機材の修理管理・修理及び学術論文掲載情報収集の能力強化を更に行なう必要があったためにプロジェクトを1年延長した。また、研究環境整備とアフリカに特徴的なSTIに繋がる研究活動等の実践を目的に、当初計画に加えて施設整備（小動物生体実験施設（SAFARI）、ものづくりセンター（iPIC）及び農学部棟（ALB））を活動の一環として実施したために、実施計画段階のコストと比較して1.2倍程度になっている点を踏まえ「中程度」と判断した。

(1)　概ね適切な投入

プロジェクトの成果を出すための投入はタイミングと量の面で適切であった。日本側からの投入（主に専門家派遣）は、ほぼ計画通りに実施された。中間評価時点で懸案とされていた工学系の長期専門家派遣に関しては、プロジェクト期間の延長に伴い実施されている。ケニア側の投入（タスクフォースとサブタスクフォース、プロジェクトオフィス、関連設備等）は、適切なタイミングで実施された。成果1では、研究用機材の調達や維持管理、修理が行われたが、調達に関して、各サブタスクフォースのニーズを反映し、本プロジェクト分は完了している。また、施設・設備面の強化は、小動物生体実験施設（SAFARI）、ものづくりセンター（iPIC）、農学部棟（ALB）のリノベーションを通じて行われた。

コスト面においては、いずれの活動もプロジェクト目標の達成とプロジェクト後の持続性担保のためには必要な活動であったと考えられるものの、リノベーションに伴い、またプロジェクト期間の延長にも伴って、プロジェクト予算は当初計画額から比較すると約1.2倍（当初計画額：8.53億円、評価時協力額：9.69億円）となっていることから、効率性の評価は「中程度」とした。

(2)　サブタスクフォースとタスクフォース

ケニア側からの投入として、「サブタスクフォースとタスクフォース」が作られ、プロジェクト実施の機動力となった。会議が頻繁に開催され、良好なコミュニケーションが行なわれるとともに、活動を通して教員の意識改革が行われ、プロジェクト後半では研究論文作成が促進された。以上より、費用と便益の面で効率性を高める要因となったと考えられる。

4-4　インパクト

インパクト：「比較的高い」

STI分野の高度人材は、JKUAT / PAUSTIから毎年育成されているものの、卒業生の追跡調査には困難が伴い、PAUSTI卒業生の情報は限定的であるためにそのインパクトを正確に評価することは困難である。第1期生は92.7%がアフリカの民間企業や学術機関に雇用されているので指標を達成していた。第2期及び3期生のうち追跡調査に回答が得られた卒業生については100%が就職しているが、約半数は未回答である。他方で、各国において主要大学の学部長になったり、政府機関へ就職したりするなどの実績がいくつか個別のインタビューを通じて確認された。上位目標と指標については5-1-(4)に後述する。

(1) PAUSTIの運営と人材輩出

PAUSTIは2012年に設立され、開校以来、毎年多くの学生を受け入れて修了生も輩出し、修了生のうち約80%以上の修了生が就学・就職をしている。卒業後にアフリカ各国において主要大学の学部長になった事例や政府機関へ就職した事例がある。また、PAUSTIは他のPAU機関と比較すると応募者数が多く、年に一回開催されるPAUのLTP会合では他のPAU機関からも日本への支援の要望の声が寄せられることもある。これらはプロジェクト活動がプラスの影響を及ぼしたとも考えられる。

(2) 日本とJKUATの関係強化

日本は1978年のJKUATの設立から支援を始め、2000年に日本による協力が一旦終了して以降、JKUAT内での日本の貢献に対する意識が低下していたと中間評価報告書に記されている。また、最近は中国が農業分野で支援を開始しており、日本の存在感が相対的に低下していたが、本プロジェクト実施により、日本とJKUATの関係が再び強化され、日本の貢献が再評価されつつある。また、本プロジェクトはアフリカ全土からの大学院学生を対象としていることから、ケニアに加え、アフリカ全土へ裨益するプロジェクトとも言える。

(3) JKUAT教員の意識改革

本プロジェクトでは、サブタスクフォース及びその上位組織としてタスクフォースが形成され、自主的な活動が行なわれ、活動を通じて大学教員自身の意識改革が確認された。具体的には、①研究とその成果をまとめる論文の重要性、②学際的な研究の重要性、③国際的な視野の認識等が高まった。教員のプラスの意識改革がJKUAT全学に好影響を及ぼし、更に学生への良い影響が及ぶと考えられる。

(4) 環境への影響

プロジェクトは環境保全活動を直接目的としていないが、プロジェクトによる研究結果やイノベーションの試作品の一部は、環境を保全するものもある。このようなアフリカ型イノベーションの製品例として、「ハイブリッドソーラーバイオマスドライヤー」等があり、ユーザーが必要とするエネルギー量の削減が期待され、省エネルギーや再生エネルギーの利用を通じて環境にプラスの影響が期待される。

4-5　持続性

持続性：「中程度」

プロジェクトの持続可能性の見通しは、JKUAT/PAUSTIの制度や政策、財政、技術等さまざまな要因により判断される。特に財政面では、イノベーションリサーチや機材メンテナンス等に対する予算措置に関して課題が残り、今後は外部資金の獲得等を通じた財政面での自立が望まれる。

(1) 制度面での持続性

学長を始め、プロジェクト関係者が本プロジェクトを高く評価している。具体的には、②日本人専門家の多岐にわたる活動・サポート体制の充実と質の高さ、②JKUATの研究環境や組織強化を通じたPAUSTI運営強化につなげる構想、③本邦研修での知識や技術の習得等が挙げられた。日本人専門家とケニア人プロジェクト関係者は、JKUATの大学ランキングを向上させることや、研究論文数を向上させる意味、イノベーションに係わる研究成果を民間企業と協力して商業化や製品化にすること等の現状をより発展させることに関し双方に高い意識を持っており、制度面での持続性は高い。

(2) 財政面の持続性

本プロジェクトの後継案件として、フェーズ2を実施する計画となっているが、日本の財政的支援はプロジェクト終了と同時に終わるため、JKUATによる資金確保が求められる。フェーズ2終了までの間に、プロジェクトが行っている活動を維持する経費確保に向けた対策の検討と予算措置が必要になる。

(3) 組織面での持続性

本調査時点で、ケニア側関係者はプロジェクトにオーナーシップを持ち、積極的に関与していることが確認された。プロジェクト実施の体制は、タスクフォースとサブタスクフォースであり、今後も基本的にこの体制が維持される予定である。プロジェクト当初、3つのグループであったサブタスクフォースは、プロジェクト期間中に紆余曲折はあったものの5つのグループに発展し、機能が更に高まった。今後は、状況に応じて学際的かつ研究成果の実用化を推進するサブタスクフォースなど、イノベーションの研究成果を高める組織を加えることで、公正かつ長期的なJKUATの地位及び大学ランキング向上につながると考えられる。いずれにしても、プロジェクト終了後も学内での関係が維持され、発展する組織を形成することが、持続性を高めることにつながる。

第 5 章　プロジェクト運営上の課題と解決のための工夫および教訓

5-1　カウンターパート機関の課題および今後の対応事項、教訓

(1)　財政の確保あるいは代替策での対応

JKUAT/PAUSTIが拠点大学としてアフリカ域内のSTI振興を担うべく理工系の高度人材育成・輩出をプロジェクト終了後も持続的に行うには、現在プロジェクトを中心に取り組んでいる活動（特にイノベーションリサーチや機材の修理等）を継続するための予算をJKUAT/PAUSTIが独自に確保することが必須である。その反面で、教育省からの予算配賦は限定的であり、配賦予算のうち管理・運営費の支出が大きな割合を占めている状況を鑑みると研究費や機材の修理等に必要な予算を学内で確保するには困難を伴うことが予想される。その場合、外部資金の獲得等の代替策を講じることが求められる。

(2)　工学系人材の育成

上記(1)の課題とも関連するが、外部資金の獲得には JKUAT/PAUSTI 教員の研究能力の向上が必須である。長期研修制度や文科省の奨学金制度、E-JUST のアフリカ留学生枠を通じて博士号取得のため長期研修員を派遣するとともに、博士課程を修了してケニアに帰国した若手教員を中心に JKUAT/PAUSTI における工学系の教育・研究能力の強化に取り組んできたが、彼（女）らの更なる JKUAT における教育・研究能力強化とそれを通じた工学系の研究基盤強化や産業界やアフリカ域内外の高等教育機関とのネットワークの形成により一層、注力することが望まれる。また、機材の修理に関しては専門スタッフの配置や彼（女）らの専門知識や技術の習得・向上も欠かせない。

(3)　研究論文に関する情報収集のための体制作り

論文数は、一般的に大学を評価する重要な要素の 1 つとなっており、その増加は大学の質が向上した証左として外部の教員が JKUAT/PAUSTI の教員と共同研究や学術交流活動を行う際の判断材料となる。加えて、PAUSTI の学生による論文は、JKUAT 教員とケニア以外の出身の PAUSTI 学生との論文は国際共著論文となるが、これらは大学の国際化のレベルを測定する指標にもなる。研究論文数を毎年取り纏めることは、こうした指標に対応し、大学の質を保障することであり、外部資金の獲得や、人材育成を行なうために必要なアフリカ域内外の高等教育機関との連携強化にもつながる重要な活動であり、研究論文数を毎年取りまとめる体制を構築し積極的に公表することが望まれる。

(4)　PAUSTI卒業生の追跡調査に関するフォローアップ

PAUSTIの学生は、アフリカ全土から学びに来て卒業後は就職前に各国に戻るため、卒業後の進路についての追跡調査が難しい状況である。第1期生の調査結果は、PAUSTI修士課程から博士課程に進学してPAUSTI在籍していた学生から同期生を紹介してもらう、学生から同期生にWhatsApp等で直接連絡を取り確認をしてもらう等の工夫を凝らし、プロジェクト主導で一年以上かけて調査を続け、やっと得られた回答結果であった。第2・第3期ではPAUSTI修士課程修了後に博士課程へ直接進学した学生がおらず、また2017年以降、修士課程でPAUからの奨学金を得た学生は博士課程で再度PAUからの奨学金を得ることができない規定となったためPAUSTI博士課程に進学する学生がおらず、学生の個人的なネットワークに依拠した追跡調査はできなくなってしまったために、第2期以降の回答が満足に得られていない。

上位目標とその指標については事業完了後もデータ収集可能な指標によるものに設定することを検討するか、定数ではなく定性での評価にすることを考慮することが望ましい。一方で、修了生の就学・就職状況や帰国後の活躍の様子をアフリカ域内で発信すればJKAUT/PAUSTIの認知度や評価が上昇することが期待できるので、後継案件や類似案件ではプロジェクトがカウンターパートに対する追跡調査への助言を行いながら卒業生の情報収集のサポートを行うことが望まれる。

5-2 成果最大化のためにおこなったプロジェクトでの工夫と教訓

(1) プロジェクト全体の明快なビジョン（戦略）の関係者間における共有の徹底

プロジェクトチーム及びJKUAT/PAUSTIに対してプロジェクトのロードマップや実施スケジュールを明示し、プロジェクトの進捗状況に対する認識の共有を通じてケニア側関係者との信頼関係構築を心掛けた。その結果、全体として高いモチベーションを保ち、ケニア側関係者のオーナーシップが十分に発揮された。

(2) プロジェクト実施体制の確立

本事業ではプロジェクト活動推進のために、各分野（農学・工学・健康科学・コンピューター科学）の教員や技官で成り立つサブタスクフォースを、サブタスクフォースのうち更にシニアメンバーを中心に代表数名で構成されるタスクフォースを立ち上げた。サブタスクフォース、タスクフォースともに日本人専門家も含めた打合せを毎週定期的に開催し、プロジェクト活動の進捗状況の確認やプロジェクト活動に関する提案等を行なうことで、JKUAT/PAUSTIのオーナーシップをもったプロジェクトへの関わりが醸成され、プロジェクト推進の動力、機動力となって有効に機能した。

5-3 プロジェクト終了から事後評価まで

プロジェクト終了後も後継案件において以下の点を中心に本プロジェクトの成果をモニタリングする。

- イノベーションリサーチと研究活動の推進、そのための財源状況
- 工学分野の教育・研究能力の強化（iPIC による論文数等）
- PAUSTI 卒業生の進路状況
- 産業界とのネットワークや連携の深化・促進の状況

第 6 章　合同調整委員会開催記録

当プロジェクト期間中に合計 5 回 JCC を開催した。各会の開催日と主な議事内容は以下のとおり。なお、詳細な議事録については別添の Annex.3 を参照されたい。

回数	開催日	主な議事内容
第 1 回	2015 年 11 月 5 日	• プロジェクトの概要（目標・成果・活動内容等）の説明 • 2014 年 6 月（プロジェクト開始時）～2015 年 10 月の各サブタスクフォースにおける成果・活動内容および今後の活動計画に関する報告 • PAUSTI 最新状況の報告 • 今後のプロジェクト活動に関する提案 • PDM および PO の承認
第 2 回	2016 年 11 月 22 日	• プロジェクト活動の進捗状況および成果の報告 • 2015 年 11 月～2016 年 10 月の各サブタスクフォースにおける成果・活動内容および今後の活動計画に関する報告 • PAUSTI 最新状況の報告 • 中間レビュー調査の結果報告およびミニッツの署名
第 3 回	2017 年 11 月 21 日	• プロジェクト活動の進捗状況および成果の報告 • 2016 年 11 月～2017 年 10 月の各サブタスクフォースにおける成果・活動内容および今後の活動計画に関する報告 • PAUSTI 最新状況の報告 • ものづくりセンター（iPIC）及び小動物実験等（SAFARI）およびプロジェクト開始時～2017 年 10 月に調達した機材のハンドオーバー
第 4 回	2018 年 11 月 22 日	• プロジェクト活動の進捗状況および成果の報告 • 2017 年 11 月～2018 年 10 月の各サブタスクフォースにおける成果・活動内容および今後の活動計画に関する報告 • PAUSTI 最新状況の報告 • プロジェクトの一年間の延長に係る協議と合意
第 5 回	2019 年 11 月 20 日	• 5 年間のプロジェクトによる投入、活動および成果の総まとめ • 各サブタスクフォースにおけるアフリカ型イノベーションの成果、産業界との連携および研究成果の普及（実用化）に関する報告 • PAUSTI 最新状況の報告 • 修了時評価調査およびフェーズ 2 詳細計画策定調査の結果報告 • 国内支援委員長による 5 年間の総括

【別紙】

1. 長期専門家リスト
2. 短期専門家リスト

【別添】

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[Annex]

1. **Plan of Operation（PO）**
2. 供与機材リスト
3. **JCC 議事録**

別紙１　　長期専門家リスト

当プロジェクトにおける長期専門家派遣実績（指導分野・派遣期間・専門家氏名・業務概要）は以下の通り。

	指導分野	派遣期間	専門家氏名	業務概要
1	チーフアドバイザー	2014年6月 ～2018年4月	角田　学	• プロジェクト運営管理全般に関する企画・計画立案、実施促進 • 相手国機関や国内支援委員、その他関係者との定期的な意見交換を行う • (業務調整専門家が行う)公金管理、物品管理、事務・会計・庶務の状況把握及び計画的な執行促進 • プロジェクト運営に支障となる事項発生時の相手国、日本大使館、JICA事務所等との解決 • (必要に応じて)AUやAUCとの連絡・調整・協議
2		2018年4月 ～2020年6月	小疇　浩	
3	農学教育・研究	2014年6月 ～2019年6月	塩見　慎次郎	• 農学系教育・研究活動の改善・活性化 • 農学系の教育・研究用機材の運用体制整備 • アフリカ内外との学術交流促進 • ワークショップ修繕等に関する技術的な助言
4	業務調整	2014年6月 ～2017年5月	田中　規明	• プロジェクト実施体制・環境の整備 • プロジェクト運営・管理の補佐 • プロジェクト活動経費運用・管理
5	業務調整/情報コミュニケーション技術(ICT)	2017年5月 ～2019年6月	小田　祥子	• プロジェクト運営・管理の補佐 • プロジェクト活動経費運用・管理 • プロジェクトに関する積極的な広報業務の実施、JKUAT 及びプロジェクト • ウェブサイトを通じた効果的な情報発信の実施 • 広報用素材の作成（Brochure, Roll Up banner, Research profile 等） • JKUAT/PAUSTI に関する機材のデータベース化、維持・管理に関する助言・支援
6	工学教育/業務調整	2019年5月 ～2020年6月	青木　翔平	【工学教育】 • 工学系教育・研究活動の改善・活性化 • 工学系の教育・研究用機材の運用体制整備 • アフリカ内外との学術交流促進 【業務調整】 • プロジェクト運営・管理の補佐 • プロジェクト活動経費運用・管理

別紙 2　　短期専門家リスト

6 年間のプロジェクト期間中に合計 58 名（延べ数）の短期専門家が派遣され、JKUAT/PAUSTI において研究・技術指導やセミナーを実施した。年度毎の短期専門家派遣実績は以下のとおり。

【2014 年度】

	専門家氏名	所属機関	備考
1	大澤克幸　教授	鳥取大学	
2	三浦 政司　助教	鳥取大学	
3	桝田 正治　教授	岡山大学	
4	森田 潔　学長	岡山大学	
5	小疇　浩　教授	帯広畜産大学	
6	下村 博司　氏	NHK インターナショナル	
7	なかいこうじ　氏	NHK インターナショナル	1 回目
8	なかいこうじ　氏	NHK インターナショナル	2 回目
9	中川博次　京都大学名誉教授		20 周年記念式典出席
10	岩佐順吉　岡山大学名誉教授		20 周年記念式典出席
11	副井裕　鳥取大学名誉教授		20 周年記念式典出席
12	久保 康隆　教授	岡山大学	20 周年記念式典出席
13	奥田潔　教授	岡山大学	JSPS 科研費
14	久保 康隆　教授	岡山大学	JSPS 科研費
15	坂本 亘　教授	岡山大学	JSPS 科研費
16	一瀬 勇規　教授	岡山大学	JSPS 科研費
17	齊藤　邦行　教授	岡山大学	JSPS 科研費
18	鈴木 信弘　教授	岡山大学	JSPS 科研費
19	田中　義行　教授	岡山大学	JSPS 科研費
20	谷　明生　准教授	岡山大学	JSPS 科研費

【2015 年度】

	専門家氏名	所属機関	備考
1	田中　久隆　教授	鳥取大学	教員自身の研究費
2	岡田　晃　教授	岡山大学	
3	田村　篤敬　准教授	鳥取大学	
4	赤尾　尚洋　助教	鳥取大学	
5	大澤克幸　教授	鳥取大学	
6	田中 義敏　教授	東京工業大学	
7	三浦 政司　助教	鳥取大学	
8	小疇　浩　教授	帯広畜産大学	

	専門家氏名	所属機関	備考
9	木村　亮　教授	京都大学	
10	神崎 浩　教授	岡山大学	JSPS 科研費
11	久保 康隆　教授	岡山大学	JSPS 科研費
12	坂本 亘　教授	岡山大学	JSPS 科研費
13	鈴木 信弘　教授	岡山大学	JSPS 科研費
14	Ian GALIS　教授	岡山大学	JSPS 科研費

【2016 年度】

	専門家氏名	所属機関	備考
1	Dr. Ahmed Mohamed Rashad Fathel Bab	E-JUST	第三国専門家
2	萩原　篤　教授	長崎大学	
3	谷　昌幸　教授	帯広畜産大学	
4	Dr. Ahmed Mohamed Rashad Fathel Bab	E-JUST	第三国専門家
5	森田 潔　学長	岡山大学	JSPS 科研費
6	佐藤 健治　教授	岡山大学	JSPS 科研費
7	久保 康隆　教授	岡山大学	JSPS 科研費
8	坂本 亘　教授	岡山大学	JSPS 科研費
9	Prof. Ivan GALIS	岡山大学	JSPS 科研費
10	西野 直樹　教授	岡山大学	JSPS 科研費
11	後藤 丹十郎　教授	岡山大学	JSPS 科研費
12	谷　明生　准教授	岡山大学	JSPS 科研費
13	田中　義行　教授	岡山大学	JSPS 科研費
14	はやかわ　みどり氏	岡山大学	JSPS 科研費
15	小嶝　浩　教授	帯広畜産大学	中間レビューに参加
16	木村　亮　教授	京都大学	中間レビューに参加

【2017 年度】

	専門家氏名	所属機関	備考
1	小出　隆夫　教授	鳥取大学	
2	三浦　政司　助教	鳥取大学	
3	竹歳　大樹　技術職員	鳥取大学	
4	小山田耕二　教授	京都大学	
5	青木　翔平　特任助教	慶應義塾大学	

【2018 年度】

	専門家氏名	所属機関	備考
1	岡本 康寛　准教授	岡山大学	

2	齊藤　猛夫　博士	国立研究開発法人農業・食品産業技術総合研究機構	
3	青木　翔平　特任助教	慶應義塾大学	

【2019 年度】

プロジェクト予算の都合上、2019 年度は短期専門家の受入れは行なわなかった。

Project Completion Report

On

AFRICA- ai -JAPAN PROJECT:

African Union

– *african innovation* –

JKUAT and PAUSTI

Network Project

August 2021

Prof. Victoria Wambui Ngumi, Ph. D., EBS
Vice-Chancellor
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Prof. Daniel Ndaka Sila
Chairman
AFRICA- *ai* -JAPAN PROJECT

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LIST OF ABBREVIATIONS AND ACRONYMS

略　語	英　語
ai	African Innovation
AU	Africa Union
AUC	African Union Commission
CeSEM	Center for Scientific Equipment Maintenance
E-JUST	Egypt-Japan University of Science and Technology
iCB	Innovation Center for Bio-resources
iCCATS	Innovative Center for Computing and Technological Solutions
iCEOD	ICT Centre of Excellence and Open Data
iCMoB	Innovation Center for Molecular Biology and Biochemistry
iODaV	Innovative Open Data and Visualization
iPDeC	Innovation Center for Product, Development, and Commercialization
iPIC	Innovation and Prototyping Integrated Centre
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
JKUAT	Jomo Kenyatta University of Agriculture & Technology
Kshs.	Kenyan Shilling
PAU	Pan African University
PAUSTI	Pan African University, Institute of Basic Sciences, Technology and Innovation
PDM	Project Design Matrix
PO	Plan of Operation
SAFARI	Small Animal Facility for Research and Innovation
STI	Science, Technology, and Innovation

Chapter 1: Outline of the AFRICA-ai-JAPAN Project

1-1 Background

Throughout the 1980s and 1990s, the low priority in science and technology fields among the African countries had caused the low quality of science and technology education and brain drain of the specialists in such areas to the other parts of the world. Therefore, revitalizing higher education institutions is the foremost essential means to solve such problems. Under the situation, the African Union Commission (AUC) had launched a plan to establish the Pan African University (PAU) in 2008 to develop human resources for social and economic development in the African continent by raising the level of higher education institutions. Accordingly, the Pan African University, Institute of Basic Sciences, Technology, and Innovation (PAUSTI), one of the five institutes of PAU, was established in 2012 on the campus of Jomo Kenyatta University of Agriculture and Technology (JKUAT). Although JKUAT, a host institute of PAUSTI, had been provided technical cooperation by JICA from 1978 to 2000, its research environment became worse due to the rapid increase of students, shortage of academic staff, and aging equipment.

In January 2013, the Government of Japan agreed with AUC on the Memorandum of Understanding for Cooperation to support PAUSTI as Lead Thematic Partner. In addition, in January 2014, the Government of Japan, the Government of the Republic of Kenya, and AUC signed the Memorandum of Understanding to confirm their cooperation for advancing PAUSTI. Based on these agreements and the request from the Government of the Republic of Kenya that is supported by AUC's letter issued on 25th Nov 2013, Japan agreed to provide technical support to PAUSTI through promoting Science, Technology, and Innovation (STI) activities at JKUAT.

Based on the above background, JKUAT requested the Government of Japan a technical cooperation project to promote STI activities at JKUAT and PAUSTI. Responding to the request, "THE AFRICA - ai - JAPAN Project: African Union - african innovation - JKUAT AND PAUSTI Network Project" was initiated in June 2014 for five years.

The Midterm Review of the Project was conducted in November 2016 and suggested several points to improve the achievement of the project. As a result, the project was extended for one (1) year in January 2019 based on several suggestions to improve the achievement of the project by the Mission of JICA, so the project terminated in June 2020.

1-2 PDM (Project Overview)

The latest PDM, which shows an overview of the project, was approved at the 2nd JCC held in November 2016 as follows;

	概要
Project Title	AFRICA - ai - JAPAN Project: African Union - african innovation - JKUAT AND PAUSTI Network Project
Partner Country's Implementation Organization	Jomo Kenyatta University of Agriculture & Technology (JKUAT), Pan African University, Institute of Basic Sciences, Technology and Innovation (PAUSTI)
Target Group	The academic and technical staff of JKUAT who are or will be involved in teaching and research projects in STI areas at PAUSTI
Overall Goal	Human resources for industry development in the area of science, technology, and innovation (STI) are developed in Africa
Project Purpose	Students who have skills and knowledge enough to create and manufacture STI are produced in JKUAT/PAUSTI
Outputs	1. The research environment in the areas of innovation in JKUAT/PAUSTI is enhanced. 2. Research projects characteristic of Kenya and Africa are put into practice in JKUAT/PAUSTI. 3. Information on research activities of JKUAT/PAUSTI is shared with higher education, research institutions, and industry in Africa and overseas.

1-3 PO: Plan of Operation

PO had been approved at the 2nd JCC in November 2016 and then amended into Version.2 in January 2019, when a one-year extension was agreed upon. The changes are shown as follows;

- Period: 'June 2014 to June 2019' was changed into 'June 2014 to June **2020**' (One-year extension)
- Project activities: 1-3、1-5、1-6、1-7、1-8、2-2、2-8、2-9、2-10、2-11、2-12、3-1、3-2

Almost all of the activities are conducted as planned shown in the PO (Vesrsion.2) attached in the Annex1

Chapter 2: Achievement of Inputs

2-1 Summary

The inputs for the project done by both the Japanese and Kenyan sides are summarized in the following table:

Input	Description
Japanse side: a. Long-term Expert b. Short-term Expert c. Machinery and equipment d. Training in Japan (both long-term and short-term)	a. A total of six (6) long-term experts were dispatched, as shown in 2-2-1 b. A total of fifty-eight (58) short-term experts were dispatched, as shown in 2-2-2 c. A total of 189,694,395Kshs.[1] worth a set of equipment and vehicles were provided as listed in Annex2 d. A total of forty (40) counterparts participated in training in Japan: Eight (8) counterparts for long-term and other thirty-two (32) for short-term training shown in 2-3-1 and 2-3-2, respectively
Kenyan side: a. Counterpart b. Facility, machinery, and equipment c. Project counterpart's budget	a. Faculties, technicians, and staff of JKUAT/PAUSTI were assigned as members of the project b. Approximately a total of Kshs. 250,000 was provided as a Departmental Annual Budget c. Project Office space on the 2nd Floor of ELB was provided to the Project

2-2 Experts from Japan

2-2-1 Long-term Expert

Long-term experts dispatched to the project are as follows;

	Title	Period	Name
1	Chief Advisor	June 2014 to April 2018	Prof. Manabu TSUNODA
2		April 2018 to June 2020	Prof. Hiroshi KOAZE
3	Biotechnology	June 2014 to June 2019	Prof. Shinjiro SHIOMI
4	Project Coordinator	June 2014 to May 2017	Mr. Noriaki TANAKA
5	Project Coordinator /ICT	May 2017 to June 2019	Ms. Sachiko ODA
6	Engineering Education and Research / Project Coordinator	May 2019 to June 2020	Dr. Shohei AOKI

2-2-2 Short-term Expert

Short-term experts dispatched to the project and advised on research, trained, and gave lectures/seminars.

[FY 2014]

	Name	University/Organization	Remarks
1	Prof. Katsuyuku OSAWA	Tottori University	
2	Assistant Prof. Masashi MIURA	Tottori University	
3	Prof. Masaharu MASUDA	Okayama University	

[1] 1Khsh.=¥ 1.01875 (JICA Exchange Rate as of June 2020)

	Name	University/Organization	Remarks
4	Prof. Kiyoshi MORITA	President, Okayama University	
5	Prof. Hiroshi KOAZE	Obihiro University of Agr. & Vet. Medicine	
6	Mr. Shimomura HIROSHI	Media Staff, NHK International	
7	Mr. Koji NAKAI	Media Staff, NHK International	1st time
8	Mr. Koji NAKAI	Media Staff, NHK International	2nd time
9	Prof. and Mrs. NAKAGAWA		for 20th Anniversary
10	Prof. Junkichi IWASA		for 20th Anniversary
11	Prof. Yutaka FUKUI		for 20th Anniversary
12	Prof. Yasutaka KUBO	Okayama University	for 20th Anniversary
13	Prof. Kiyoshi OKUDA	Okayama University	under JSPS fund
14	Prof. Yasutaka KUBO	Okayama University	under JSPS fund
15	Prof. Wataru SAKAMOTO	Okayama University	under JSPS fund
16	Dr. Yuki ICHINOSE	Okayama University	under JSPS fund
17	Prof. Kuniyuki SAITO	Okayama University	under JSPS fund
18	Prof. Nobuhiro SUZUKI	Okayama University	under JSPS fund
19	Prof. Akio TANI	Okayama University	under JSPS fund
20	Assistant Prof. Yoshiyuki TANAKA	Okayama University	under JSPS fund

[FY 2015]

	Name	University/Organization	Remarks
1	Prof. Hisataka TANAKA	Tottori University	own budget
2	Prof. Akira OKADA	Okayama University	
3	Dr. Atsutaka TAMURA	Tottori University	
4	Assistant Prof. Takahiro AKAO	Tottori University	
5	Prof. Katsuyuki OSAWA	Tottori University	
6	Prof. Yoshitoshi TANAKA	Tokyo Institute of Technology	
7	Assistant Prof. Masashi MIURA	Tottori University	
8	Prof. Hiroshi KOAZE	Obihiro University of Agr. & Vet. Medicine	
9	Prof. Makoto KIMURA	Kyoto University	
10	Prof. Hiroshi KANZAKI	Okayama University	under JSPS fund
11	Prof. Yasutaka KUBO	Okayama University	under JSPS fund
12	Prof. Wataru SAKAMOTO	Okayama University	under JSPS fund
13	Prof. Nobuhiro SUZUKI	Okayama University	under JSPS fund
14	Prof. Ian GALIS	Okayama University	under JSPS fund

[FY 2016]

	Name	University/Organization	Remarks

1	Dr. Ahmed Mohamed Rashad Fathel Bab	E-JUST	
2	Prof. Atsushi HAGIWARA	Nagasaki University	
3	Prof. Masayuki TANI	Obihiro University of Agr. & Vet.Medicine	
4	Dr. Ahmed Mohamed Rashad Fathel Bab	E-JUST	
5	Prof. K.MORITA, President	Okayama University	under JSPS fund
6	Prof. Kenji SATO	Okayama University	under JSPS fund
7	Prof. Ysutaka KUBO	Okayama University	under JSPS fund
8	Prof. Wataru SAKAMOTO	Okayama University	under JSPS fund
9	Prof. Ivan GALIS	Okayama University	under JSPS fund
10	Prof. Naoki NISHINO	Okayama University	under JSPS fund
11	Prof. Tanjiro GOTO	Okayama University	under JSPS fund
12	Prof. Akio TANI	Okayama University	under JSPS fund
13	Prof. Yoshiyuki TANAKA	Okayama University	under JSPS fund
14	Ms. Midori HAYAKAWA	Okayama University	under JSPS fund
15	Prof. Hiroshi KOAZE	Obihiro University of Agr. & Vet. Medicine	For Mid-term review
16	Prof. Makoto KIMURA	Kyoto University	For Mid-term review

[FY 2017]

	Name	University/Organization	Remarks
1	Prof. Takao KOIDE	Tottori University	
2	Assistant Prof. Masashi MIURA	Tottori University	
3	Mr. Daiju TAKETOSHI	Tottori University	
4	Prof. Koji KOYAMADA	Kyoto University	
5	Project Assistant Professor. Shohei AOKI	Keio University	

[FY 2018]

	Name	University/Organization	Remarks
1	Associate Prof. Yasuhiro OKAMOTO	Okayama University	
2	Dr. Takeo SAITO	The National Agriculture and Food Research Organization (NARO)	
3	Project Assistant Professor. Shohei AOKI	Keio University	

[FY 2019]

None was dispatched in FY 2019.

2-3 Training in Japan

2-3-1 Long-term training for Ph.D. Course

Eight (8) faculties acquired Ph. D in Japanese university through Long-term training under the project as listed below. In addition, Dr. Ruthandi, (No.9 in the following list) was funded by the Ministry of Education in Japan, and Dr.Francis and Dr. Meshak were funded by E-JUST, and acquired Ph. D as well.

	Name	Graduate School, University	Sub-task Force	Graduation Year
1	Dr. James Mutuku Mutua	Graduate School of Engineering, Tottori University	iPIC	2017
2	Dr. Eunice Nduati	Center for Environmental Remote Sensing, Chiba University	iPIC	2018
3	Dr. Geoffrey Sing'ombe (Recommended by JICA)	Graduate School of Natural Science and Technology, Okayama University	iCB	2018
4	Dr. Teresia Aluoch Muhomah (Recommended by JICA)	Graduate School of Natural Science and Technology, Okayama University	iCMoB	2018
5	Dr. Annah Indeche	Graduate School of Natural Science and Technology, Okayama University	iCB	2019
6	Dr. Bernard Owiti	Graduate School of Engineering, Tottori University	iPIC	2019
7	Dr. Robert Nesta Kagali	Graduate School of Fisheries and Environmental Sciences, Nagasaki University	iCMoB	2019
8	Dr. Justus Mutuku Maithya	Faculty of Engineering, Kyushu University	iPIC	2019
9	Dr. Martin Ruthandi Maina	Graduate School of Environmental and Life Science, Okayama University	iPIC	2019
10	Dr. Njoka Francis Namu	E-JUST Energy Resources Engineering	iPIC	2019
11	Dr. Ochieng Meshak Hawi	E-JUST Energy Resources Engineering	iPIC	2019

2-3-2 Short-term training

32staff participated in a Short-term training program in Japan. The details are as follows;

[FY2014]

	Name (Sub-task force)	Graduate School, University
1	Mr. Daniel Omondi (iPIC)	Faculty of Engineering, Innovation Center for Engineering Education (ICEE), Tottori University
2	Mr. James Mutuku Mutua (iPIC)	
3	Prof. Bernard W. Ikua (iPIC)	
4	Prof. Walter O. Oyawa (iPIC)	

[FY2015]

	Name (Sub-task force)	Graduate School, University
1	Mr. Ben Maniafu (iPIC)	Faculty of Engineering, Tottori University
2	Mr. Patrick Kavagi (iCB)	Graduate School of Environmental and Life Science, Okayama University
3	Mr. Paul Karanja (iCB)	Department of Life and Food Science, Obihiro University of Agr. & Vet. Medicine
4	Ms. Grace Wambui Kimani (iCMoB)	Graduate School of Environmental and Life Science, Okayama University
5	Prof. Losenge Turoop (iCB)	Obihiro University of Agr. & Vet. Medicine Okayama University Tokyo University of Agriculture and Technology
6	Dr. Daniel Sila (iCB)	
7	Prof. Naomi Maina (iCMoB)	
8	Dr. Peter Mwangi (iCMoB)	
9	Dr. Adrew Nyerere (iCMoB)	

10	Prof. Romanus Odhiambo Otieno (PD)	Tokyo Institute of Technology Kyoto University Osaka University
11	Prof. Martin Obanda (iPDeC)	
12	Eng. B.K. Kariuki (iPDeC)	
13	Dr. Thomas Ngigi	Chiba University
14	Ms. Eunice Wanjiku Nduati	
15	Prof. Mabel Imbuga	Japan Machinery Center for Trade and Investment

[FY2016]

	Name (Sub-task force)	Graduate School, University	Purpose
1	Ms.Mingate Rose Nyaboke (iCB)	Obihiro University of Agriculture and Veterinary Medicine	• Soil Diagnosis Technology for Sustainable Agricultural Production and Environmental Conservation
2	Mr. Harrison Mutua (iPIC)	JICA Chubu International Center	• Industry Engineering Education
3	Dr. Margaret Oloko (iPDeC)	Toyohashi University of Technology	• Promotion of Local Industry by Cluster Approach
4	Mr. Fredrick Otswongo (iPDeC)		
5	Mr.Daniel Omondi (iPIC)	Faculty of Engineering and Innovation Center for Engineering Education (ICEE), Tottori University	• Production Engineering Training and Research towards Innovation
6	Mr.Francis Kimuyu (iCB)	Faculty of Agriculture, Okayama University	• Biotechnology Training toward Innovation
7	Ms.Jane Wacera Kiarie (iCMoB)	Institute of Plant Science and Resources, Okayama University	• Microbiology Training towards Innovation
8	Prof.Muliaro Wafula (iCMoB)	Academic Center for Computing and Media Studies, Kyoto University	• Computing and Media Studies (ICT and Open Data)

[FY2017]

	Name (Sub-task force)	Graduate School, University	Purpose
1*	Mr. Gilbert Kipng'etich Bett (iPIC)	Kyushu University	• Intensive Training for Geothermal Resource Engineers
2*	Mr. Alvin Kiplpno Bett (iPIC)		
3	Mr.Daniel Omondi (iPIC)	Faculty of Engineering and Innovation Center for Engineering Education (ICEE), Tottori University	• Production Engineering Training and Research towards Innovation

*The training listed in 1 and 2 was conducted through the JICA Knowledge Co-Creation Program (Group & Region Focus), which shall be implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments.

[FY 2018]

	Name (Sub-task force)	Graduate School, University	Purpose
1	Mr. Njoka Francis Namu (iPIC)	Tokyo Institute of Technology (Tokyo Tech)	• Data collection and analysis for Doctoral thesis
2	Mr. Ochieng Meshak Hawi (iPIC)		

*Both are dispatched under E-JUST's Ph.D. Research Program in Japan during their Ph. D course at E-JUST.

[FY 2019 年度]

No one was dispatched due to a budget constraint.

2-4 Machinery and equipment

The total amount of procured machinery and equipment is shown in the following table. The procured equipment is listed in the Annex2.

(Kshs.)

JFY / Sub-task / Deartment	2014	2015	2016	2017	2018	2019	2020	Total
iCB	2,000,000	841,600	22,113,819	1,095,150	7,940,800	6,885,267	20,921,000	**61,797,636**
iPIC	0	8,000,000	64,434,901	0	905,060	6,254,501	0	**79,594,462**
iCMoB	5,037,223	2,573,580	16,943,280	2,390,366	640,800	386,995	0	**27,972,244**
DIPUIL	0	0	566,700	0	0	0	0	**566,700**
iODaV	0	0	496,000	0	0	0	0	**496,000**
Corporate	0	0	3,005,300	0	0	0	0	**3,005,300**
iCCATS	0	0	940,000	0	0	4,965,000	0	**5,905,000**
Project	5,397,744	952,127	2,138,369	1,751,318	117,495	0	0	**10,357,053**
Total	**12,434,967**	**12,367,307**	**110,638,369**	**5,236,834**	**9,604,155**	**18,491,763**	**20,921,000**	**189,694,395**

2-5 Activity Cost

An activity cost was mainly used for Innovation Research, a competitive research fund for JKUAT/PAUSTI faculties and students, and aimed their capacity to develop education and research. The number and amount of funded research projects are shown in the Achievement of Output2-2 below. In addition, enhancing the research environment through renovations of SAFARI, iPIC and ALB was also one of the leading project activities. Therefore, the actual cost every year is shown as follows.

FY	Actual Cost (JPY)
2014	102,829,978
2015	171,957,066
2016	130,087,766
2017	276,776,560
2018	169,712,018
2019	121,052,204
2020	26,284,610
Total	998,700,202

Chapter 3: Achievement of Outputs

3-1 Output 1: Research environment in the areas of innovation in JKUAT/PAUSTI is enhanced

[Summary]
Research equipment procurement is completed, and the organization of maintenance and repair for equipment is established. In addition, eight (8) young researchers earned a Doctoral degree through the long-term training program, and fifty-seven (57) staff members were trained in the operation and maintenance of pieces of machinery.

Indicators	Major Achievement
1.1 Key pieces of machinery and equipment necessary for researches are repaired or procured in JKUAT/PAUSTI.	(1) Equipment procurement JKUAT / PAUSTI's equipment inventory was elaborated, and a list was prepared in the "Preparatory Survey" stage conducted before the start of the project. At the same time, requests for necessary equipment were collected. After the beginning of the project, equipment and research materials were procured based on this request. (2) Elaboration of equipment list The equipment list elaborated in the "Preparatory Survey" was updated based on a new inventory and/or malfunction by each Sub-task force and/or department during the Project period. Furthermore, the newly compiled equipment list is now on CeSEM's database and can be accessed online, supported by Dr. Aoki. (3) Maintenance and repair of equipment and facilities Repairing research equipment is indispensable for improving the research environment, and therefore, there was a need to build a system/organization for maintenance and repair on campus. And then, a new section, CeSEM, which is in charge of maintenance and repair of equipment, was officially established in 2018. However, CeSEM has several issues and still needs support for further development and enhancement of the system, including funding, expertise staffing.
1.2 8 young researchers of JKUAT/PAUSTI participate in a long-term training program in Japan and receive doctoral degree.	Eight (8) young researchers of JKUAT/PAUSTI acquired a doctoral degree by participating in a long-term training program in Japan.
1.3 At least 25 staff members of JKUAT/PAUSTI participate in training for capacity development regarding the operation and maintenance for machineries and equipment and all the trainees achieve 100% understanding on the maintenance of machineries and equipment in charge.	Thirty-two (32) counterparts participated in short-term training in Japan, and seven (7) of them took training focusing on equipment operation and maintenance for research activities. Those who joined the short-term training were responsible for disseminating the knowledge gained through the training to other JKUAT / PAUSTI colleagues, such as technologists and graduate students. They shared their knowledge and skills with them through seminars courses and Sub-task force regular meetings. The table below shows the participants' number of short-term training in Japan. Table.1 Number of participants in short-term training in Japan JFY | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | **Total** Number | 4 | 15 | 8 | 3 | 2 | 0 | **32** In addition, some Japanese experts provided training on research equipment operation and maintenance in Kenya. For example, in 2018 and 2019, Dr. Aoki, JICA Expert, trained fifty (50) Kenyans, and therefore, a total of fifty-

	seven (57) Kenyans were trained on research equipment Operation and maintenance. There are a few opinions that the level of understanding of the short-term training was influenced by the depth of specialized knowledge and technical term knowledge of Japanese-English interpreters though, most of the participants understood well.

3-2 Output 2: Research projects characteristic of Kenya and Africa are put into practice in JKUAT/PAUSTI

[Summary]
Each Sub-task force mainly updated the annual Plam at the same time of application for Innovation Research, and Mid-term Plan was revised suitably. Additionally, 346 (minimum number, some of them are overlapped) of JKUAT/PAUSTI staff and students took part in OJT through the Innovation Research and the short-course training by Japanese experts.

Indicators	Major Achievement
2.1 Mid-term plan and plan of action on innovation are formulated and updated on an annual basis.	(1) Annual Plan Each Sub-task force compiles innovation Research Proposals on an annual basis as their action plan toward innovation is positioned as an annual plan of the project. Therefore, an annual plan was annually updated. (2) Mid-term Plan The mid-term plan was composed of Key Thematic Research Areas of Sub-taskforce and PO and updated appropriately.

Table.2 Key Thematic Research Areas of Sub-task forces

iPIC	iCMoB
1. Environment and Infrastructure 2. Sustainable TransportVehicles and Systems 3. Agricultural and Industrial Machineries 4. Manufacturing Processes	1. Drug and Disease Control 2. Biodiversity and Conservation 3. Food Security and Value Addition
iCB	**iPDeC**
1. Food Security and Value Addition 2. Bio-diversity and Conservation 3. Animal Health and Production 4. Bio-resources and Waste Management	1. machinery Development 2. Drug and disease control 3. Food security 4. Value addition
iODaV (Changed to iCCATS since July 2019)	
1. Open Research Data-based Innovation 2. Data Analytics 3. Data, Info & Scientific Visualization 4. Smart Learning Think Board S/W 5. Open Data Principles, Stds & JORD 6. Reuse of Research Data	

2.2	10 research projects characteristic of Africa are annually selected and put into practice through the open competition targeted researchers of JKUAT/PAUSTI.	Since the beginning of the pilot project in 2014, Innovation Research Activity has been adopted and implemented until 2019. The following table shows the number of proposals and the number of researches conducted from 2014 to 2019. As indicated, 180 research projects and Kshs. 83,268,702 were financed and conducted. The number of received proposals and funded researches is shown below;

Table. 3.1 Number of received proposals and funded Innovation Research (JFY2014-2016)

Sub-task force	2014		2015		2016	
	Proposals	Funded	Proposals	Funded	Proposals	Funded
iPIC	7	7	21	16	14	8
iCB	7	7	17	9	24	8
iCMoB	6	6	24	13	53	22
Total	**20**	**20**	**62**	**38**	**91**	**38**

Table. 3.2 Number of received proposals and funded Innovation Research (JFY2014-2016)

Sub-task force	2017		2018		2019	
	Proposals	Funded	Proposals	Funded	Proposals	Funded
iPIC	26	10	27	7	0	0
iCB	80	10	25	7	0	0
iCMoB	59	23	72	7	0	0
iODaV	23	8	19	4	0	0
iCCATS	-	-	-	-	-	-
Inter-disciplinary	4	4	6	2	47	2
Total	**192**	**55**	**149**	**27**	**47**	**2**
GT	**561**	**180**				

Only inter-disciplinary research projects were focused on in JFY2019 due to budget constraints, then the number of funded was less than before. The number of received proposals and funded researches per Sub-task force is indicated in the following Table.

Table. 4 Number of received proposals and funded Innovation Research per Sub-task force

JFY	Sub-task force	Proposals	Funded	Amount of funded (Kshs.)
2014	iCB	7	7	1,500,000
	iCMOB	14	6	1,500,000
	iPIC	14	7	1,762,500
	iODav			
	Interdisciplinary			
	Sub-total	**35**	**20**	**4,762,500**
2015	iCB	17	9	6,000,000
	iCMOB	24	13	6,003,702
	iPIC	15	16	6,980,000
	iODav			
	Interdisciplinary			
	Sub-total	**56**	**38**	**18,983,702**
2016	iCB	24	8	5,950,000
	iCMOB	53	22	6,000,000
	iPIC	14	8	5,950,000
	iODav			
	Interdisciplinary			
	Sub-total	**91**	**38**	**17,900,000**

JFY	Sub-task force	Proposals	Funded	Amount of funded (Kshs.)
2017	iCB	77	10	4,100,000
	iCMOB	59	23	5,050,000
	iPIC	25	10	4,277,500
	iODav	23	8	4,000,000
	Interdisciplinary	4	4	2,100,000
	Sub-total	**188**	**55**	**19,527,500**
2018	iCB	28	7	3,800,000
	iCMOB	64	7	4,710,000
	iPIC	27	7	3,785,000
	iODav	19	4	2,100,000
	Interdisciplinary	6	2	1,100,000
	Sub-total	**144**	**27**	**15,495,000**
2019	iCB			
	iCMOB			
	iPIC			
	iODav			
	Interdisciplinary	47	2	6,600,000
	Sub-total	**47**	**2**	**6,600,000**
Grand Total Amount of Funded				**83,268,702**

2.3 More than 30 young researchers (TA, TF, and Technologists) of JKUAT/PAUSTI take on-the-job training through the implementation of JICA-supported research projects.

OJT training was conducted through (1) innovation research and (2) training by Japanese experts. As reported in Indicator 2-2, 180 research projects were conducted from 2014 to 2019. Since research involves at least one researcher, the number of researchers who have undergone OJT training can be regarded as the minimum number of researchers. In addition, 166 researchers/technologists and students participated in training by Japanese experts in total. Thus a total of 346 (minimum number, some of them are overlapped) of JKUAT/PAUSTI staff and students took OJT through the project period.

Table.5 Trainings by Japanese experts (JFY2016~2019)

JFY	Date (Period)	Title of Training (Implementation)	Participants
2016	15th to 25th Mar 2017 (8 Days)	Technical Operation and Maintenance training on CNC Milling, 3D Printer and 3D Modelling (Mr. Daiju Taketoshi)	9 participants: Technologists (Engineering workshop)
2017	29th to 30th June 2017 (2 Days)	SAFARI Training on Animal care and handling	8 participants: 3 Technologists, 5 JKUAT/PAUSTI students
	13th to 15th Sep 2017 (3 Days)	Training on Assembling of Fume Filter using the milling machine (Mr. Daiju Taketoshi)	11 participants: 1 Technologist (Mechatronics), 4 Technologists (Engineering workshop), 6 JKUAT students
	13th to 15th Sep 2017 (3 Days)	Training on how to make gear using an involute cutter (Mr. Daiju Taketoshi)	6 participants: 3 Technologists 3 Teaching Assistants
	13th to 15th Sep 2017 (3 Days)	Training on installation and commissioning of the laser cutter (Mr. Daiju Taketoshi)	12 participants: 4 Technologists (Engineering workshop) 1 Technologist (Mechatronic) 6 Students (Mechatronic Engineering) 1 Student (Marine Engineering)
	30th Nov to 1st Dec 2017 (2 Days)	SAFARI Training on Animal Care and Handling	14 participants: 5 Technologists (Human Anatomy Department) 4 JKUAT Students 5 Teaching Assistants

	5th to 9th Feb 2018 (5 Days)	Training on Digital Fabrication Tools and Software (Dr. Shohei Aoki [Short-term Expert])	17 participants: Technologist (Engineering workshop)

年度	開催日時	研修タイトル（実施者）	参加者数：属性
2018	6th to 9th Jun 2019 (2 Days)	SAFARI Training on Animal Handling	18 participants: JKUAT and PAUSTI Ph.D./MSc students
	2nd to 3rd Aug 2019 (2 Days)	SAFARI Training on Animal Handling	12 participants: 4 Technologists 8 JKUAT and PAUSTI Ph.D. and MSc students
	10th to 14th Sep 2018 (4 Days)	Training on Culture and Inoculation of Bacteria Wilt (Prof. Takeo Saito)	17 participants: 1 Technologist 1 Dean 4 Lecturers 2 Research Assistants 9 Ph.D./MSc students
	5th to 12th Sep 2018 (5 Days)	Workshop on Digital Fabrication: Mobile robot fabrication and programming (Dr. Shohei Aoki [Short-term Expert])	14 participants: Technologists (Engineering workshop)
2019	2019 年 6 月 24 日	PCB design and fabrication training (Dr. Shohei Aoki [Short-term Expert])	15 participants: Technologists
	2019 年 8 月 12 ～16 日 (5 日間)	Molecular Biology Training	9 participants: Technologist, Postgraduate student (MSc/Ph.D.)
	2019 年 9 月 4 日	PCB design and fabrication training (Dr. Shohei Aoki [Long-term Expert])	4 participants: Technologists
		TOTAL	**166 Participants**

In addition, the seed fund for PAUSTI students is provided by the project to initiate their research. It is not categorized under OJT in the project but is one of the ways to train young researchers. A total of 302 students obtained the seed fund.

Table 6. Seed funds provided to PAUSTI Students (JFY2015-2018)

JFY	2015	2016	2017	2018	Grand Total
Number	48	54	82	118	302
Amount (Kshs.)	3.360,000	3,779,900	5,740,000	6,863,000	19,742,900

3-3 Output 3: Information on research activities of JKUAT/PAUSTI is shared with higher education, research institutions and industry in Africa and overseas

[Summary]
More than ten (10) Research seminars, symposia, workshops, and conferences mainly organized by JKUAT/PAUSTI are held in the Project period. In addition, Seminars in collaboration with private companies are also held more than twice.

Indicators	Major Achievement
3.1 Research seminars, symposia, workshops, and	Since the beginning of the project in 2014, seminars organized by JKUAT or PAUSTI have been held more than twice a year. The "SRi Conference (SRi: Sustainable Research and Innovation)" in May and the "JKUAT Scientific Conference" in November were held, respectively.

	conferences organized by JKUAT/PAUSTI are held at least twice a year.	SRi Conference mainly focuses on science and technology such as agriculture, engineering, science, and ICT. These two conferences serve as presentations for JKUAT faculty members, JKUAT/PAUSTI students, and non-JKUAT teachers/students. However, efforts are also being made to seek collaboration between industry and academia. Project personnel (long-term and short-term experts from Japan) gave many keynote speeches to share and disseminate information at those conferences.
3.2	Seminars in collaboration with private companies are held at least twice a year	JKUAT Scientific, Technological and Industrialization Conference, and SRi Conference have been held 6 times, collaborating with private companies. Furthermore, innovation Incubation Seminars on 'Transforming JKUAT into Innovations Entrepreneurial University' started in 2018. They were held 9 times in 2018 and 3 times in 2019 as of the terminal evaluation, "University-Industry Linkage Workshop" were also held. Therefore, more than two (2) seminars were held in collaboration with private companies each year. Special seminars with Dr. Ahmed Mohamed Rashad Fathel Bab from E-JUST and Prof. Binh Ly Nguyen from 2) Can Tho University in Vietnam were also given to JKUAT/PAUSTI staff and students a part of activities for creating an international linkage with higher education in Africa and overseas.

Table7. Participants and Presentations of Conferences

JFY	Conference	Number of Participants	Number of Presentations
2014	Scientific	400	85
2015	SRi	320	49
	Scientific	220	66
2016	SRi	250	42
	Scientific	250	73
2017	SRi	250	46
	Scientific	160	67
2018	SRi	250	47
	Visualization*	80	35
	Scientific	250	63
2019	SRi	250	44
	Scientific	250	44

*Visualization Conference was held in August 2018

3-4 Project Purpose: Students who have skills and knowledge enough to create and manufacture STI are produced in JKUAT/PAUSTI

[Summary]
JKUAT/PAUSTI regularly enroll new students and produce graduates with the skill and knowledge in STI, publishing academic papers under the enhanced research environment by the project.

Indicators	Major Achievement
1 Information on laboratories in periodically updated and necessary machineries and equipment are repaired or procured based	From the beginning of the project until 2017, the JKUAT and the Project procured equipment based on its list prepared by the preparatory survey team. After some of them were equipped, the subtask force discussed how equipment is managed and maintained. With the discussion among the subtask force mentioned above, JKUAT officially established CeSEM in May 2018, and the senior technologist was appointed. CeSEM created an equipment database with the assistance of Dr. Aoki for JKUAT teachers/technologists to manage information on equipment at each laboratory and apply repairing to CeSEM online. The information on repairing is also shared through the database for teachers/technologists at the same time. It is expected that JKUAT's

on the updated information.	equipment record and repairing information to be updated regularly on the database. CeSEM is, therefore, able to manage and update the equipment list and built a repair. On the other hand, the budget allocation to CeSEM by JKUAT is still limited, and the JICA project purchases spare parts instead of JKUAT to supply them. In addition, the lack of a mechanism for paying repairing costs from each department to CeSEM is also an issue to maintain and repair equipment sustainably. This issue should be solved while the Phase2 Project is ongoing.
2 More than 100 academic papers per year written by researchers of JKUAT/PAUSTI are published in refereed journals in Africa and Overseas.	Every subtask force has not reported the number of publications until 2017, and there was no mechanism to summarize it. With this situation, Project one (1) year extension was agreed on at the 4th JCC in November 2018 to enhance the capacity for research publication. Furthermore, as the result of focusing on the activity for capacity building on the publication, "Abstracts of Scientific Publications" was compiled in June 2019 by the subtask forces in June 2019. Table.8 Number of academic papers published by Task Force and PAUSTI **JFY** / **Task Force** / **PAUSTI** / **Total** 2014 / 21 / 41 / 62 2015 / 34 / 22 / 56 2016 / 36 / 41 / 77 2017 / 30 / 48 / 78 2018 / 63 / 90 / 153 2019 / 124 / 18* / 142 **Grand Total** / **308** / **260*** / *Number of publications by PAUSTI is as of December 2019, thus the number of Grand Total is too. Table.9 Number of academic papers published by each Sub-task Force **JFY** / **iCMoB** / **iPIC** / **iCB** / **iCCATS** / **Total** 2014 / 6 / 2 / 13 / / 21 2015 / 12 / 2 / 20 / / 34 2016 / 14 / 1 / 21 / / 36 2017 / 22 / 3 / 5 / / 30 2018 / 12 / 47 / 4 / / 63 2019 / 12 / 32 / 69 / 11 / 124 **Grand Total** / **78** / **87** / **132** / **11** / **308** Although the number of graduates of the PAUSTI doctoral program was fewer than expected, as shown below, all graduates from PAUSTI published papers before their graduation. Table. 10 Number of PAUSTI Graduates **JFY** / **Number of Graduates** 2014 / 55 (Only Master) 2017 / 42 (Only Master) 2018 (June)* / 46 (Master 32, Ph. D 14) 2018 (November) / 51 (Master 46, Ph. D 5) 2019 / 114 (Master 70, Ph. D 44) *Graduation ceremony for PAUSTI students usually is held at the same time as JKUAT in November; however, it was held in June only in 2018 due to the timing of their enrollment.

3	More than 80 academic/research institutions and private companies participate in research seminars, symposia, workshops, and conferences organized by JKUAT/PAUSTI.	Since the beginning of the project, more than 160 academic institutions, research institutions, and private companies have participated in seminars organized by JKUAT/PAUSTI. Therefore, the total number of organizations and private companies which participated in various seminars organized by JKUAT/PAUSTI was about 160 or more. According to the record and data, the number of participants is recorded by the project team. However, the number of participating organizations was not recorded sometimes, so the sum is the minimum value.

Table. 11 Number of Academic/Research institutions and Private companies Participated in Seminars hosted by JKUAT / PAUSTI

JFY	Varieties of Seminars	Participants
2014	Special Seminars by Short-term Experts	2
	STI Symposium	1
	SRi Conference	29
2015	SRi Conference, Scientific Conference and others	30
	Joint Seminars	1
2016	Final Presentations of Innovation Research	2
	SRi Conference, Media Arts Festival, and others	27
	A Pre-event of TICAD V	4
	Special Seminars by Short-term Experts	6
2017	Special Seminars by Short-term Experts	2
	Seminars for PAUSTI students	9
2018	Special Seminars by Short-term Experts	5
	Innovation Incubation Seminar	9
	SRi Conference, Scientific Conference, and others	7
2019	Industrial Linkage Workshop	14
	SRi Conference, Scientific Conference, and others	12
Grand Total		**160**

It is expected that research and its outcomes will be widely disseminated to communities and industries in Africa. In addition, collaborative activities with industries such as internship and collaborative research will also be promoted through research seminars, symposia, workshops, and conferences for JKUAT/PAUSTI to be a hub educational and research institution in STI in Africa.

Chapter 4: Joint Coordination Committee (JCC)

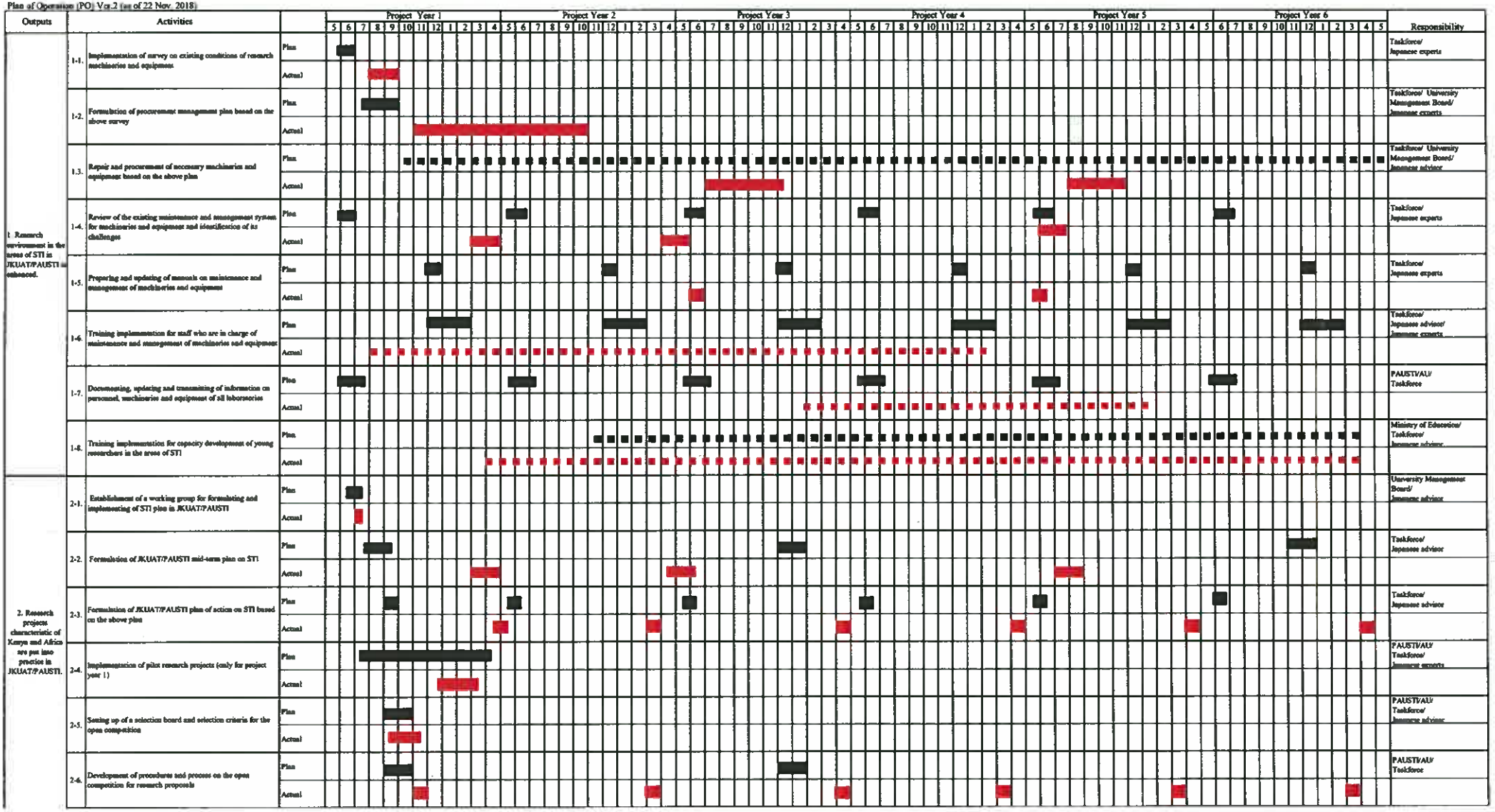
JCC Meetings were held five times during the Project period. Agendas for those meetings are as follows, and the minutes of meetings are referred to in Annex 3.

	Date	Agendas
1st	5th Nov 2015	• Reviews of Background and Overview of the Project • Presentations Inputs up to the date and Plan of Activities by each Sub-task force (iPIC, iCB, iCMoB, and iPDeC) • Updating Information of PAU/PAUSTI • Proposal of Action Plan with Key Issues • Approval of PDM and PO
2nd	22nd Nov 2016	• Confirmation of Minutes of the 1st JCC Meeting • Reviews of Basic Concepts, Key Events, and Inputs of the Project (November 2015 to October 2016) • Presentations on Key Results/Uniqueness/Attractiveness (November 2015 to October 2016) and Activities Plan by each Sub-task force (iPIC, iCB, iCMoB and iPDeC) • Updating Information of PAU/PAUSTI • Report from Mid-term Review Mission and Signing of Minutes of Meeting
3rd	21st Nov 2017	• Confirmation of Minutes of the 2nd JCC Meeting • Reviewing Key Actions of the Project (November 2016 to October 2017) • Presentations on Key Results/Uniqueness/Attractiveness (November 2016 to October 2017) and Activities Plan by each Sub-task force (iPIC, iCB, iCMoB iPDeC and iODaV) • Updating Information of PAU/PAUSTI • Handing Over of iPIC, SAFARI Buildings and Equipment procured in between June 2014 and October 2017
4th	22nd Nov 2018	• Confirmation of Minutes of the 3rd JCC Meeting • Reviewing Key Actions of the Project (November 2017 to October 2018) • Presentations on Key Results/Uniqueness/Attractiveness (November 2017 to October 2018) and Activities Plan by each Sub-task force (iPIC/CeSEM, iCB, iCMoB iPDeC and M&E) • Updating Information of PAU/PAUSTI • Way Forward Suggestion and Approval of one-year extension of the Project Period (June 2019 to June 2020)
5th	20th Nov 2019	• Confirmation of Minutes of the 4th JCC Meeting • Reviewing 5year's Key Inputs by JICA and Outputs of the Project • Presentations on Summary of Outputs, Key African Innovations, Industry Linkages, and Disseminations by each Sub-taskforce (iPIC/SeCEM, iCB, iCMoB, and iCCATS) • Updating Information of PAU/PAUSTI • Reporting of Final Evaluation of the Project and way Forward for the Project (AFRICA-ai-JAPAN Project Phase2) • Summarizations by the chairman of the Japanese Supporting Universities Consortium (Prof. M. Kimura, Kyoto University)

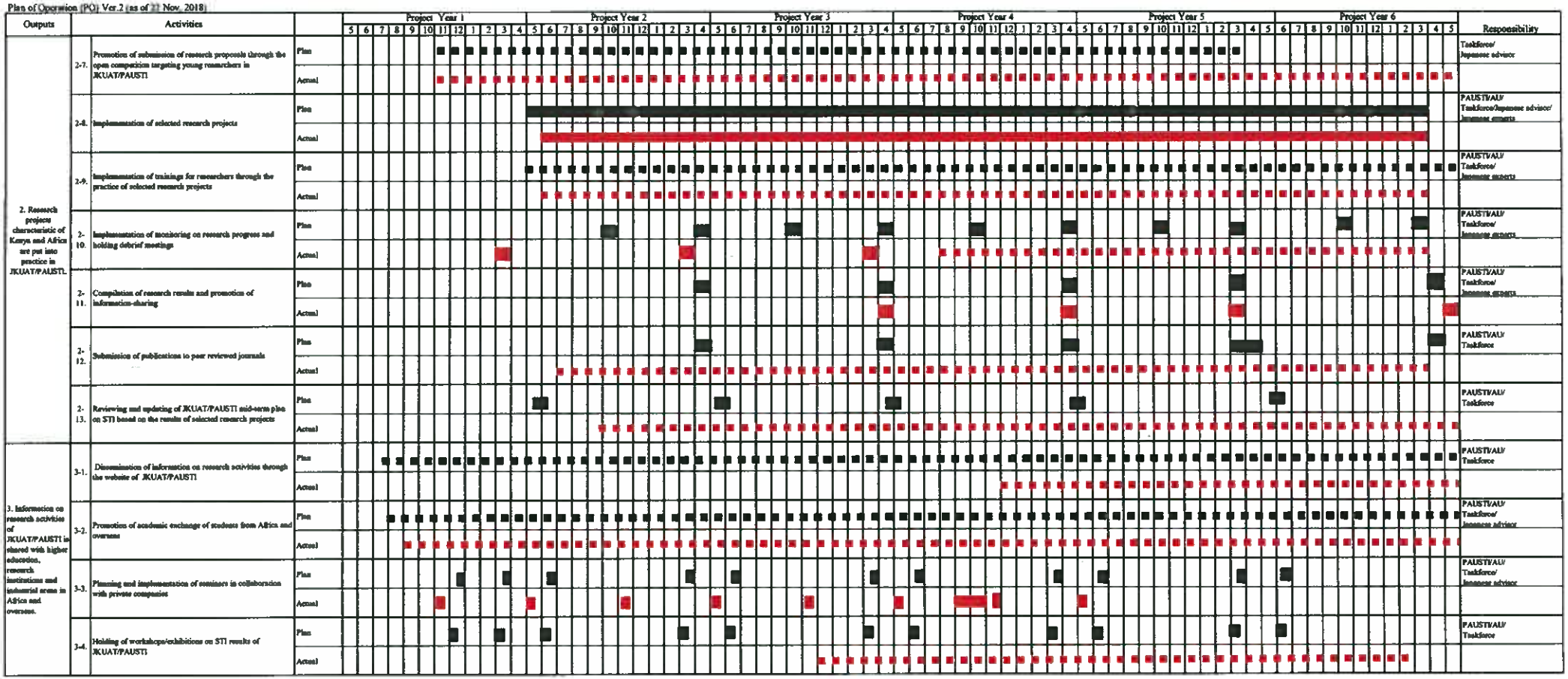
[Annex]

1. Plan of Operation (PO)
2. List of Procured Machinery and equipment
3. Minutes of Meeting of 1st to 5th JCC

Plan of Operation (PO) Ver.2 (as of 22 Nov. 2018)



Plan of Operation (PO) Ver.2 (as of 27 Nov. 2018)



S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
1	LASER PRINTER / CUTTER - Universal laser system	1	iPIC Advanced research lab/design RM	JJFY 2015	iPIC
2	Portable Air Compressor	1	iPIC Advanced research lab/design RM	2017.07.26	iPIC
3	Hach water equipment	1	iPIC BEED	2017.03.24	iPIC
4	HQ30d portable meter package with PHC 301 PH Electrode DO and CD401 conductivity /DTS/Salinity	1	iPIC BEED	2017.03.15	iPIC
5	Generator QAS160	1	iPIC Behind machine shop	J JFY 2016	iPIC
6	Ammonia probe STD, w/1m cable	1	iPIC Board room	2017.03.15	iPIC
7	PLC power supply LABPS3005	1	iPIC Brainstorming room	2017.03.20	iPIC
8	pliers	5	iPIC Brainstorming room	2017.03.16	iPIC
9	Side cutter	3	iPIC Brainstorming room		iPIC
10	SINTER BACK PLATE FOR S SERIES VACUUM TABLE	1	iPIC Brainstorming room		iPIC
11	Soldering Iron	7	iPIC Brainstorming room		iPIC
12	wire striperl cuter/crimper	1	iPIC Brainstorming room		iPIC
13	bench grinder- GB602	1	IPI workshop	2017.03.21	iPIC
14	Drill press vice	1	IPI workshop	2017.02.22	iPIC
15	hand drill 13mm	1	IPI workshop	2017.03.21	iPIC
16	hand grinder big 4"	1	IPI workshop	2017.03.21	iPIC
17	hand grinder big 7"	1	IPI workshop	2017.03.21	iPIC
18	machine vice 6" (drilling vice)	1	IPI workshop	2017.03.21	iPIC
19	open spanner 6-32 mm HEYCO	1	IPI workshop	2017.03.16	iPIC
20	Record G clamps 6"	2	IPI workshop	2017.03.21	iPIC
21	set tork allen key 2 -10 MM	1	IPI workshop	2017.03.21	iPIC
22	single phase cutting off machine (JIG400Z) (oxy-acetelyn gas)	1	IPI workshop	2017.03.21	iPIC
23	toolbox 1 set (Electronic tool box)	1	IPI workshop	2017.02.22	iPIC
24	welding and cutting complete outFit	1	IPI workshop	2017.03.21	iPIC
25	CNC milliimg nachine XYZ150VMC	1	Machine Shop	2016	iPIC
26	Compressed Air Gun (Hot Bond Gun)	1	Machine Shop	JJFY 2014	iPIC
27	Digital Vernier Caliper	1	Machine Shop	2017.03.17	iPIC
28	Parting off holder 1/8 x3/4 HSS	5	Machine Shop	2017.03.16	iPIC
29	Wire EDM-AWT65	1	Machine Shop	JJFY 2016	iPIC
30	adjustable spanner (record)	2	Modelling studio	2017.03.16	iPIC
31	ArDuino	5	Modelling studio		iPIC
32	AtMaga IC	7	Modelling studio		iPIC
33	Breadboard 60 ports	5	Modelling studio		iPIC
34	Breadboard 30 ports	5	Modelling studio		iPIC
35	Center Punch (auto punch)	5	Modelling studio		iPIC
36	Crimping tools	3	Modelling studio		iPIC
37	Curved tin snips	2	Modelling studio		iPIC
38	DC Millimeters	2	Modelling studio		iPIC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
39	Depth gauge (0-150mm)	2	Modelling studio	2017.02.22	iPIC
40	desoldering iron	3	Modelling studio		iPIC
41	development boards	1	Modelling studio	2017.03.20	iPIC
42	Digital multimeters-17B+FLUKE	1	Modelling studio		iPIC
43	Electronic master Toolbox kit	1	Modelling studio	2017.02.22	iPIC
44	gyro sensors	1	Modelling studio	2017.03.20	iPIC
45	Hot air gun (heat gun)	2	Modelling studio		iPIC
46	INSPECTION MICROSCOPE 60X	1	Modelling studio	JFY 2016	iPIC
47	motor drive	1	Modelling studio	2017.03.20	iPIC
48	Oscilloscope PC Based SDS11024	1	Modelling studio	2017.02.22	iPIC
49	PCB machine (Promat 563)	1	Modelling studio	JFY 2016	iPIC
50	Phase tester small (100-150V)	2	Modelling studio	JFY 2016	iPIC
51	pneumatic system	1	Modelling studio	2017.03.20	iPIC
52	Portable Air Compressor	1	Modelling studio	2017.07.26	iPIC
53	Sound Level Meter	1	Modelling studio	JFY 2016	iPIC
54	Spring balance (500gm max)	3	Modelling studio	2017.02.22	iPIC
55	Tools Set Kits	6	Modelling studio		iPIC
56	Training Rigs (PLC training kit)	2	Modelling studio	2017.03.21	iPIC
57	Anvil Vice 100mm jaw width	2	Rapid prototyping lab 1	2017.02.22	iPIC
58	Ball Pein Hammer	5	Rapid prototyping lab 1	JFY 2015	iPIC
59	BASTERED FILE	5	Rapid prototyping lab 1	JFY 2014	iPIC
60	Bench Drilling Machine (BS2P)	2	Rapid prototyping lab 1	JFY 2015	iPIC
61	Bench Vice	6	Rapid prototyping lab 1	JFY 2015	iPIC
62	Cape Chisel	5	Rapid prototyping lab 1	JFY 2015	iPIC
63	Cast Iron Angle Plate	4	Rapid prototyping lab 1	JFY 2015	iPIC
64	cast iron V Block (sets)	2	Rapid prototyping lab 1	JFY 2015	iPIC
65	COPPER MALLET	3	Rapid prototyping lab 1	JFY 2014	iPIC
66	HACKSAW FRAME	9	Rapid prototyping lab 1	JFY 2014	iPIC
67	Height Gage (SH30)	2	Rapid prototyping lab 1	JFY 2015	iPIC
68	Hot air gun (heat gun)	2	Rapid prototyping lab 1	JFY 2016	iPIC
69	Jig Saw HG6020 + transformers	2	Rapid prototyping lab 1	JFY 2015	iPIC
70	Pitch gauge (0.25-60 mm)/Screw pitch Guage	4	Rapid prototyping lab 1	2017.02.22	iPIC
71	RASP FILE	10	Rapid prototyping lab 1	JFY 2015	iPIC
72	Screw pitch Guage (screw pitch gauge)	4	Rapid prototyping lab 1	2017.02.22	iPIC
73	SCRIBER	10	Rapid prototyping lab 1	JFY 2016	iPIC
74	Scroll Saw/THREAD SAWING MACHINE (105841)	1	Rapid prototyping lab 1	JFY 2016	iPIC
75	Shears	2	Rapid prototyping lab 1	JFY 2016	iPIC
76	Side cutter	1	Rapid prototyping lab 1	JFY 2016	iPIC
77	itching pen	2	Rapid prototyping lab 1	JFY 2016	iPIC
78	oil gun	1	Rapid prototyping lab 1	JFY 2015	iPIC
79	Stainless Steel Ruler (600mm)	2	Rapid prototyping lab 1	JFY 2016	iPIC
80	STRAIGHT TIN SNIPS	2	Rapid prototyping lab 1	JFY 2014	iPIC
81	Surface Plate	2	Rapid prototyping lab 1	JFY 2015	iPIC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
82	Taps and Dies Set	2	Rapid prototyping lab 1	JFY 2015	iPIC
83	wire brush	5	Rapid prototyping lab 1		iPIC
84	Stainless Steel Ruler (1,000mm)	2	Rapid prototyping lab 1		iPIC
85	Stainless Steel Ruler (300mm)	10	Rapid prototyping lab 1	2017.03.16	iPIC
86	Blowers (QIFNG-40)	1	Rapid prototyping lab 1		iPIC
87	HACKSAW FRAME	1	Rapid prototyping lab 1		iPIC
88	Jig Saw HG6020 + transformers	2	Rapid prototyping lab 1		iPIC
89	3-D Printer 3DP-10(SN 215061)	1	Rapid prototyping lab 1	2016	iPIC
90	CNC Table Top Milling (VM1300)	1	Rapid prototyping lab 1	2016	iPIC
91	CNC Table Top TURNING (Turn 370PROM)	1	Rapid prototyping lab 1	2016	iPIC
92	Soldering Irons	1	Rapid prototyping lab 1		iPIC
93	Vice(Model;SV-100A)*6	2	Rapid prototyping lab 1	JFY 2015 JICA	iPIC
94	Vinyl Cutter	1	Rapid prototyping lab 1	2016	iPIC
95	Angle plate 160x100x12.5	2	Rapid prototyping lab 1	2017.02.22	iPIC
96	Combination square set	2	Rapid prototyping lab 1	2017.02.22	iPIC
97	Compressed Air Gun (Hot Bond Gun)	2	Rapid prototyping lab 1		iPIC
98	CROSS-CUT FILE	5	Rapid prototyping lab 1		iPIC
99	DC Power supplies UTP3704S	1	Rapid prototyping lab 1		iPIC
100	Diamond Point Chisel	5	Rapid prototyping lab 1	JFY 2015	iPIC
101	Digital Micrometer 0-25mm	1	Rapid prototyping lab 1	JFY 2015 JICA	iPIC
102	Digital Micrometer 25-50mm	1	Rapid prototyping lab 1	JFY 2015 JICA	iPIC
103	Digital Micrometer 50-75mm	2	Rapid prototyping lab 1	JFY 2015 JICA	iPIC
104	Digital Micrometer 75-100mm	2	Rapid prototyping lab 1	JFY 2015 JICA	iPIC
105	Digital Vernier Caliper	3	Rapid prototyping lab 1	2017.03.17	iPIC
106	Divider 150mm	5	Rapid prototyping lab 1	2017.02.22	iPIC
107	Drill press Vice (414)	2	Rapid prototyping lab 1	2017.02.22	iPIC
108	filler gauge	2	Rapid prototyping lab 1	2017.02.22	iPIC
109	FLAT FILE	5	Rapid prototyping lab 1		iPIC
110	G-Clamp 0-100 mm	5	Rapid prototyping lab 1	2017.02.22	iPIC
111	G-Clamp 0-150 mm	5	Rapid prototyping lab 1	2017.02.22	iPIC
112	Steel rule 150 mm	5	Rapid prototyping lab 1	2017.02.22	iPIC
113	Tape measure 3m	5	Rapid prototyping lab 1	2017.02.22	iPIC
114	Tape measure 5m	5	Rapid prototyping lab 1	2017.02.22	iPIC
115	Digital Micrometer 0-25mm	1	Rapid prototyping lab2	JFY 2015	iPIC
116	Digital Micrometer 25-50mm	1	Rapid prototyping lab2	JFY 2015	iPIC
117	Digital Vernier Caliper	1	Rapid prototyping lab2	2017.03.17	iPIC
118	Flat screw drivers	4	Rapid prototyping lab2	2017.03.17	iPIC
119	Flat screw drivers	4	Rapid prototyping lab3	2017.03.17	iPIC
120	Flat screw drivers	4	Rapid prototyping lab4	2017.03.17	iPIC
121	WSE-SPARTAN INV IMD400T X 415 V	1	Welding workshop	2017.03.21	iPIC
122	WSE-SPARTAN INV.Plasma Cutter PL100	1	Welding workshop	2017.03.21	iPIC
123	WSE-SPARTAN Mig 250i X240v	1	Welding workshop	2017.03.21	iPIC
124	Plastic cutter	2		2017.02.22	iPIC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
125	4-Ways Workstation	1	iPIC Advanced research lab/design RM	JFY 2015	iPIC
126	computer chairs	2	iPIC Advanced research lab/design RM	2017.03.30	iPIC
127	computer table White Oak	4	iPIC Advanced research lab/design RM	JFY 2015	iPIC
128	Computer Table with keboard tray	2	iPIC Advanced research lab/design RM	2017.05.16	iPIC
129	Display Table	8	iPIC Advanced research lab/design RM	JFY 2015	iPIC
130	flip chart holder	2	iPIC Advanced research lab/design RM	JFY 2016	iPIC
131	Four Way Work Station	1	iPIC Advanced research lab/design RM	2017.03.16	iPIC
132	Four way work station	1	iPIC Advanced research lab/design RM	2017.03.16	iPIC
133	mobile whiteboard	1	iPIC Advanced research lab/design RM		iPIC
134	Conference Table	2	Board room	2017.05.16	iPIC
135	adjustable chair with caster	1	iPIC Brainstorming room		iPIC
136	glass display stand	1	iPIC Brainstorming room	2017.03.30	iPIC
137	Laboratory Stools	12	iPIC Brainstorming room	2017.03.16	iPIC
138	Medium back chair with mesh back	2	iPIC Brainstorming room		iPIC
139	mobile whiteboard	1	iPIC Brainstorming room		iPIC
140	round conference table	6	iPIC Brainstorming room	2017.03.16	iPIC
141	Computer Table with keboard tray	2	CeSEM	2017.03.30	iPIC
142	Medium mesh back chairs	19	CeSEM/ boardroom 17	2017.05.16	iPIC
143	Executive Highback Seats	1	Chief technologist	JFY 2015	iPIC
144	Executive Office Table	1	Chief technologist	JFY 2015	iPIC
145	high back leather seats (cantilever seats)	4	Chief technologist		iPIC
146	high back leather seats (cantilever seats)	3	Computer room		iPIC
147	Medium back chair with mesh back	30	Design/ advanced research	2017.03.16	iPIC
148	Computer Seats Adustable	12	Exhibition hall		iPIC
149	flip chart holder	3	Exhibition hall		iPIC
150	Folding Table With Metallic Frame	10	Exhibition hall	2017.03.16	iPIC
151	Lectern stand	1	Exhibition hall	JFY 2016	iPIC
152	Lecture Seat (conference chair)	80	Exhibition hall	JFY 2015	iPIC
153	white board	2	Exhibition hall	JFY 2016	iPIC
154	Conference Chairs (Metallic cantilever frame)	70	Instruction room 1/2	JFY 2016	iPIC
155	foldable table with metallic legs	1	Instruction room 1/2	JFY 2016	iPIC
156	mobile whiteboard	1	Instruction room 1/2	JFY 2016	iPIC
157	table with white top	2	Instruction room 1/2	JFY 2016	iPIC
158	Portable Lecture Table	1	Instruction room 1/3	JFY 2015	iPIC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
159	benches	6	Exhibition hall	2017.03.30	iPIC
160	Executive Highback Chairs	1	Manager office	JFY 2015	iPIC
161	Executive Office Filing Cabinet	3	Manager office	JFY 2015	iPIC
162	Executive Office Filing Cabinet	3	Manager office	JFY 2015	iPIC
163	Executive Office Table	1	Manager office	JFY 2015	iPIC
164	high back leather seats (cantilever seats)	7	Manager office	JFY 2015	iPIC
165	Lecture Seat	2	Manager office	JFY 2015	iPIC
166	Lecture Table manager office	1	Manager office	2017.03.16	iPIC
167	electronics library cabinet	1	Modelling studio	2017.03.30	iPIC
168	Laboratory Stools	2	Modelling studio	JFY 2016	iPIC
169	Stationary Cabinet	2	Modelling studio	JFY 2015	iPIC
170	Laboratory Stools	1	Rapid prototyping lab 1	JFY 2015	iPIC
171	pin board (blue)	4	Rapid prototyping lab 1	2017.02.27	iPIC
172	Lecturers table	1	Rapid prototyping lab2	2017.03.16	iPIC
173	computer chairs	1	Rapid prototyping lab2	2017.03.30	iPIC
174	Computer Table with keboard tray	1	Rapid prototyping lab2	2017.03.31	iPIC
175	Sony TV Screen For PLC Training Kit	1	iPIC - Modelling Studio	2017.03.21	iPIC
176	Desk Top Computer (HP Elite desk 800) CZC62899RQ,CZC62899SZ,CZC6289TC,	3	advanced research lab/design	JFY 2016	iPIC
177	Desk Top Computer (HP Elite desk 800) czc6289TJ, CZC62899SB, CZC62899SS, CZC62899SW, CZC62899RH, CZC62899R3, CZC62899S4, CZC62899RS, CZC62899T6, CZC62899RM	10	iPIC Advanced research lab/design RM	JFY 2016	iPIC
178	5 way socket with USB port	12	iPIC Advanced research lab/design RM		iPIC
179	APC UPS 1400va, IEC Sockets	2	iPIC Advanced research lab/design RM	2017.05.05	iPIC
180	camera DSC-W series 16.8 mp	1	iPIC Advanced research lab/design RM	2017.03.23	iPIC
181	HP desktop (core i7, HDD: 1TB. RAM: 8GB)	1	iPIC Advanced research lab/design RM	2017.03.23	iPIC
182	tranking system	1	iPIC Advanced research lab/design RM	2017.11.14	iPIC
183	UPS 200V(300VA/2100W)-BU3002RWL	1	iPIC Advanced research lab/design RM		iPIC
184	Electronic master kit (toolbox) 1 set	3	iPIC Brainstorming room	2017.02.22	iPIC
185	HP Corei7 / 8GB / 1TB PCs	2	CeSEM/ boardroom 17	2017.05.05	iPIC
186	Sony TV screens	1	Computer room	2017.03.21	iPIC
187	Audio system	1	Exhibition hall		iPIC
188	Behringler XENYX502	1	Exhibition hall	2017.03.20	iPIC
189	Lapel Microphone Tovaste Pr-audioTUH 3500	2	Exhibition hall	2017.02.20	iPIC
190	laptop Hpi3 intel CND61304PC	1	Exhibition hall		iPIC
191	projector epson ELPLP88	1	Exhibition hall		iPIC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
192	Shure wireless MICs	2	Exhibition hall	2017.03.20	iPIC
193	Small mixer (Behringer XENYX502)	1	Exhibition hall	2017.02.20	iPIC
194	smart board	1	Exhibition hall	2016.11.16	iPIC
195	Tovaste po-audio TOH 3500	1	Exhibition hall	2017.03.20	iPIC
196	Wireless microphone	1	Exhibition hall	2017.02.20	iPIC
197	Desk Top Computer (HP Elite desk 800) CZC62899SX, CZC62899TH	2	Modelling studio	2016	iPIC
198	Desk Top Computer HP 280G 1 MT (TRF51204L9	1	MODELLING STUDIO	2016.03.01	iPIC
199	Desk Top Computer (HP Elite desk 800) CZC2899S3	1	Rapid prototyping 2	2016	iPIC
200	Desk Top Computer HP 280G 1 MT(TRF51204FH, TRF51204FT)	2	Rapid prototyping 2	2016.03.01	iPIC
201	Extension socket 5way with 3mtr cabble and plug top	3	Rapid prototyping lab1	2017.03.16	iPIC
202	Extension socket 5way with 3mtr cabble with usb	1	Rapid prototyping lab1	2017.03.16	iPIC
203	Extension socket 6way with 3mtr cabble and plug top	3	Rapid prototyping lab1	2017.03.16	iPIC
204	Extension socket 5way with 3mtr cabble and plug top	5	Rapid prototyping lab2	2017.03.22	iPIC
205	pin board	2	Timber shed	2017.02.27	iPIC
206	APC UPS 2200va, IEC Sockets	1	Exhibition hall	2018.03.01	iPIC
207	5KGS Carbon dioxide extinguisher 6 pcs swinging hosereel	1	iPIC	2018.03.02	iPIC
208	5KGS Carbon dioxide extinguisher 6 pcs swinging hosereel	1	iPIC	2018.03.03	iPIC
209	5KGS Carbon dioxide extinguisher 6 pcs swinging hosereel	1	iPIC	2018.03.04	iPIC
210	Folding table with metal frames	10	Display corner	2018.03.16	iPIC
211	Display Table	10	Exhibition hall	2018.03.24	iPIC
212	Chain Wrench	1	CeSEM	2018.10.23	iPIC
213	Adjustable Stock and Dies ½" – 2"	4	CeSEM	2018.10.23	iPIC
214	Jacobs Chuck	2	CeSEM	2018.10.23	iPIC
215	Thread Taps (M11 x 1.0)	2	CeSEM	2018.10.23	iPIC
216	Thread Taps (M11 x 1.5)	2	CeSEM	2018.10.23	iPIC
217	Thread Taps (M12 x 0.75)	2	CeSEM	2018.10.23	iPIC
218	Thread Taps (M12 x 1.0)	5	CeSEM	2018.10.23	iPIC
219	Thread Taps (M12 x 1.5)	5	CeSEM	2018.10.23	iPIC
220	Thread Taps (M12 x 1.75)	2	CeSEM	2018.10.23	iPIC
221	Pipe wrench	1	CeSEM	2018.10.23	iPIC
222	Welding nozzle	2	CeSEM	2018.10.23	iPIC
223	Thread Dies (M5 x 0.8)	2	CeSEM	2018.10.23	iPIC
224	Thread Dies (M6 x 0.75)	2	CeSEM	2018.10.23	iPIC
225	Thread Dies (M6 x 1.0)	5	CeSEM	2018.10.23	iPIC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
226	Thread Dies (M7 x 1.0)	2	CeSEM	2018.10.23	iPIC
227	Thread Dies (M8 x 1.25)	5	CeSEM	2018.10.23	iPIC
228	Thread Dies (M9 x 1.0)	2	CeSEM	2018.10.23	iPIC
229	Thread Dies (M10 x 0.75)	2	CeSEM	2018.10.23	iPIC
230	Thread Dies (M10 x 1.0)	2	CeSEM	2018.10.23	iPIC
231	Thread Dies (M10 x 1.25)	2	CeSEM	2018.10.23	iPIC
232	Thread Dies (M10 x 1.5)	5	CeSEM	2018.10.23	iPIC
233	Thread Dies (M11 x 1.0)	2	CeSEM	2018.10.23	iPIC
234	Thread Dies (M11 x 1.5)	2	CeSEM	2018.10.23	iPIC
235	Thread Dies (M12 x 0.75)	2	CeSEM	2018.10.23	iPIC
236	Thread Dies (M12 x 1.0)	2	CeSEM	2018.10.23	iPIC
237	Thread Dies (M12 x 1.5)	2	CeSEM	2018.10.23	iPIC
238	Thread Dies (M12 x 1.75)	2	CeSEM	2018.10.23	iPIC
239	Flat Cold Chisel (14mm x 150mmlong)	8	CeSEM	2018.10.23	iPIC
240	Thread Taps (M10 x 0.75)	2	CeSEM	2018.10.23	iPIC
241	Thread Taps (M10 x 1.0)	2	CeSEM	2018.10.23	iPIC
242	Thread Taps (M10 x 1.25)	2	CeSEM	2018.10.23	iPIC
243	Thread Taps (M10 x 1.5)	5	CeSEM	2018.10.23	iPIC
244	Thread Taps (M9 x 1.0)	2	CeSEM	2018.10.23	iPIC
245	Ball Pein Hammer ½ kg	10	CeSEM	2018.10.23	iPIC
246	6" Spring Divider	5	CeSEM	2018.10.23	iPIC
247	Thread Taps (M8 x 1.25)	5	CeSEM	2018.10.23	iPIC
248	12" Bastard Flat File	5	CeSEM	2018.10.23	iPIC
249	Class B Single V Belt	1	CeSEM	2018.10.23	iPIC
250	Thread Taps (M5 x 0.5)	1	CeSEM	2018.10.23	iPIC
251	Thread Taps (M5 x 0.8)	5	CeSEM	2018.10.23	iPIC
252	12" Bastard Half Round File	5	CeSEM	2018.10.23	iPIC
253	12" Bastard Round File	10	CeSEM	2018.10.23	iPIC
254	10" Bastard Round File	5	CeSEM	2018.10.23	iPIC
255	10" Bastard Hand File	5	CeSEM	2018.10.23	iPIC
256	10" Bastard Half Round File	5	CeSEM	2018.10.23	iPIC
257	8" Smooth Half Round File	5	CeSEM	2018.10.23	iPIC
258	Centre Punch	8	CeSEM	2018.10.23	iPIC
259	8" Bastard Round File	5	CeSEM	2018.10.23	iPIC
260	8" 2nd Cut Flat File	5	CeSEM	2018.10.23	iPIC
261	6" Smooth Flat File	5	CeSEM	2018.10.23	iPIC
262	8" Bastard Hand File	5	CeSEM	2018.10.23	iPIC
263	6" 2nd Cut Triangular File	5	CeSEM	2018.10.23	iPIC
264	6" 2nd Cut Hand File	5	CeSEM	2018.10.23	iPIC
265	6" Smooth Half Round File	5	CeSEM	2018.10.23	iPIC
266	8" 2nd Cut Triangular File	5	CeSEM	2018.10.23	iPIC
267	6" Smooth Round File	5	CeSEM	2018.10.23	iPIC
268	12" Bastard Triangular File	5	CeSEM	2018.10.23	iPIC
269	10" Bastard Triangular File	5	CeSEM	2018.10.23	iPIC
270	Thread Taps (M5 x 0.5)	1	CeSEM	2018.10.24	iPIC

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271	Drilling and milling tools for LPKF promats	1	CeSEM	2019.02.25	iPIC
272	Trolley Cabinet	1	CeSEM	2019.03.11	iPIC
273	Analogue Multimeter	1	CeSEM	2019.03.11	iPIC
274	Combination Set	1	CeSEM	2019.03.11	iPIC
275	Rotary Drills	1	CeSEM	2019.03.11	iPIC
276	Gas Blow Gun	3	CeSEM	2019.03.11	iPIC
277	Pipe flaring, swaging and cutting kit	1	CeSEM	2019.03.11	iPIC
278	Socket Wrench	1	CeSEM	2019.03.11	iPIC
279	Copper Mallet	2	CeSEM	2019.03.11	iPIC
280	Angle Grinders	1	CeSEM	2019.03.11	iPIC
281	Raw Hide Mallet	1	CeSEM	2019.03.11	iPIC
282	Welding Helmet Polyprop flip front	2	CeSEM	2019.03.11	iPIC
283	Rivet gun	1	CeSEM	2019.03.11	iPIC
284	Torx Wrench	1	CeSEM	2019.03.11	iPIC
285	Vernier Callipers	1	CeSEM	2019.03.11	iPIC
286	Grease Nipples	1	CeSEM	2019.03.11	iPIC
287	Loctite (Thread Locking Fluid)	2	CeSEM	2019.03.11	iPIC
288	Plastic Mallet	1	CeSEM	2019.03.11	iPIC
289	Spirit Level	1	CeSEM	2019.03.11	iPIC
290	Allen Keys (Long Arm Series)	1	CeSEM	2019.03.11	iPIC
291	G - Clamp	2	CeSEM	2019.03.11	iPIC
292	Hacksaw Frame	4	CeSEM	2019.03.11	iPIC
293	Oil Can	2	CeSEM	2019.03.11	iPIC
294	G - Clamp	2	CeSEM	2019.03.11	iPIC
295	Measuring Tape	2	CeSEM	2019.03.11	iPIC
296	Scriber	2	CeSEM	2019.03.11	iPIC
297	Hacksaw Blades	9	CeSEM	2019.03.11	iPIC
298	Gas Masks	2	CeSEM	2019.03.11	iPIC
299	High Vis Leather Gloves	5	CeSEM	2019.03.11	iPIC
300	Clear Lens, Spectacle	5	CeSEM	2019.03.11	iPIC
301	Hand Brush	4	CeSEM	2019.03.11	iPIC
302	Painting Brush 2" Herris	4	CeSEM	2019.03.11	iPIC
303	Combination set	1	CeSEM	2019.03.22	iPIC
304	Bench vice	1	CeSEM	2019.03.22	iPIC
305	Chain Block	1	CeSEM	2019.03.22	iPIC
306	Towing belt	4	CeSEM	2019.03.22	iPIC
307	D-shackles	4	CeSEM	2019.03.22	iPIC
308	Internal circlip pliers (9-25mm circlip dia)	2	CeSEM	2019.03.22	iPIC
309	External circlip pliers (10-25mm circlip dia)	2	CeSEM	2019.03.22	iPIC
310	Hand grip pliers	2	CeSEM	2019.03.22	iPIC
311	Steel Rule	2	CeSEM	2019.03.22	iPIC
312	Pipe wrench	1	CeSEM	2019.03.23	iPIC
313	Spare Parts for CeSEM	Assortment	CeSEM	2019.09.19	iPIC
314	Electronic Components	Assortment	iPIC	2019.11.01	iPIC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
315	Repair Tools for Refrigierator used by CeSEM	Assortment	CeSEM	2019.12.04	iPIC
316	Memory Card for Wire EDM	1	iPIC	2020.03.02	iPIC
317	Consumables used for Training in iPIC and Engineering Research	Assortment	iPIC	2020.03.04	iPIC
318	Digimat Academic Research (1 seat)Software used in Engineering Research	1	iPIC	2020.03.06	iPIC
319	Display Monitor for iPIC Display Corner-Sony smart TV 55" FHD-4K In-Built ADROID 16GB	1	iPIC	2020.03.06	iPIC
320	EVOLVE HIGH BACK MESH CHAIR WITH FIXED ARMS	6	iPIC	2020.03.07	iPIC
321	Spare Parts for CeSEM	Assortment	CeSEM	2020.03.11	iPIC
322	Spare Parts for CeSEM	Assortment	CeSEM	2020.03.11	iPIC
323	Ultra Maker 3D Printer	2	iPIC	2020.03.16	iPIC
324	Filament for 3D Printer Ultimaker, Nylon 2.85 Black(4) Ultimaker, Tough PLA, 2.85 Black (4) Ultimaker PVA 2.85 Natural Big 9731(4) Ultimaker, CPE+ 2.85 Black 9726 (4) Ultimaker TPU95 2.85 White 9720 (4)	20	iPIC	2020.03.16	iPIC
325	Consumables used for Training in iPIC and Engineering Research	Assortment	iPIC	2020.03.17	iPIC
326	Consumables used for Training in iPIC and Engineering Research (pixel electric)	Assortment	iPIC	2020.03.18	iPIC
327	Digital Photogrammetric Workstation Installation and Configuration HP Z2 Tower G4 Workstation - Intel Xeon E-2124G 4C 71W Processor, 32GB (2x16GB) DDR4 2666 DIMM Memory, NVIDIA Quadro P2000 5GB (4) DP Graphics Card, 1TB 7200RPM SATA Hard Drive, USB Business Slim Wired Keyboard, HP Optical USB Mouse, 9.5mm DVD-Writer 1st ODD, 3/3/3 Warranty, HP 21.5 Inch Display Monitor, Windows 10 Professional	1	ELB 214	2020.03.18	iPIC
328	3D Monitors - 24-Inch Stereo Display	1	ELB 214	2020.03.18	iPIC
329	3D Glasses-3D Vision Glasses	1	ELB 214	2020.03.18	iPIC
330	3D Mouse-Stealth 3D Mouse	1	ELB 214	2020.03.18	iPIC
331	APC UPS -1.5 KVA	1	ELB 214	2020.03.18	iPIC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
332	2D Monitor - 24-Inch TFT	1	ELB 214	2020.03.18	iPIC
333	Digital Photogrammetric Software :Software Maintenance for 22 Geospatial Educational Desktop Core Level 2 Permanent Licenses which includes: ERDAS IMAGINE Professional, GeoMedia Professional, IMAGINE Expansion Pack, IMAGINE Photogrammetry, IMAGINE Terrain Editor, PRO600 CART, PRO600 DTM, ERDAS ER Mapper, GeoMedia Transportation Manager, GeoMedia Motion Video Analyst Professional, GeoMedia Advanced Collection, ERDAS APOLLO Essentials + 550 Free Annual Student Licenses + 20 Annual Educational AutoDTM Licenses Level 2 +20 Annual ORIMA DP-TE/GPS Licenses	1	ELB 214	2020.03.18	iPIC
334	SP desk with laminate top with with one fixed metalic drawer(1907)with black metal frames1200(l)*750(w)*750(h) mm	6	iPIC	2020.03.19	iPIC
335	Stationery cupboard with double doors 6' H with 3 adjustable shelves 915mm(L)x457mm(W)x1800mm(H) Colours : Jungle Green Metallic	1	iPIC	2020.03.19	iPIC
336	Water Still Merit 4L/Hr	1	ALB 022	2016.12.06	iCB
337	Rotary Evaporator Diagonal With Water Bath	1	ALB 022	2016.12.06	iCB
338	Ice Flake AF 124	1	food science lab	2016.12.06	iCB
339	Balance Precision 1200g*0.001g	1	ALB 022	2017.02.03	iCB
340	Dry bath	2	ALB 022	2017.03.28	iCB
341	Digital Thermometers	5	ALB 022	2017.03.28	iCB
342	Heating Mantles	4	ALB 022	2017.03.28	iCB
343	Heavy Duty Blender (Blackberry, 2 Liter)	2	ALB 022	2017.03.28	iCB
344	HOT PLATES / Magnetic Stirrer	7	ALB 022	2017.03.28	iCB
345	Hydrometers	4	ALB 022	2017.03.28	iCB
346	Deep freezer	1	ALB 022	2017.03.28	iCB
347	Maximum-Minimum Thermometers	10	ALB 022	2017.03.28	iCB
348	Soil Thermometers	10	ALB 022	2017.03.28	iCB
349	Wet And Dry Bulb Thermometer	10	ALB 022	2017.03.28	iCB
350	pH-METER	4	ALB 022	2017.03.28	iCB
351	Refrigerators	2	ALB 022	2017.03.28	iCB
352	Refrigerator	1	ALB 022	2017.03.17	iCB
353	Portable light meter	1	ALB 022	2017.03.29	iCB
354	Floride meter	2	ALB 022	2017.03.28	iCB
355	Magnisuim	2	ALB 022	2017.03.17	iCB

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356	Digital Salinometer	2	ALB 023	2017.03.17	iCB
357	Top Loading Balance (3 Decimal)	6	ALB 022	2017.03.28	iCB
358	Vortex Mixer	2	ALB 022	2017.03.28	iCB
359	Gas Chromatograph	1	ALB 022	2017.03.17	iCB
360	Nitrogen Auto-analyzer	1	FST Analytical Lab	2017.03.17	iCB
361	Nitrogen Auto-analyzer- scrubber	1	FST Analytical Lab	2017.03.17	iCB
362	Nitrogen Auto-analyzer- digester	1	FST Analytical Lab	2017.03.17	iCB
363	Nitrogen Auto-analyzer- scrubber	1	ALB 022	2017.03.17	iCB
364	Nitrogen Auto-analyzer-reciculation water aspirator	1	ALB 022	2017.03.17	iCB
365	Flame Photometer	1	ALB 022	2017.03.17	iCB
366	Altimeter/Barometer	5	ALB 022	2017.03.17	iCB
367	Range Finder	2	ALB 022	2017.03.17	iCB
368	Double Prismatic Square	4	ALB 022	2017.03.17	iCB
369	Abney Level	10	ALB 022	2017.03.17	iCB
370	Leica runner	10	ALB 022	2017.03.17	iCB
371	Leveling Staff	10	ALB 022	2017.03.17	iCB
372	Ranging rods	10	ALB 022	2017.03.17	iCB
373	Photometric Measuring Unit	2	ALB 022	2017.03.17	iCB
374	Scanning Mirror Stereoscope	1	ALB 022	2017.03.17	iCB
375	Pyrometer	3	ALB 022	2017.03.17	iCB
376	Gps	3	ALB 022	2017.03.17	iCB
377	Atomic absorption spectrophotometer	1	ALB 022	2017.03.17	iCB
378	Double beam UV-VIS	1	ALB 022	2017.03.17	iCB
379	FURNACE	1	ALB 022		iCB
380	Universal kymograph	1	ALB 022	2017.03.17	iCB
381	incubator	1	ALB 022	2017.03.17	iCB
382	hallow cathode lamp zinc (zc) 37mm std HCL-ZN-37	1	FST instrumental lab	2017.04.12	iCB
383	hallow cathode lamp calcium (Ca) 37mm std HCL-CA-37	1	FST instrumental lab	2017.04.12	iCB
384	hallow cathode lamp iron (Fe) 37mm std HCL-FE-37	1	FST instrumental lab	2017.04.12	iCB
385	hallow cathode lamp magnisium (Mg) 37mm std HCL-Mg-37	1	FST instrumental lab	2017.04.12	iCB
386	hallow cathode lamp maganese (Mn) 37mm std HCL-Mn-37	1	FST instrumental lab	2017.04.12	iCB
387	hallow cathode lamp copper (Cu) 37mm std HCL-CU-37	1	FST instrumental lab	2017.04.12	iCB
388	hallow cathode lamp Lead (Pb) 37mm std HCL-PB-37	1	FST instrumental lab	2017.04.12	iCB
389	hallow cathode lamp Selenium (Se) 37mm std HCL-Se-37	1	FST instrumental lab	2017.04.12	iCB
390	hallow cathode lamp Chromium (Cr) 37mm std HCL-Cr-37	1	FST instrumental lab	2017.04.12	iCB

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391	hallow cathode lamp Aluminium (Al) 37mm std HCL-Al-37	1	FST instrumental lab	2017.04.12	iCB
392	Hematology Analyzer	1	ALB 022	2017.06	iCB
393	Freeze drier	1	ALB 022	2017.06	iCB
394	Desks Without Drawers (1350 X 600 X 750mm)	3	Head House	2016.03.16	iCB
395	Desks Without Drawers (1350 X 600 X 750mm)	2	Head House	2015.11.25	iCB
396	Fabric Chairs / Work Chairs	4	Head House	2016.03.16	iCB
397	Fabric Chairs / Work Chairs	4	Head House	2015.11.25	iCB
398	High Glass Cabinets (1200 X 400 X 1800mm)	3	Head House	2016.03.16	iCB
399	High Glass Cabinets (1200 X 400 X 1800mm)	2	Head House	2015.11.25	iCB
400	Double Sided White Board With Casters, 6x4ft	1	Head House	2015.11.25	iCB
401	Open Low Cabintes With Lockable Doors	3	Head House	2016.03.16	iCB
402	Open Low Cabintes With Lockable Doors	2	Head House	2015.11.25	iCB
403	Work Table (Chemical Proof Surface, 1600 X 1200 X 800mm)	1	Head House	2016.03.16	iCB
404	Work Table (Chemical Proof Surface, 1600 X 1200 X 800mm)	1	Head House	2015.11.25	iCB
405	Water Dispenser Ramtons	1	Head House	2017.03.17	iCB
406	Large Back Chair With Five Star Swivel Base	4	Head House	2017.03.17	iCB
407	12*750*750 Straight Desk Without Drawer Unit	4	Head House	2017.03.17	iCB
408	Legged Chairs On Fabric	4	Head House	2017.03.17	iCB
409	drawing tables	10	NSC Horticulture drawing room	2017.03.15	iCB
410	Lab Stools Wi+C205:C210thout Back Support fixed Height Of 450mm	10	Head House	2016.03.16	iCB
411	Lab Stools Without Back Support Adjustable Height Of 650 Mm	10	Head House	2017.03.17	iCB
412	Unifi® 802.11ac PRO Access Point	1	Head House	2017.03.17	iCB
413	HP Pro Desk 400 G3 Micro Pc	3	DARE	2017.01.30	iCB
414	LCD Projectors	4	Dean Agriculture	2017.03.28	iCB
415	desktop computers HP	1	FST instrumental lab	2017.05.12	iCB
416	2KVA Inverter and charger	2	FST instrumental lab	2018.02.21	iCB
417	200 Ah/12 V Battery	4	FST instrumental lab	2018.02.21	iCB
418	Solar lamps	4	Head House	2018.03.06	iCB
419	small wheelbarrow	2	Head House	2018.03.19	iCB
420	Clear horse pipe (roll)	1	Head House	2018.03.19	iCB
421	Hose pipe zebra (roll)	1	Head House	2018.03.19	iCB
422	spade metallic	2	Head House	2018.03.19	iCB

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423	Rake	2	Head House	2018.03.19	iCB
424	Watering can	1	Head House	2018.03.19	iCB
425	2.5 LB Jembe	2	Head House	2018.03.19	iCB
426	panga	2	Head House	2018.03.19	iCB
427	Compound binocular microscope	1	ALB 022	2018.03.21	iCB
428	Pegion hole	1	ALB 022	2018.03.21	iCB
429	Stationary Cupboard with double doors	1	ALB 022	2018.03.21	iCB
430	straight desk with drawers	1	ALB 022	2018.03.21	iCB
431	foldable table	1	ALB 022	2018.03.21	iCB
432	Medium Mesh back chair	3	ALB 022	2018.03.21	iCB
433	PH meter with plastic probe	1	FST instrumental lab	2018.12.17	iCB
434	Soil sampler up to 2 m in depth with 5 pcs 100ml tube Consisting of soil auger and 5pcs stainless steel cups with covers on both ends	1	ALB 022	2018.12.17	iCB
435	Hand refractometre 0-100	1	FST instrumental lab	2018.12.17	iCB
436	Weigh scale (2 dcp) 0.01-1200g	1	FST instrumental lab	2018.12.17	iCB
437	38 um sieving membrane	1	ALB 022	2018.12.17	iCB
438	Micro pipette (pipette man) 0-100ul	1	FST instrumental lab	2018.12.17	iCB
439	36 um sieving membrane	1	ALB 022	2018.12.17	iCB
440	Kjedel digestion flask 200ML	1	ALB 022	2018.12.17	iCB
441	Micro pipette (pipette man) 0-10ul	1	FST instrumental lab	2018.12.17	iCB
442	Jembe with handle	2	Hort Nursary	2018.12.17	iCB
443	Hand sprayers	1	ALB 022	2018.12.17	iCB
444	Cornical flask 1000 ml	2	FST instrumental lab	2018.12.17	iCB
445	Forceps	2	ALB 022	2018.12.17	iCB
446	Grafting knife	4	ALB 022	2018.12.17	iCB
447	Cornical flask 500 ml	2	FST instrumental lab	2018.12.17	iCB
448	Beaker 250 ml glass	4	FST instrumental lab	2018.12.17	iCB
449	Cornical flask 250 ml	2	FST instrumental lab	2018.12.17	iCB
450	Cornical flask 25 ml	4	FST instrumental lab	2018.12.17	iCB
451	Cornical flask 25 ml	3	FST instrumental lab	2018.12.17	iCB
452	Munse color charts	2	ALB 022	2018.12.21	iCB
453	White board 120cm by 240cm	4	New ALB	2019.01.29	iCB
454	target TES - 200 Projector screen electrical 200*200	1	New ALB	2019.02.25	iCB
455	target TES - 200 Projector screen electrical 200*201	1	New ALB	2019.02.25	iCB
456	target TES - 200 Projector screen electrical 200*202	1	New ALB	2019.02.25	iCB
457	target TES - 200 Projector screen electrical 200*203	1	New ALB	2019.02.25	iCB
458	target TES - 200 Projector screen electrical 200*204	1	New ALB	2019.02.25	iCB

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
459	target TES - 200 Projector screen electrical 200*205	1	New ALB	2019.02.25	iCB
460	Drawing tables	10	NSC Horticulture Drawing Room	2019.02.25	iCB
461	Double sided laboratory with black granite top, four pedestal drawers (2400 x 11000x900)mm	3	New ALB	2019.02.27	iCB
462	Lab table (front table)	1	New ALB	2019.02.28	iCB
463	Double sided laboratory with black granite top, four pedestal drawers (2400 x 11000x900)mm	6	New ALB	2019.02.28	iCB
464	Sony projector	1	New ALB	2019.02.28	iCB
465	Sony projector	1	New ALB	2019.02.28	iCB
466	Sony projector	1	New ALB	2019.02.28	iCB
467	Sony projector	1	New ALB	2019.02.28	iCB
468	target TES - 200 Projector screen electrical 200*206	1	New ALB	2019.02.28	iCB
469	Refrigirator and frigde protector	1	FST	2019.02.28	iCB
470	White board 120 x240 cm	7	New ALB	2019.02.28	iCB
471	Lab Stools	60	New ALB	2019.02.28	iCB
472	Water distiller -Glass 4/L H Hamilton	1	ALB 022	2019.03.18	iCB
473	Portable PH/EC/TDS Meter	1	ALB 022	2019.03.18	iCB
474	Microwave digital silver 20L	1	FST	2019.03.18	iCB
475	Quartz cuvettes 10mm	2	ALB 022	2019.03.18	iCB
476	Glass cuvettes 10mm	3	ALB 022	2019.03.18	iCB
477	Stainless steel container 250ml	5	ALB 022	2019.03.18	iCB
478	Deboning knife	5	ALB 022	2019.03.18	iCB
479	Ceramic crucible 100ml	5	ALB 022	2019.03.18	iCB
480	Mounting board for insect	5	ALB 022	2019.03.18	iCB
481	Microscope binocular 100x	1	ALB 022	2019.03.19	iCB
482	Weigh scale (2 dcp) 2200g	1	New ALB	2019.03.19	iCB
483	Orbital shaker 8x 250 ml flask	1	New ALB	2019.03.19	iCB
484	PH meter	2	New ALB	2019.03.19	iCB
485	Vacuum Pump cleaner 300 Chemical resistant vacuum	1	New ALB	2019.03.22	iCB
486	Vacuum Pump cleaner 300 Chemical resistant vacuum	1	New ALB	2019.03.22	iCB
487	Magnetic stirrer	1	New ALB	2019.03.22	iCB
488	Water bath 22 ltrs	2	New ALB	2019.03.22	iCB
489	Binocular Microscope	2	New ALB	2019.03.22	iCB
490	Sonicator GT sonic 6L Ultrasonic cleaner	2	New ALB	2019.03.22	iCB
491	Top Loading Balance (3 Decimal)	4	New ALB	2019.03.22	iCB
492	Magnetic stirrer	1	New ALB	2019.03.22	iCB
493	Votex mixer	1	New ALB	2019.03.22	iCB
494	2KVA Inverter and charger	1	Cassava lab	2019.03.25	iCB

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
495	2KVA Inverter and charger	1	FST instrumental lab	2019.03.25	iCB
496	200 Ah/12 V Battery	2	Cassava lab	2019.03.25	iCB
497	200 Ah/12 V Battery	2	FST instrumental lab	2019.03.25	iCB
498	Lab Stool	30	New ALB	2019.07.28	iCB
499	Lab Stools	60	New ALB	2019.10.18	iCB
500	Incubator for Microbiology	1	NEW ALB(Animal Sciences)	2020.03.17	iCB
501	Refrigerator(Upright Non Frost)	1	NEW ALB(Animal Sciences)	2020.03.17	iCB
502	Sieve 200micron 38 Aperture	1	NEW ALB(Animal Sciences)	2020.03.17	iCB
503	Open type Storage Shelving-Dark Grey 2.21mx0.9mx0.45m	8	Food Fortification Laboratory	2020.03.17	iCB
504	2 seater training table 1600 x 500 x 700mm(h)	110	NEW ALB(Lecturer Room)	2020.03.17	iCB
505	School chair with laminated seat and back (220)	220	NEW ALB(Lecturer Room)	2020.03.17	iCB
506	Lecture table with one shelf Dimensions(1400*750*700)	4	NEW ALB(Lecturer Room)	2020.03.17	iCB
507	Lab table (front table)	2	NEW ALB (Laboratory)	2020.03.17	iCB
508	Double sided laboratory benches with black granite top, four pedestal drawers (2400 x 11000x900)mm	15	New ALB	2020.03.17	iCB
509	Pinup Board in Metallic frame 1220mmx2440mmx12mm	14	NEW ALB(Land Resources)	2020.03.23	iCB
510	Particle size Analyzer	1	Food Fortification Laboratory	2020.06.30	iCB
511	Benchtop Scanning Electron Microscope	1	Food Fortification Laboratory	2020.10.28	iCB
512	0.8m wooden low cabinet	2	SAFARI	2017.03.23	iCMoB
513	Biohard waste bucket-pedal 30L	4	SAFARI	2017.07.25	iCMoB
514	extension cable	1	SAFARI	2017.07.25	iCMoB
515	Mice cages	105	SAFARI	2017.03.22	iCMoB
516	pawer stabilizer (Fridge guard)	1	SAFARI	2017.07.25	iCMoB
517	Rat cages	25	SAFARI	2017.03.22	iCMoB
518	special 1 drawer lockable drug cabinet 0.3x0.3x0.2M	1	SAFARI	2017.03.20	iCMoB
519	steel cupboards (2 doors) 1.8x0.9x0.5 M	2	SAFARI	2017.03.20	iCMoB
520	Water bottles (250ml)	130	SAFARI	2017.03.22	iCMoB
521	white board magnetic	2	SAFARI	2017.03.29	iCMoB
522	worktable 2400x660x745mm metal frame top B/board laminated wit brown formica	2	SAFARI	2017.03.20	iCMoB
523	Bays of 2 unit clothing lockers comprising of single compatments 1.8x0.3x0.5 M	1	SAFARI	2017.03.20	iCMoB

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
524	freezer	1	SAFARI	2017.03.29	iCMoB
525	laboratory stools covered with black pvcand metallic frame	10	SAFARI	2017.03.20	iCMoB
526	single storage shelving Unit 1.8x0.9x0.5 M	22	SAFARI	2017.03.20	iCMoB
527	1.4m office desk right	2	SAFARI	2017.03.23	iCMoB
528	1.4m office desk	2	SAFARI	2017.03.23	iCMoB
529	1.5m folding desk	8	SAFARI	2017.03.23	iCMoB
530	HP laptops (core i5, HDD: 500gb. RAM: 4GB)	2	SAFARI	2017.03.23	iCMoB
531	compact 1G 5kg ELEC bal (OHAUS)	1	SAFARI	2017.09.04	iCMoB
532	Bd needle box 1.5 LTRS	4	SAFARI	2017.09.04	iCMoB
533	adapters 9x15ml conical	1	SAFARI	2017.08.28	iCMoB
534	dissecting kit	5	SAFARI	2017.09.08	iCMoB
535	high storage cabinet with glass door	7	SAFARI	2017.03.23	iCMoB
536	stainless steel picking trolley 2 trays 1x0.6x1M	1	SAFARI	2017.03.20	iCMoB
537	stainless steel picking trolley 3 trays 1x0.6x1M	4	SAFARI	2017.03.20	iCMoB
538	4 compatment cloth locker	1	SAFARI	2017.03.20	iCMoB
539	low back mesh fabric bonded leather chair	4	SAFARI	2017.03.23	iCMoB
540	Internet system	1	SAFARI	2017.03.16	iCMoB
541	Air cordinationer system	1	SAFARI	2017.03.15	iCMoB
542	Cctv security system	1	SAFARI	2017.03.15	iCMoB
543	Real time PCR	1	PAUSTI Lab	2015/2016	iCMoB
544	SMART UPS 2200	1	PAUSTI Lab	2015/2016	iCMoB
545	Nano drop spectrophotometer	1	PAUSTI Lab	2015/2016	iCMoB
546	Proflex PCR System	1	PAUSTI Lab	2016/2017	iCMoB
547	Micro-centrifuge	1	PAUSTI Lab	2016/2017	iCMoB
548	Neon transfection system	1	PAUSTI Lab	2016/2017	iCMoB
549	UV Documentation system	1	PAUSTI Lab	2015/2016	iCMoB
550	Starring hot plate	1	PAUSTI Lab	2016/2017	iCMoB
551	iCE Maker	1	PAUSTI Lab	2014/2015	iCMoB
552	Lockable lockers	8	PAUSTI Lab	2015/2016	iCMoB
553	Laboratory stools(hydraulic)	5	PAUSTI Lab	2015/2016	iCMoB
554	Hydraulic lab chairs	5	PAUSTI Lab	2015/2016	iCMoB
555	lab tables with drawers	2	PAUSTI Lab	2015/2016	iCMoB
556	Office table (white colour)	1	PAUSTI Lab	2014/2015	iCMoB
557	Lab benches	4	PAUSTI Lab	2015/2016	iCMoB
558	Toshiba lap top and USB Flask for real time PCR	1	PAUSTI Lab	2015/2016	iCMoB
559	Horizontal gel electrophoresis App.	1	PAUSTI Lab	2016/2017	iCMoB
560	PCR UV Cabinet work station	1	PAUSTI Lab	2016/2017	iCMoB
561	Flask Dewar 4.5ltrs capacity	1	PAUSTI Lab	2016/2017	iCMoB
562	Autoclavable micropipette (100-1000µl)	1	PAUSTI Lab	2016/2017	iCMoB
563	Water bath(2ltrs capacity)	1	PAUSTI Lab	2016/2017	iCMoB

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
564	Microwave 20ltrs capacity	1	PAUSTI Lab	2016/2017	iCMoB
565	Bench top Ph Meter	1	PAUSTI Lab	2016/2017	iCMoB
566	ELISA Reader	1	PAUSTI Lab	2016/2017	iCMoB
567	Fluid bed dryer	1	PAUSTI Lab	2016/2017	iCMoB
568	Rotary evaporator	1	PAUSTI Lab	2016/2017	iCMoB
569	Cooling water bath	1	PAUSTI Lab	2016/2017	iCMoB
570	Diaphragm vaccum pump	1	PAUSTI Lab	2016/2017	iCMoB
571	Biosafety cabinet	1	PAUSTI Lab	2016/2017	iCMoB
572	Ductless fume hood	1	PAUSTI Lab	2016/2017	iCMoB
573	Universal refrigerated centrifuge(TX 400 rotor for 400ml vessels	1	PAUSTI Lab	2016/2017	iCMoB
574	Bench-top freeze dry system. Freez Temp-50°c	1	PAUSTI Lab	2016/2017	iCMoB
575	Reichert Quebec dark filed colony counter	1	PAUSTI Lab	2016/2017	iCMoB
576	Biomedical upright freezer capacity (482 ltrs),-35°C	1	PAUSTI Lab	2016/2017	iCMoB
577	Pharmaceutical refrigerator +4°c	1	PAUSTI Lab	2016/2017	iCMoB
578	CO2 Incubator 246ltrs Additional water dish	1	PAUSTI Lab	2016/2017	iCMoB
579	Plant growth chamber with humidity and light control	1	PAUSTI Lab	2016/2017	iCMoB
580	Shaker incubator	1	PAUSTI Lab	2016/2017	iCMoB
581	General Laboratory oven 200ltrs capacity	1	PAUSTI Lab	2016/2017	iCMoB
582	Upright freezer -80°C	1	PAUSTI Lab	2016/2017	iCMoB
583	Water purifying system	1	PAUSTI Lab	2016/2017	iCMoB
584	Mercer ups	1	SAFARI Office	2015.03.16	iCMoB
585	Co2 gas with cylinder and regulator (Carbacid)	1	SAFARI Procedure room	2017.11.23	iCMoB
586	Rabbit cages stainless steel with rack and water bottle	2	SAFARI Rabbit room	2018.02.16	iCMoB
587	Rat cages 21.5x15.6x7.9 mm	45	SAFARI Quarantine room	2018.02.16	iCMoB
588	Feeding needle for rabbits, straight 11mm length 0.12 mm diameter	3	SAFARI Equipment room	2018.02.16	iCMoB
589	Water bottle 500ml	12	SAFARI Rabbit room	2018.02.16	iCMoB
590	Water bottles (250ml)	45	SAFARI Rat room	2018.02.16	iCMoB
591	Fittings, adaptor and reducers	1	SAFARI Training room	2018.02.23	iCMoB
592	Tubing 40mpa 2NS (5 metres)	5	SAFARI Training room	2018.02.23	iCMoB
593	Fire extinguisher	1	SAFARI Student Waiting area	2018.03.02	iCMoB
594	Fire extinguisher	1	SAFARI Student Waiting area	2018.03.02	iCMoB
595	Foldable 1200mm*600mm*750mm	10	SAFARI Training room	2018.03.22	iCMoB
596	Legged chair on black fabric	25	SAFARI Training room	2018.03.22	iCMoB
597	Autoclave 47 L capacity automatic lock lid with wire bucket: digital display	1	SAFARI Equipment room	2018.12.17	iCMoB

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
598	Analytical balance	1	SAFARI Procedure room	2018.12.17	iCMoB
599	Voltex mixer	1	SAFARI Procedure room	2018.12.17	iCMoB
600	large dissecting kit	1	SAFARI Procedure room	2018.12.17	iCMoB
601	Manual pipette set 0.2-1000ul (0.2-2, 2-20, 20-200, 200-1000)	1	SAFARI Procedure room	2019.03.19	iCMoB
602	Multi-channel 50-300uL	1	SAFARI Procedure room	2019.03.19	iCMoB
603	Hot plate with magnetic stirer	1	SAFARI Procedure room	2019.03.19	iCMoB
604	parafilm dispenser	1	SAFARI Procedure room	2019.03.19	iCMoB
605	Refrigirator	1	SAFARI Procedure room	2019.03.22	iCMoB
606	APC UPS 2200va, IEC Sockets	1	PAUSTI Lab	2018.03.01	iCMoB
607	Water distiller 20 L /Hour	1	PAUSTI Lab	2018.03.20	iCMoB
608	HP Elite Desk 800 G3 Towel Core i7 3.3 Ghz 6th Gen 8 GB RAM	1	PAUSTI Office	2018.03.26	iCMoB
609	HP Elite Desk 800 G3 Towel Core i7 3.3 Ghz 6th Gen 8 GB RAM	1	PAUSTI Office	2018.03.26	iCMoB
610	HP Elite Desk 800 G3 Towel Core i7 3.3 Ghz 6th Gen 8 GB RAM	1	PAUSTI Office	2018.03.26	iCMoB
611	Conical flask 1000ml	1	PAUSTI Lab	2018.03.29	iCMoB
612	Volumetric flask 100 ml	1	PAUSTI Lab	2018.03.29	iCMoB
613	Conical flask 100ml	4	PAUSTI Lab	2018.03.29	iCMoB
614	Beaker 100ml Pyrex	10	PAUSTI Lab	2018.03.29	iCMoB
615	Round bucket (set/4) for TX -400 rotor 400ml	1	PAUSTI Lab	2018.04.05	iCMoB
616	Sealing Caps for TX-400 Bucket(Set /4 includes grease)	1	PAUSTI Lab	2018.04.05	iCMoB
617	Multi-channel 50-300uL	1	PAUSTI Lab	2019.03.13	iCMoB
618	Sonicator	1	PAUSTI Lab	2019.03.18	iCMoB
619	PH Electrode	1	PAUSTI Lab	2019.03.25	iCMoB
620	Sony 48" Smart TV KDL-48W650D	1	TECHNOLOGY HOUSE	2017.03.21	iODaV
621	HP laptop (core i7, HDD: 1TB. RAM: 8GB)	1	TECHNOLOGY HOUSE	2017.03.23	iODaV
622	Office desk L-shaped office desk	3	TECHNOLOGY HOUSE	2017.03.30	iODaV
623	High back chairs	3	TECHNOLOGY HOUSE	2017.03.30	iODaV
624	Lockable drawers (61cmx122cmx183cm)	2	TECHNOLOGY HOUSE	2017.03.30	iODaV
625	Server	1	Main Server Room	2020.02.14	iCCATS
626	Server Smart Array	2	Main Server Room	2020.02.14	
627	Server Hard Disk	8	Main Server Room	2020.02.14	
628	Desktop Computer	30	SCC 105	2020.02.14	
629	Desktop Monitor	30	SCC 105	2020.02.14	
630	Sony 48" Smart TV KDL-48W650D Screen	1	DIPUIL	2017.03.21	DIPUIL
631	HP Pavillion AIO (core i7, HDD 1TB, RAM: 8GB, Display flat screen 23"	1	DIPUIL	2017.03.23	DIPUIL
632	HP Printer (401dn)	1	DIPUIL	2017.03.23	DIPUIL
633	double pedestal desk with mobile 3 drawer unit + side return	1	DIPUIL	2017.03.30	DIPUIL

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
634	Medium mesh back chairs in black with arms on chrome swivel base	2	DIPUIL	2017.03.30	DIPUIL
635	Legged chair on black fabric	2	DIPUIL	2017.03.30	DIPUIL
636	Executive high mesh back orthopaedic chair in black with arms on chrome swivel base	1	DIPUIL	2017.03.30	DIPUIL
637	4 Drawer metal office filing lockable cabinet in grey color (Locally Made)	1	DIPUIL	2017.03.30	DIPUIL
638	workstation 1300x700x750mm	2	DIPUIL	2017.03.30	DIPUIL
639	Yamaha MGP24X Mixing Console	1	Assembly hall	2017.02.21	CCO
640	Shure UHF-R Dual Channel UHF Handheld Wireless Kit	1	Assembly hall	2017.02.21	CCO
641	Yamaha BR15-15" 2-way 400 Watt Passive P.A Speakers	2	Assembly hall	2017.02.21	CCO
642	Samsung Vacuum	1	Assembly hall	2017.02.21	CCO
643	speaker cable 100m (1.5mm)	2	Assembly hall	2017.02.21	CCO
644	16 channels snake cable 1 metre	1	Assembly hall	2017.02.21	CCO
645	signal cable 1 m	4	Assembly hall	2017.02.21	CCO
646	microphone cables 20m	5	Assembly hall	2017.02.21	CCO
647	neutricspeaker cables	10	Assembly hall	2017.02.21	CCO
648	mono jack monitor connectors	2	Assembly hall	2017.02.21	CCO
649	Equipment rack (8 part cabinet)	1	Assembly hall	2017.02.21	CCO
650	Yamaha plain sound mixer 16 channels	1	Assembly hall	2017.02.21	CCO
651	DBX 31 Band Dual Equilizer	1	Assembly hall	2017.02.21	CCO
652	EV Mid Range Speaker 600w	1	Assembly hall	2017.02.21	CCO
653	Peavy stance monitor speakers 200w	2	Assembly hall	2017.02.21	CCO
654	Peavy power Amplifier 4000w	1	Assembly hall	2017.02.21	CCO
655	power Amplifier 1000w	1	Assembly hall	2017.02.21	CCO
656	shure wired microphones	2	Assembly hall	2017.02.21	CCO
657	cordless microphones	2	Assembly hall	2017.02.21	CCO
658	Goosneck Conference Microphones	5	Assembly hall	2017.02.21	CCO
659	DNG Microphone stands with round base	2	Assembly hall	2017.02.21	CCO
660	Vedio processor/ controller	1	Assembly hall	2017.02.22	CCO
661	speaker HXT ®	1	Assembly hall	2017.03.17	CCO
662	Power regulator 3KVA	1	Assembly hall	2017.03.17	CCO
663	spaeker cable	1	Assembly hall	2017.03.17	CCO
664	speaker jack	1	Assembly hall	2017.03.17	CCO
665	extension cable	1	Assembly hall	2017.03.17	CCO
666	RCA cable	1	Assembly hall	2017.03.21	CCO
667	RCA In phase out jack	1	Assembly hall	2017.03.21	CCO
668	RCA In spike out jack pin	1	Assembly hall	2017.03.21	CCO
669	Canon EOS 5D Mark III DSLR Camera	1	COHRED	2017.02.22	MTAC
670	Nikon D7100 DSLR Camera	1	COHRED	2017.02.22	MTAC
671	Lexar CFast 2.0 256GB 3500x Professional Kit	1	COHRED	2017.02.22	MTAC

S/No.	Description	QTY	Location	Date Acquired	Sub-task Force/ Department
672	Blu Ray Player	1	COHRED	2017.03.10	MTAC
673	laptop core i5 HDD500G RAM4GB	2	COHRED	2017.03.23	MTAC
674	HP Printer (401dn)	1	COHRED	2017.03.23	MTAC
675	patch male to male cable	4	COHRED	2017.03.23	MTAC
676	XLR-XLR MALE cable	4	COHRED	2017.03.23	MTAC
677	1/4 male to male cable 20m	2	COHRED	2017.03.23	MTAC
678	yamaha BR speakers amplifier	1	COHRED	2017.03.23	MTAC
679	speak on connectors (male) 20 metres	2	COHRED	2017.03.23	MTAC

AFRICA-*ai*-JAPAN Project
(Africa Union – *african innovation* – JKUAT and PAUSTI Network Project)

MINUTES OF THE 1ST JCC COMMITTEE MEETING HELD ON 3RD NOVEMBER 2015 IN THE COUNCIL BOARD ROOM AT 10.30AM

a) Members Present at the Meeting

1)	Prof. Mabel Imbuga	-	Vice Chancellor, JKUAT- **Chairing**
2)	Prof. Romanus O. Odhiambo	-	DVC (Academics), JKUAT
3)	Prof. Esther Kahangi	-	Deputy Vice Chancellor (RPE), JKUAT
4)	Prof. Bernard O. Moirongo	-	Deputy Vice Chancellor (Finance), JKUAT
5)	Dr. Moses Rugut	-	Director General, NACOSTI
6)	Mr. Yuki Yoshida	-	Economics Cooperation Division, Embassy of Japan in Kenya
7)	Ms. Keiko Sano	-	Chief Representative, JICA Kenya Office
8)	Mr. Kazuhiro Tambara	-	Senior Representative, JICA Kenya Office
9)	Ms. Keina Niki	-	Representative, JICA Kenya Office
10)	Mr. Evanson Njenga	-	Consultant Energy & Higher Education, JICA Kenya Office
11)	Prof. Manabu Tsunoda	-	JICA, Chief Advisor
12)	Prof. Shiomi Shinjiro	-	JICA Expert
13)	Mr. Noriaki Tanaka	-	Project Coordinator, JICA
14)	Prof. Gabriel Magoma	-	Director of PAUSTI
15)	Prof. Martin Obanda	-	Project Manager, JKUAT
16)	Prof. W. Oyawa	-	Member, JKUAT
17)	Prof. T. Losenge	-	Member, JKUAT
18)	Prof. Naomi Maina	-	Member, JKUAT
19)	Prof. B. Ikua	-	Member, JKUAT
20)	Prof. Hunja Waithaka	-	Member, JKUAT
21)	Dr. Daniel Sila	-	Member **(MC)** , JKUAT
22)	Mr. Harrison Mutua	-	Member, JKUAT
23)	Ms. Agnella Mwandacha	-	Secretariat, JKUAT
24)	Mr. Geoffrey Singombe	-	Secretariat, *i*PIC
25)	Mr. Njuguna Eric	-	Secretariat, AFRICA-*ai*-JAPAN Project Office
26)	Ms. Jane Mbijiwe	-	Secretariat, **Recording**, JKUAT

b) Preamble

- The Chairperson called the meeting to order at 10.30 am. Prayers were led by Prof. Maina and self-introductions were done.

c) Communication from the Chairperson

I. She indicated that JKUAT was proud and felt honored to host the AFRICA-*ai*-JAPAN Project that supports PAUSTI.
II. That it was worthwhile noting that the project had enhanced interactions of lecturers and students between JKUAT and PAUSTI.

d) JICA Representative Remarks

I. She appreciated the AU council and JKUAT in their role in the implementation of the project and the efforts of the Innovation Taskforce in the running of the project.
II. That this was a good opportunity for the various stakeholders to evaluate the project performance and plan future directions.
III. That the project began in June 2014 with the aim of addressing the goal of quality education for sustainable, social & economic development in innovation of African Countries.
IV. That to fulfill this goal it was important for the project to develop human skills in innovation and technology.
V. That it was impressive to note that TICAD-VI is scheduled to be held in Kenya in August 2016 and Japan/JICA will use the forum to advocate for further development and support of Kenya.
VI. That JKUAT Mission 'to offer accessible quality training, research and innovations in order to produce leaders in the fields of Agriculture, Engineering Technology, Enterprise Development, Built Environment, Health Sciences, Social Sciences and other Applied Sciences to suit the needs of a dynamic world' is in line with the mission and objectives of PAUSTI to build Human Resource in African Countries.
VII. That the AFRICA-*ai*-JAPAN Project main objectives are to build African innovations using indigenous knowledge. This has created synergy in the 3 institutions collaborating (JICA/PAUSTI/JKUAT).

e) NACOSTI Remarks

I. That he was impressed by the project progress. That the project will fill in the gap of addressing the disconnect on STI policies hence help to spear head the innovation agenda.
II. That the Ministry and NACOSTI thanks JICA for the financial, structural and human resource support it has offered Kenya in support of PAUSTI.

f) Presentations: *That presentation were made in the following order;-*

I. Background and Overview of the Project/JICA- Prof. Tsunoda
II. Outputs of Project Activities- Prof. Obanda
III. Inputs up to the Present and Plan of Activities; Key Points/Uniqueness/Attractiveness (iPIC, iCB, iCMoB, iPDeC)- Prof. Oyawa, Prof. Losenge, Prof. Maina and Prof. Obanda
IV. Updated Information and Review of PAU/PAUSTI- Prof Waithaka
V. Key Issues and Action Plan for AFRICA-*ai*-JAPAN Project:- Empowerment for PAUSTI/JKUAT Assets and Potentials ; Re-establishment of Equipment Maintenance and Management System for PAUSTI/JKUAT Research; Implementation towards African Innovation and Higher Education Network in S & T using 54 countries of PAU and JKUAT/JICA Linkages such as E-JUST(Prof. Ikua)

- *Presentations circulated on email*

g) <u>Question and Answer Session</u>

<u>Q1.</u> How would other projects be engaged in the project since the running platform seems to be well set out?

<u>Ans.</u> That the model of the project is all inclusive and cuts across all fields with a major focus on human resource development through a competitive open process. That there will also be a display centre at *i*PIC centre for all the innovation products in all fields.

Q2. Is the University Senate engaged in the project management/implementation?
Ans. That some members of the innovation taskforce are also members of the University Senate hence representation is a non-issue.
Q3. What is Kenya National Innovation Agency (KNIA)?
Ans. An arm of NACOSTI that was established following the new STI policy in 2013. KNIA is supposed to scout for innovations in counties and link them with universities. So far a board has been formed, the chair of the board is yet to be named.
Q4. The manufacturing sector is ailing in Kenya, so what role can the project play?
Ans. That the Project hopes to equip the prototyping lab with appropriate equipment to ensure consistency in production of the various products.

Recommendations/way forward

I. That JKUAT be engaged in the upcoming UNICA Meeting that aims at creating an African innovation hub. This will help the institution in sharing their experiences/challenges in commercialization of innovations. That NACOSTI would invite Prof. Tsunoda and Prof. Obanda in the event at a later date.
II. That to ensure consistency/fine finished products that would be aesthetically attractive to customers, the Project Team to consider purchasing equipment such as 3-D printers and precision machine for the prototyping lab.
III. That commercialization road map be carefully considered bearing in mind the main role of the University is academics that the University should therefore not fully engage in business. That instead the Project Team to consider valuing innovation products selling them to entrepreneurs or drawing contractual agreements with private partners for commercialization.
IV. That innovation/research value stock existing in the University be made to include the inputs and intellectual properties involved before engaging industry.
V. That *i*PDeC sub taskforce will play a vital role in linking University innovations to the market hence its roles and activities be fast tracked.
VI. That JICA to consider supporting the Research Chair concept in the University which is ideal in promoting excellence in innovation and research activities.
VII. That PAUSTI to consider including the mechanical engineering course in their programmes since it is a crucial course in engineering.
VIII. That the University to consider reviving the Science Equipment Maintenance Unit (SEMU) since it has been demonstrated that the University equipment could be well maintained by such a unit. In addition the unit would encourage cross-departmental collaboration and innovation activities to find local sustainable solutions
IX. That there is good academic linkage between Egypt Japan University Science and Technology (E-JUST) and JKUAT as evidenced by their PhD Scholarship offer to JKUAT Staff in the month of October 2015.

There being no other business the meeting ended at 1.00 pm

Minutes approved ---------- 17.12.2015

For circulation: **Chairman** **Date**

Minutes confirmed: ---------- 22.11.16

Chairman **Date**

AFRICA-*ai*-JAPAN Project

(Africa Union – *african innovation* – JKUAT and PAUSTI Network Project)

MINUTES OF THE 2ND JOINT COORDINATION COMMINTTEE (JCC) MEETING HELD ON 22ND NOVEMBER 2016 IN THE UNVERSITY COUNCIL ROOM AT 10.00 AM

Members Present:

1) Prof. Mabel Imbuga	-	Vice Chancellor, JKUAT- **Chairing**
2) Prof. Romanus O. Odhiambo	-	Project Director/DVC AA, JKUAT
3) Prof. Esther Kahangi	-	Deputy Vice Chancellor (RPE), JKUAT
4) Prof. Victoria Ngumi	-	Deputy Vice Chancellor (Admin), JKUAT
5) Mr. Masakazu Shibata	-	Economics Cooperation Division, Embassy of Japan in Kenya
6) Ms. Keiko Sano	-	Chief Representative, JICA Kenya Office
7) Mr. Kazuhiro Tambara		Senior Representative, JICA Kenya Office
8) Mr. Masahito Miyagawa	-	Representative, JICA Kenya Office
9) Dr. Naoki Umemiya	-	Mid-term Mission Member
10) Prof. Makoto Kimura	-	Mid-term Mission Member
11) Mr. Asuka Suzuki	-	Mid-term Mission Member
12) Prof. Masayuki Tani	-	JICA Short Term Expert
13) Prof. Manabu Tsunoda	-	JICA, Chief Advisor
14) Prof. Shinjiro Shiomi	-	JICA Expert
15) Mr. Noriaki Tanaka	-	Project Coordinator, JICA
16) Prof. Martin Obanda	-	Project Manager, JKUAT
17) Prof. Bernard Ikua	-	Member, JKUAT
18) Prof. Losenge Turoop	-	Member, JKUAT
19) Prof. Naomi Maina	-	Member, JKUAT
20) Prof. Gabriel Magoma	-	Director of PAUSTI
21) Prof. P.G. Home	-	Member, JKUAT
22) Dr. Kibet Langat	-	PAUSTI
23) Dr. Jane Ng'ethe	-	PAUSTI
24) Dr. Daniel Sila	-	Member (MC) , JKUAT
25) Prof. Joseph M. Wafula	-	Member, JKUAT
26) Dr. Hindzano Ngonyo	-	Member, JKUAT
27) Dr. Caroline Ngugi	-	Member, JKUAT
28) Mr. Cavince Adhere	-	Observer, JKUAT
29) Mr. Martin Mburu	-	Secretariat, JKUAT
30) Mr. Yoseph Hamba	-	Secretariat, JKUAT
31) Mr. Shem Kariuki	-	Secretariat, JKUAT
32) Ms. Caroline Oywer	-	Secretariat, JKUAT
33) Ms. Bridgid Chebet	-	Secretariat, JKUAT/ ***Recording***

Apologies:

1) Prof. Collete A. Suda	-	PS, Ministry of Higher Education
2) Dr. Moses Rugut	-	Director General, NACOSTI
3) Prof. Bernard O. Moirongo	-	Deputy Vice Chancellor (Finance), JKUAT
4) Mr.Harrison Mutua	-	Member, JKUAT
5) Ms. Jane Gatwiri	-	Secretariat, JKUAT

Min. 02/01 - Preamble

The Chairperson called the meeting to order at 10.20 a.m.

Min. 02/02 – Opening Remarks from the Chair

The Chair welcomed all members to the meeting with the following to note:

- That PAUSTI is one of the five institutes of Pan African University (PAU) and focusses on Science, Technology and Innovation
- That the project was now in its third year following its launch in June 2014
- That the overall goal of the project was to develop human resource for industrial development in the area of Science, Technology and Innovation in Africa
- That the project aims at producing graduates with skills and knowledge in Science, Technology and Innovation that would drive the industrial development agenda in Africa.
- That to achieve its goal, the project should significantly improve the prevailing work environment by creating the necessary human resource and enhance basic infrastructure that will facilitate research and innovation activities capable of impacting on the wellbeing of all stakeholders on the African Continent and beyond
- That the strategy adopted for implementing the project included parties agreeing to a set of guidelines that comprehensively described key activities and inputs from each partner:
  - JICA to provide long term and short term experts to administer and manage activities on the ground; long term trainings to obtain PhD's in Japan for young researchers at JKUAT/PAUSTI, provision of scientific equipment and basic infrastructure, competitive research grants towards innovation under the JICA Technical Cooperation Program
  - That the Government of Kenya to provide funding for the construction of the PAUSTI building
  - JKUAT to provide both academic and administrative counterpart personnel, suitable and furnished office space and stationeries and
- There has been a tremendous progress in all areas during the past two years
- That the deliberations at the meeting is to share updates on the progress made so far; to identify immediate and potential challenges, and come up with suggestions and/or strategies for the way forward in achieving the goal of the AFRICA-*ai*-JAPAN Project.

Min. 02/03 - Messages from JICA

i) Ms. Sano, the Chief Representative JICA Kenya office appreciated strong partnership between the Governments of Kenya and JAPAN which continue to enable implementation of the project
ii) She also commended the good working relationship between JKUAT, PAUSTI and NACOSTI in driving the project forward
iii) That the AFRICA-*ai*-JAPAN Project main objectives are to build African innovations using endogenous knowledge. This has created synergy in the 3 institutions collaborating (JICA/PAUSTI/JKUAT).

Min. 02/04- Confirmation of the Minutes of the 1st JCC Meeting

Confirmed:

Minutes of the of the 1st JCC meeting held on 3rd Nov 2015 which were proposed by Prof. T. Losenge and seconded by Prof. S. Shiomi as a true recording of the meeting.

Min. 02/05 - Presentations:

Presentations were made as follows;-

i) Basic Concepts and Key Events of the Project - Prof. Tsunoda
ii) Inputs of the Project activities- Mr. Tanaka
iii) General Outputs of Project Activities - Prof. Obanda
iv) Key Results/Uniqueness/Attractiveness (iPIC, iCB, iCMoB, iPDeC) - Prof. Ikua, Prof. Losenge, Prof. Maina and Prof. Obanda
v) Updates on PAUSTI by Prof Magoma
vi) New messages through the project by Prof. J. Wafula
vii) Report from Mid-term Review Mission/Signing of Minutes of Meeting (M/M) by Dr. Umemiya

Min. 02/06 - Recommendations from Mid-term Mission Team

i) The Taskforce and Sub-taskforce Committee continue to make efficient use of inputs by Kenya and Japanese sides, such as Task Force, Sub-task forces, Innovation research funds, Basic equipment in iPIC Building, Small Animal House and the planned Agriculture Lab Building to be renovated.
ii) Officially set up Centre for Science Equipment Maintenance (CeSEM) with approval from JKUAT as soon as possible
iii) Accelerate activities towards the commercialization/practical use of research outputs and its feedback to research/education activities in JKUAT/PAUSTI
iv) Put efforts to publish more papers in highly recognized journals, which would upgrade ranking of the University
v) Become a pioneer model research-oriented University in PAU as the Centre of Excellence in STI for the whole continent of Africa and beyond
vi) Finalize the construction of PAUSTI building(Block A) to enhance innovation researches of iCMoB

Min. 02/07 - Question and Answer Session

It was observed that:

i) Renewable Energy Activities in IEET under JICA can work together with iPIC
ii) That PAUSTI be given Petroleum and Gas as a new program

Min.02/08- General Recommendations/Way Forward

i) AUC appreciates JICA/JKUAT efforts towards PAUSTI success
ii) Support renovation of Agriculture Lab Building
iii) Finalize construction of the Small Animal House
iv) Consider renovation of Engineering Workshops
v) When iCMoB purchases an Incinerator it should be preferably big enough to handle all University wastes
vi) iPIC considers linking with IEET on Renewable Energy activities
vii) The project considers supporting purification of water as one of their innovation activities
viii) Consider operationalizing iCEOD
ix) Show case all Innovation outputs

There being no other business the meeting ended at 1.20 p.m.

Minutes approved 13.12.16
For circulation: **Chairman** **Date**

Minutes confirmed: 21.11.17
Chairman **Date**

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MINUTES OF THE 3rd JOINT COORDINATION COMMITTEE (JCC) MEETING HELD ON 21st NOVEMBER, 2017 AT iPIC BUILDING FROM 10. 25 AM

Present:

1) Prof. Mabel Imbuga	-	Vice Chancellor, JKUAT- **Chairing**
2) Prof. Paul N. Kanyari	-	Chairman of Council, JKUAT
3) Ms. J. Bertha Dena	-	Council Member, JKUAT
4) Mr. Archer Arina	-	Council Member, Representing PS, Ministry of Education
5) Dr. Moses Rugutt	-	Director General, NACOSTI
6) Prof. Romanus O. Odhiambo	-	Project Director/DVC AA, JKUAT
7) Prof. Mary O. Abukutsa-Onyango	-	Deputy Vice Chancellor (RPE), JKUAT
8) Prof. Victoria Ngumi	-	Deputy Vice Chancellor (Admin), JKUAT
9) Mr. Titus Wasike	-	Finance Officer, JKUAT/ Representing DVC Finance
10) Mr. Masakazu Shibata	-	Embassy of Japan in Kenya
11) Ms. Keiko Sano	-	Chief Representative, JICA Kenya Office
12) Prof. Hiroshi Koaze	-	Obihiro University of Agriculture and Veterinary Medicine
13) Mr. Shinjiro Amameishi	-	Senior Representative, JICA Kenya Office
14) Ms. Shoko Isokawa	-	Representative, JICA Kenya Office
15) Prof. Manabu Tsunoda	-	Project Chief Advisor, JICA
16) Prof. Shinjiro Shiomi	-	Project Expert, JICA
17) Ms. Sachiko Oda	-	Project Coordinator, JICA
18) Prof. Martin Obanda	-	Project Manager, JKUAT
19) Prof. Bernard Ikua	-	Member, JKUAT
20) Prof. Patrick G. Home	-	Member, JKUAT
21) Dr. Jane Ng'ethe	-	PAUSTI Representative
22) Prof. Daniel Sila	-	Member (MC) , JKUAT
23) Prof. Joseph M. Wafula	-	Member, JKUAT
24) Dr. Hindzano Ngonyo	-	Member, JKUAT
25) Dr. Caroline Ngugi	-	Member, JKUAT
26) Prof. John Wesonga	-	iCB Representative
27) Prof. Justus Onguso	-	iCB Representative
28) Prof. Margaret Oloko	-	iPDeC Representative
29) Dr. John Kinyuru	-	iODaV Representative
30) Ms. Jane Kiarie	-	iCMoB representative
31) Dr. Peter Kihato	-	iPIC Representative
32) Mr. Shem Kariuki	-	iPiC, Representative
33) Arch. Juma Oino	-	SABS
34) Mr. Cavince Adhere	-	CCO, JKUAT
35) Mr. Eric Njuguna	-	Project Staff
36) Mr. Patrick Juma	-	Project Staff
37) Mr. Martin Mburu	-	Project oFF
38) Ms. Esther Ndiwa	-	Project Staff
39) Ms. Zipporah Mwangi	-	Project Staff
40) Ms. Bridgid Chebet	-	Secretariat, JKUAT/***Recording***
41) Ms. Jane G. Mbijiwe	-	Secretariat, JKUAT/***Recording***

Apologies:

1)	Prof. Collete A. Suda	-	PS, Ministry of Higher Education
2)	Prof. Bernard O. Moirongo	-	Deputy Vice Chancellor (Finance), JKUAT
3)	Prof. Gabriel Magoma	-	Director of PAUSTI
4)	Prof. Losenge Turoop	-	Member, JKUAT
5)	Prof. Naomi Maina	-	Member, JKUAT
6)	Mr. Harrison Mutua	-	Member, JKUAT

MIN. 03/01 - PREAMBLE

i. The Chairperson, Vice Chancellor JKUAT, called the meeting to order at 10.20 a.m.
ii. The Master of Ceremony welcomed members to the meeting, went through the day's program and self-introductions were done.

MIN. 03/02: ADOPTION OF AGENDA

Adopted:

1. Apologies
2. Remarks
3. Confirmation of the minutes of the 2nd JCC meeting.
4. Presentations
5. Question and answers session
6. Closing remarks

MIN. 03/03 REMARKS

a) Remarks from the Chairperson- Prof. Mabel Imbuga, Vice Chancellor JKUAT

Noted:

i. That she was grateful to the Japanese Government through which JICA had been able to support the University since its inception;
ii. That AFRICA-*ai*-JAPAN Project is a tripartite agreement between the Government of Japan, African Union Commission (AUC) and the Government of Kenya initiated in June 2014, with the objective to strengthen research and innovation capacity of JKUAT/PAUSTI;
iii. That the meeting was critical for the review of AFRICA-*ai*-JAPAN Project progress and impact assessment.
iv. That AFRICA-*ai*-JAPAN Project had enabled JKUAT solidify its international standing as a strong model for scientific and technological research and innovation; JKUAT collaborates with E-JUST providing an opportunity to benchmark and create collaborations;
v. That research and innovation capacity of JKUAT had received a major boost following the establishment of two modern research facilities by JICA under AFRICA-*ai*-JAPAN Project and PhD training opportunity of its 8 members of staff;
vi. That PAUSTI had emerged as a leading institute of the PAU, with the fifth cohort consisting about 150 students drawn from 38 countries. That they were looking forward to the second phase to increase the numbers.

b) Message from Chief Representative JICA Kenya Office, Ms. Keiko Sano

Noted:

i. That cordial working relations between AFRICA-*ai*-JAPAN Project and its partners had enabled the Project to register a number of milestones;
ii. That JKUAT and PAUSTI researchers should proactively engage with industry for commercialization of the innovation outputs;
iii. That the University should proceed to operationalize CeSEM;
iv. That JICA will continue supporting JKUAT and PAUSTI to provide an enabling environment for the achievement of SDGs;
v. That Project Managers consider sharing lessons learned in implementation of the Project with other stakeholders.

c) Message From Director General NACOSTI, Dr. Moses Rugutt

Noted:

i. That Africa Union and Ministry of Education (Kenya) commended for initiating PAUSTI/JKUAT Project;
ii. That though Kenya had committed a total of KES.53 billion annually towards research and innovation agenda, the funding still fell short. Therefore, commended JICA for the support towards JKUAT/PAUSTI through AFRICA-*ai*-JAPAN Project;
iii. That the Government of Kenya is in the process of introducing new curriculum with emphasis on practical skills. That this is expected to shift thinking to more entrepreneurial attitude in education.
iv. That East African Science and Technology Commission (EASTECO) had been set up to enhance regional integration;
v. That NACOSTI has an Innovation Policy and Universities should consider aligning to it as the policy guides on intellectual property protection and resource sharing;
vi. That academia in universities mentor young scientists to strengthen the culture of innovations.

d) Message from Prof. Mary O. Abukutsa- Onyango, DVC (RPE) JKUAT

Noted:

i. That Research, Production and Extension (RPE) Division runs the research and innovation mission of the University. That partnerships are critical and therefore grateful to the various stakeholders in the AFRICA-*ai*-JAPAN Project;
ii. That RPE will continue to enhance and strengthen the cooperation;
iii. That it is crucial to build infrastructure and was happy to note the handing over of iPIC and SAFARI buildings to the University on 21st November, 2017;
iv. That AFRICA-*ai*-JAPAN project had strengthened human resource aspect through training of JKUAT & PAUSTI staff and students.

e) Message from Council Chairman (JKUAT), Prof. Paul N. Kanyari

He commended Japan and the Kenya Governments for initiating the Project.

Noted:

i. That the cooperation be maintained to benefit future generations. This project has potential for job for job creation and disease management;
ii. That renovated (SAFARI & iPIC building) are of international standards hence the JKUAT & PAUSTI community were encouraged to fully utilize them;
iii. That the University was challenged to upscale and commercialize her innovations.

MIN. 03/04- CONFIRMATION OF THE MINUTES OF THE 2ND JCC MEETING

Confirmed:

Minutes of the of the 2nd JCC meeting held on 22nd November, 2016 were proposed by Prof. Obanda and seconded by Ms. Sano as a true recording of the meeting deliberations.

MIN. 03/05 - PRESENTATIONS:

Presentations were made as follows;-

a) Key actions of the Project (Nov.2016-Nov.2017) - Prof. M. Tsunoda

Noted:

I. That research environment in the areas of STI in JKUAT/PAUSTI had been enhanced through;
   a) Renovation of iPIC and SAFARI Buildings
   b) Strengthen Molecular Biology Laboratory and Green houses
   c) Support for CeSEM to maintain the conditions of scientific equipment
   d) Support for Directorate of Intellectual Property University Industrial Liaison (DIPUIL) office to help in IP issue.
II. That research projects towards African innovation in JKUAT/PAUSTI are put into practice through special seminars and project funding;
III. That information on research activities of JKUAT/PAUSTI is shared with higher education; research institutions and industrial arena in Africa and overseas through *Agritech News* articles of JKUAT, JKUAT/Project websites, visitors from Japan to JKUAT, visitors from Secondary schools, JKUAT Multimedia Festival and Japanese Consortium meetings.

b) Inputs and Outputs of the Project activities(Nov.2016-Nov.2017)- Prof. M. Obanda

Noted:

I. That the focus points for the year 2016/2017 were:
   a) More innovative activities with uniqueness and special features of JKUAT/PAUSTI (Change of the mindset);
   b) Increase visibility of PAUSTI/JKUAT/AFRICA-*ai*-JAPAN Project all over the world
   c) Linkage with industry through iPDeC.

II. That other new activities for 2017 were:
   a) Monitoring and Evaluation of Project activities;
   b) University-Industry-Community Collaboration;
   c) International/Local Network activities towards African Innovation e.g. Egypt, Rwanda, PAU Institutes;
   d) Training (sensitization) in Proposal and Scientific Writing, IP Protection and Open Data Concepts;
   e) Strengthening CeSEM;
   f) Strengthening Display/Visualization;
   g) Field activities e.g. Do-nou technology for Somalia, PAUSTI and JKUAT;
   h) Preparations towards establishment of Soil and Plant Clinic;
   i) Supporting of University ranking.

III. That the inputs from JICA for project activities were:
   a) Operational cost for the project activities
   b) Long term JICA experts
   c) Short term JICA experts
   d) Short term training/fellowships
   e) Innovation research to empower and reinforce JKUAT and PAUSTI research capacity
   f) Seed research fund for PAUSTI students

c) Key Results/Uniqueness/Attractiveness (iPIC, iCB, iCMoB, iPDeC, iODaV) - Prof. B. Ikua, Prof. J. Wesonga, Dr. C. Ngugi, Prof. M. Obanda and Prof. J. Wafula

I. iPIC Sub-taskforce

Presented:
   a) Key thematic areas; Environment and Infrastructure, Sustainable Transport Vehicles and Systems, Agriculture and Industrial Machineries and Manufacturing process;
   b) Current activities; HR Development, iPIC Building utilization, Research, Innovation and Dissemination, Skills Development/Training, Modernization and Utilization of Equipment, CeSEM establishment (equipment maintenance), Equipment utilized for innovations, Curricula Development for PAUSTI (ME &MT);
   c) Students Exchange Activities.

II. iCB Sub-taskforce

Presented:
   a) Key thematic areas; Food Security and Value addition, Bio-Diversity and Conservation, Animal Health and Production and Bio- Resources and Waste Management;
   b) Research activities (Seminars);
   c) Infrastructure and new equipment ;
   d) Utilization of equipment;
   e) Industry engagement –Wago Co. Ltd;
   f) Monitoring and evaluation activities;
   g) ALB renovation and extension;
   h) Future outlook for iCB; Private-Public partnership in product development and technology, enhanced faculty staff capacity, enhanced infrastructure development and joint PAU and JKUAT activities.

III. iCMoB Sub-taskforce

Presented:

a) Thematic areas; Drug and Disease control, Biodiversity and Conservations, Food Security and Value addition;
b) Establishment of PAUSTI Molecular Biology Laboratory at PAUSTI Block (A);
c) Renovation of SAFARI;
d) Future plans; Training and Refresher courses in Animal care and use
e) Purchase of incinerator;
f) PAUSTI Lab upgrade for Tissue Culture ;
g) Collaboration/linkage with Japanese Universities.

IV. iPDeC Sub-taskforce

Presented:

a) Linkage between academia and industry;
b) iPDeC activities; Identification of Innovation products for commercialization, Innovation product profiling, Innovation Business Plan Development and Innovation Incubation ;
c) Mid-Term progress Report for iPDeC Commercialization activities 3rd year;
d) 12 Innovation products identified for profiling, 8 completed; Motorized Block Press, Briquetting Machine, Converting Waste Polythene into Energy sources, Mesoporous Sillica Nanoparticles Aided Biological Control Agents in the Control of Bacteria Wilt in Tomato, Precision Blow Molding Machine, Medical Information System, 3-in-1 Milling Machine, Hybrid Solar Bio drier, Alternative Digital Power Distribution System, Bont Tick Trap, Irrigation Manager and Shujaa Tractor;
e) Operating Technical/Economic Assumptions for Up-scaling JKUAT innovations;
f) Way forward; Management to support for Production Directorate through JKUAT Innovation Fund, Innovation commercialization pathway to be adopted as, Production Directorate-DIPUIL-JKUAT Industrial Technology Park -Commercialized products;
g) Benefits of proposed iPDeIC Centre; JKUAT Visibility enhanced, provide appropriate entrepreneur environment, create awareness of JKUAT innovation products, provide forum for training for various stakeholders, job creation, income generation, fill the innovation product commercialization gap and Networking and Mentoring.

V. iODaV Sub-taskforce

Presented:

a) JKUAT Open Research Data (JORD) Policy- developed and implemented in February, 2016;
b) Thematic areas; Open research data based on Innovation, Reuse of research data, Open Data principles, Standards & JORD, Smart Learning-ThinkBoard, data, Info & Scientific visualization and data analytics;
c) Hackathon on open research data: encouraging a balanced demand and supply of open research data;
d) Collaboration with Kyoiku Joho Services (KJS) Project.

VI. Updates on PAUSTI by Dr. J. Ng'ethe

Presented:

a) PAU Hubs based on thematic areas; Institute of Basic Sciences Technology and Innovation (PAUSTI) in Kenya at JKUAT, Institute of Governance, Humanities and Social Sciences (PAUGHSS) in Cameroon at University of Yaoundé II, Institute of Life and Earth Sciences (PAULESI) in Nigeria at University of Ibadan, Institute of Space Sciences (PAUSS) in South Africa at Cape Peninsula University of Technology and Institute of Water and Energy Sciences (PAUWES) in Algeria at University of Tlemcen;
b) Statistics; PhD & MSc. Programmes and 5th Cohort joining in November 2017 with two new MSc. programmes (Mechanical and Mechatronic Engineering);
c) Continental students representation;
d) Establishment of PAUSTI Block A and Block B and equipping the laboratory;
e) Status of PAUSTI Alumni network;
f) Monitoring and evaluation of research of PAUSTI students.

VII. Proposed Key Points of Activities towards the project Next Stage by Prof. Shiomi & Prof. Home

Presented:

a) Next Year Plan; proposed schedule of Innovation Research Activity (May 2017-Mar 2018);
b) Focus points for the year 2018/2019; More innovative activities with uniqueness and special features of PAUSTI/JKUAT, promoting PAUSTI/JKUAT/Project to all over the world through networking, linkages with industry and academia through iPDeC and strengthening CeSEM for maintenance of equipment, the Sustainable Development Goals Center for Africa (SDGC/A), Do-nou Technology by CORE/JKUAT;
c) Next Stage Plan (New Project); formation of AFRICA-ai-JAPAN Project Phase 2 for 5 years starting 4th June 2019- 3rd June 2024.

MIN. 03/06 - QUESTION AND ANSWER SESSION

Noted

i. That members understood more of the project activities and were satisfied of the much that had been achieved;
ii. That the Project members were challenged to consider developing avenues for disseminating research outputs to the community;
iii. That NACOSTI should consider funding sabbatical leave for local University staff since this will encourage mobility, Director NACOSTI indicated that he would take up the issue and maybe through NRF sabbatical leave would be supported;
iv. That it was commendable to note two major facilities (SAFARI & iPIC buildings) had been renovated through the project support; that this should be publicized to enable various stakeholders to utilize them;
v. That the University should consider adopting and utilizing technologies developed by the various sub taskforces for instance, lecture videotaping by iODaV;
vi. That the Senior Representative of JICA advised the Taskforce members to utilize indicators of the Project Design Matrix (PDM) to understand the progress clearly.

MIN. 03/07– HANDING OVER OF iPIC AND SAFARI BUILDINGS/EQUIPMENT

Handing over took place during the 3rd JCC meeting on 21st November, 2017.

- Receiving the facilities on behalf of JKUAT, Council Chair (Prof. Paul N. Kanyari) thanked JICA for the support adding that specialized laboratories will be instrumental in facilitating JKUAT's innovation and entrepreneurship agenda.

MIN.03/08- GENERAL RECOMMENDATIONS/WAY FORWARD

i) JKUAT to be the pioneers in Smart Learning
ii) JKAUT to showcase all Innovation outputs to the public

There being no other business the meeting ended at 1.20 p.m.

Minutes approved ---------- 11.12.17
For circulation: **CHAIRPERSON** **DATE**

Minutes confirmed: ---------- 22/11/2018.
CHAIRPERSON **DATE**

AFRICA -ai- JAPAN Project
African Union - *african innovation* - JKUAT AND PAUSTI Network Project
P. O. Box 62000-00200 Nairobi, Tel. No. +254 0770-434-375, Email: jicapausti@jkuat.ac.ke

MINUTES OF THE 4TH JOINT COORDINATION COMMITTEE (JCC) MEETING HELD ON 22ND NOVEMBER, 2018 AT UNIVERSITY COUNCIL ROOM FROM 10. 00 AM

Present:

1) Prof. Victoria Wambui Ngumi	-	Vice Chancellor, JKUAT/*Chairing*
2) Prof. Paul N. Kanyari	-	Chairman of Council, JKUAT
3) Prof. Bernard O. Moirongo	-	Deputy Vice Chancellor (Finance), JKUAT
4) Ms. Chie Miyashita	-	Coordinator for Economic Cooperation, Embassy of Japan, Kenya
5) Dr. Naoki Umemiya	-	Director, Human Development Department, JICA HQ
6) Ms. Mai Toda	-	Program Officer, Human Development Department, JICA HQ
7) Ms. Keiko Sano	-	Chief Representative, JICA Kenya Office
8) Mr. Masahito Miyagawa	-	Representative, JICA Kenya Office
9) Mr. Simon Kariuki	-	Education In-house Consultant, JICA Kenya Office
10) Prof. Hiroshi Koaze	-	Project Chief Advisor, JICA
11) Prof. Shinjiro Shiomi	-	Project Expert, JICA
12) Ms. Sachiko Oda	-	Project Coordinator, JICA
13) Prof. Martin Obanda	-	Project Manager, JKUAT
14) Dr.(Eng.) Hiram Ndiritu	-	Taskforce Member, JKUAT
15) Prof. Patrick G. Home	-	Taskforce Member, JKUAT
16) Prof. Naomi Maina	-	Taskforce Member, JKUAT
17) Prof. Joseph M. Wafula	-	Taskforce Member, JKUAT
18) Dr. Caroline Ngugi	-	Taskforce Member, JKUAT
19) Prof. Daniel Sila	-	Taskforce Member *(MC)* , JKUAT
20) Eng. Harrison Mutua	-	Taskforce Member, JKUAT
21) Dr. Jane Ng'ethe	-	Taskforce Member/PAUSTI Representative
22) Dr. John Kinyuru	-	Taskforce Member, JKUAT
23) Prof. Justus Onguso	-	iCB Representative, JKUAT
24) Mr. Steve Wakhu	-	Corporate Communication Office, JKUAT
25) Mr. Eric Njuguna	-	Accountant, AFRICA-ai-JAPAN Project Office
26) Mr. Martin Mburu	-	Research Fellow, AFRICA-ai-JAPAN Project Office
27) Mr. Juma Patrick	-	Research Fellow, AFRICA-ai-JAPAN Project Office
28) Ms. Esther Ndiwa	-	Assistant Accountant, AFRICA-ai-Japan Project Office
29) Ms. Caroline Oywer	-	Secretariat, JKUAT
30) Ms. Bridgid Chebet	-	Secretariat, JKUAT/*Recording*

In Attendance:

1. Prof. Haroun Mengech	-	Principal, COHES
2. Mr. Daniel Omondi	-	iPIC Sub-taskforce
3. Prof. Elijah Ateka	-	Dean, SOAES

Apologies:

1) Prof. Collette A. Suda	-	Chief Administrative Secretary& PS, University Education
2) Dr. Moses Rugutt	-	Director General, NACOSTI
3) Prof. Robert Kinyua	-	Project Director/DVC AA, JKUAT
4) Prof. Mary Abukutsa-Onyango	-	Deputy Vice Chancellor (RPE), JKUAT
5) Prof. Bernard Ikua	-	Deputy Vice Chancellor (Admin), JKUAT
6) Prof. Gabriel Magoma	-	Director, PAUSTI
7) Prof. Losenge Turoop	-	Taskforce Member, JKUAT
8) Dr. Hindzano Ngonyo	-	Taskforce Member, JKUAT

MIN. 04/01 - PREAMBLE

i. The meeting was called to order at 10.35 a.m. staring with a word of prayer from Dr. Caroline Ngugi.
ii. The Master of Ceremony welcomed members to the meeting, went through the day's program and self-introductions were done.

MIN. 04/02: ADOPTION OF AGENDA

Adopted:

1. Introduction of Participants
2. Opening Remarks from the Chair
3. Messages from MOE, NACOSTI, JICA and JKUAT
4. Presentations
5. Way forward suggested by JICA HQ
6. Question and Answers, Suggestion, Recommendations
7. Closing remarks

MIN. 04/03 REMARKS

a) Message from the Chairperson- Prof. Victoria W. Ngumi, Vice Chancellor JKUAT

Noted:

i. The Vice Chancellor appreciated all stakeholders who had made possible the implementation of the excellent collaboration between Ministry of Education (Kenya), JICA, JKUAT, PAUSTI and AUC;
ii. That in 2014 the Government of Kenya, Government of Japan and the African Union Commission signed MoU to confirm their cooperation for advancing PAUSTI with the purpose to develop human resources for social and economic development by raising the quality of higher education institutions;
iii. That based on the agreements, Japan through JICA provides technical support to PAUSTI through promoting Science, Technology and Innovation activities at JKUAT while Government of Kenya facilitate construction of PAUSTI Complex;
iv. That AFRICA-*ai*-JAPAN Project had enabled JKUAT solidify its international standing as a strong model for scientific and technological research and innovation;
v. That going forward, the project was requested to improve the prevailing work environment by creating necessary human resource and infrastructure that facilitate research and innovation activities.

b) Message from Council Chairman- Prof. Paul N. Kanyari

Noted: That he acknowledged that iPIC and SAFARI Buildings handed over in 2017 had boosted research and innovation capacity of the University. He challenged JKUAT/PAUSTI researchers to proactively engage the industry for commercialization of the research outputs to ensure JKUAT has unmatched footprints.

c) Message from JICA Kenya Office -Ms. Keiko Sano, Chief Representative, JICA Kenya Office

Noted:

i. That she appreciated the efforts of PAUSTI in producing scientists for the development of the continent.
ii. That PAUSTI had been one of the greatest achievement of the project after admitting 450 students and graduating 120 postgraduate students including 14 PhDs.
iii. That she highlighted the upcoming TICAD VII to be held in August 2019 in Tokyo. She encouraged JKUAT to participate in the conference and showcase their milestones in research activities.

MIN. 04/04- CONFIRMATION OF THE MINUTES OF THE 3RD JCC MEETING

Confirmed:

That minutes of the of the 3rd meeting held on 21st November, 2017 were proposed by Prof. Justus Onguso and seconded by Prof. Martin Obanda as a true recording of the meeting deliberation proceedings.

MIN. 04/05 - PRESENTATIONS:

Presentations were made as follows;-

a) Key actions of the Project (Nov.2017-Nov.2018) - *Prof. H. Koaze*
b) Inputs and Outputs of the Project activities (Nov.2017-Nov.2018)- *Prof. M. Obanda*
c) Key Results/Uniqueness/Attractiveness (iPIC/CeSEM, iCB, iCMoB, , iPDeC & M&E,) *Dr. H. Ndiritu, Prof. J. Onguso, Prof. N. Maina, Prof. J. Wafula and Prof. M. Obanda*
d) Updates from PAUSTI- *Dr. J. Ng'ethe*
e) Summary – *Prof. H. Koaze*

MIN. 04/06 – WAY FORWARD SUGGESTED BY JICA HQ

Reported;-

i. That JICA HQ had requested members for the approval to extend the Project for one year (June 2019 – June 2020) and it was proposed by Dr. Hiram Ndiritu and seconded by Dr. Jane Ng'ethe for approval of extension;
ii. That the reason for one year extension is to enable completion of Project Operation Indicator I and II and also avoid there being a gap between the current project and the next project which is being discussed by the Government of Japan. Indicator I is to enhance CeSEM operation and Indicator II is to achieve the targeted publications.

MIN. 04/07 – QUESTION & ANSWER, SUGGESTIONS AND RECOMMENDATIONS

Noted:

i. That iCMoB had managed to apply for 4 patents that were linked to JKUAT. iPDeC were requested to upscale the patented projects towards commercialization
ii. That re-use of data in iODaV be discussed further as it was a good idea
iii. Staff posting for CeSEM, SAFARI and Display corner be finalized
iv. Publications to be collected from Library to achieve the set targets
v. That PAUSTI 6th Cohort will be reporting in February 2019 and not November, 2018
vi. That PAU HQ had been moved to Cameroon from Ethiopia.

There being no other business the meeting ended at 1.30 p.m.

MINUTES APPROVED FOR CIRCULATION: ..... **CHAIRMAN** ..... 8/1/2019 **DATE**

MINUTES CONFIRMED: ..... **CHAIRMAN** ..... 20/11/2019 **DATE**

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MINUTES OF THE 5TH JOINT COORDINATION COMMITTEE (JCC) MEETING HELD ON 20TH NOVEMBER, 2019 AT UNIVERSITY COUNCIL ROOM FROM 10. 00 AM

Present:

1) Prof. Victoria Wambui Ngumi	-	Vice Chancellor, JKUAT/*Chairing*
2) Mr. Dan Mesis	-	Rep. CAS, PS, State Department of University Education
3) Prof. Robert Kinyua	-	Project Director/DVC AA, JKUAT
4) Prof. Bernard Ikua	-	Deputy Vice Chancellor (Admin), JKUAT
5) Prof. Mary Abukutsa-Onyango	-	Deputy Vice Chancellor (RPE), JKUAT
6) Mr. Katsutoshi Komori	-	Chief Representative, JICA Kenya Office
7) Mr. Shinjiro Amameishi	-	Senior Representative, JICA Kenya Office
8) Mr. Masahito Miyagawa	-	Senior Representative, JICA Kenya Office
9) Ms. Mika Okamura	-	Representative, JICA Kenya Office
10) Mr. Simon Kariuki	-	In-house Consultant, JICA Kenya Office
11) Ms. Chie Miyashita	-	Coordinator for Economic Cooperation, Embassy of Japan, Kenya
12) Dr. Naoki Umemiya	-	Director, Human Development Department, JICA HQ
13) Ms. Mai Toda	-	Program Officer, Human Development Department, JICA HQ
14) Mr. Shigeo Sakai	-	Senior Consultant, Japan Development Service Co. Ltd.
15) Prof. Makoto Kimura	-	Chairman, Japanese Supporting Universities Consortium
16) Prof. Hiroshi Koaze	-	Project Chief Advisor, AFRICA-ai-JAPAN Project/JICA
17) Dr. Shohei Aoki	-	Project Coordinator, AFRICA-ai-JAPAN Project/ JICA
18) Dr. Jane Ng'ethe	-	Taskforce Member/PAUSTI Representative
19) Prof. Losenge Turoop	-	Taskforce Member, JKUAT
20) Dr.(Eng.) Hiram Ndiritu	-	Taskforce Member, JKUAT
21) Dr. Caroline Ngugi	-	Taskforce Member, JKUAT
22) Dr. Michael Kimwele	-	Taskforce Member, JKUAT
23) Prof. Daniel Sila	-	Taskforce Member *(MC)* , JKUAT
24) Eng. Harrison Mutua	-	Taskforce Member, JKUAT
25) Dr. Mutinda Kyama	-	Taskforce Member, JKUAT
26) Prof. Waweru Mwangi	-	iCCATS Representative, JKUAT
27) Mr. Daniel Omondi	-	In-charge, CeSEM, JKUAT
28) Mr. Steve Wakhu	-	Corporate Communication Office, JKUAT
29) Mr. Eric Njuguna	-	Project Accountant, AFRICA-ai-JAPAN Project
30) Ms. Bridgid Chebet	-	Secretariat/***Recording***

Apologies:

1) Prof. Collette A. Suda	-	CAS & PS, University Education
2) Dr. Gumato Yatani Ukur	-	Chairperson, JKUAT Council
3) Dr. Moses Rugutt	-	Director General, NACOSTI
4) Prof. Gabriel Magoma	-	Director, PAUSTI
5) Dr. Hindzano Ngonyo	-	Taskforce Member, JKUAT
6) Prof. Martin Obanda	-	Project Manager, JKUAT
7) Prof. Patrick Home	-	Taskforce Member, JKUAT
8) Dr. John Kinyuru	-	Taskforce Member, JKUAT
9) Ms. Caroline Oywer	-	Secretariat, JKUAT

MIN. 05/01: PREAMBLE

i. The meeting was called to order at 10.20 a.m. with a word of prayer from Dr. Caroline Ngugi.
ii. The Master of Ceremony welcomed members to the meeting, went through the day's program and self-introductions done by members.

MIN. 05/02: ADOPTION OF AGENDA

Adopted:

1. Opening Remarks from the Chair
2. Messages from MoE, JICA and JKUAT
3. Confirmation of the Minutes from 4th JCC meeting
4. Key Inputs by JICA (Jun 2014-Nov 2019)
5. Summary of Outputs by JKUAT/PAUSTI (Jun 2014- Nov 2019)
6. Key Africa Innovation, Industrial Linkage and Dissemination
7. Updates from PAUSTI
8. Summary
9. Evaluation of the Project
10. Way forward as suggested by JICA HQ
11. Comments by Japanese Support Committee
12. Question and Answers, Suggestion, Recommendations
13. Closing remarks

MIN. 05/03: REMARKS

a) Message from the Chair- Prof. Victoria W. Ngumi, Vice Chancellor, JKUAT

Noted:

i. That AFRICA-ai-JAPAN Project, a Project which is a tripartite agreement between Government of Japan, African Union Commission (AUC) and Government of Kenya signed a one-year extension from January, 2019 to June, 2020. This was to enable JKUAT solidify its international standing as a strong model for scientific and technological research and innovation
ii. That one of the purpose of the meeting was to take stock of the progress and impact of the AFRICA-ai-JAPAN Project and this includes; PAUSTI emerging as a leading Institute of the PAU who was hosting its 5th graduation on 29th November, 2019.
iii. That through the Project, JKUAT research environment had been improved following establishment of IPIC Building and SAFARI.
iv. The Project also had initiated a Ksh.60M renovation and extension of the Agriculture Laboratory Building (ALB).

b) Message from Ministry of Education –Mr. Dan Mesis

Noted:

i. He commented JICA for its support and they were committed in supporting the Project's second phase.
ii. That he reminded JKUAT that they were the leading University in Research and Innovation in the region and the University should endeavor to take its right place.
iii. That the Government of Kenya was ready to fund research but it is the Universities to identify the specific key areas of research where gaps exist that need funding.

c) *Message from JICA Kenya Office –Mr. Katsutoshi Komoro, Chief Representative, JICA Kenya Office*

Noted:

i. That he appreciated the strong partnership and collaboration among the Project Experts, JKUAT, Ministry of Education, NACOSTI and Japanese supporting universities.
ii. That JICA Kenya Office appreciates the continuous leadership and commitment of the Vice Chancellor and the Chief Advisor to further deepen the partnership between JKUAT and Japan.
iii. That he was delighted to note that PAUSTI had admitted 563 students from 43 African countries. They were expecting more number of students being admitted and graduating from PAUSTI as it is one of the greatest achievements made in collaboration with AFRICA-*ai*-JAPAN Project.
iv. He reminded members that the role of JCC meeting was to review overall progress, monitor and evaluate the Project and exchange opinions on major issues that arose during implementation of the Project.
v. That AFRICA-ai-JAPAN Project aims to achieve the Project purpose of producing students who have skills and knowledge enough to create and manufacture STI through the Project three outputs.
vi. That he expected that the outcomes from 1st phase of the Project will be incorporated in the phase two project.
vii. That the second phase of the Project aims to establish educational and research institutions of STI to develop human resources in the area of STI in AFRICA and respond to practical needs in the society through collaboration with society, industry and higher education institutions in Africa, outside Africa and Japan.

MIN. 05/04: CONFIRMATION OF THE MINUTES OF THE 4TH JCC MEETING

Confirmed: minutes of the 4th JCC meeting held on 22nd November, 2019 which were proposed by Dr. Ndiritu and seconded by Prof. H. Koaze as a true recordings of the meeting.

MIN. 05/05: KEY INPUTS BY JICA (JUN 2014- NOV 2019)

Noted:

i. That input one; six long term experts were dispatched to the Project office (Prof. Tsunoda, Prof. Prof. Shiomi, Mr. Tanaka, Ms. Oda, Prof. Koaze and Dr. Aoki). Thirty five short term experts were dispatched.
ii. That input two; eight long term trainings for PhD and 28 short term trainings were achieved.
iii. That input three; provision of equipment for a total of Ksh.156,785,053 was spent, provision of research funds of Kshs.83,268,702 was dispursed and seed research funds for PAUSTI totaling Kshs.19,742,900.

MIN.05/06: SUMMARY OF OUTPUTS BY JKUAT/PAUSTI (JUN 2014-NOV 2019)

Noted:

i. That research environment had been improved through the purchase of equipment, completion of renovation of IPIC Building, SAFARI and ALB.
ii. That 8 researchers were trained for PhD (5 in engineering, 3 in Agriculture and 1 in Science; 2 engineering from E-JUST)
iii. That 25 technicians had been trained for operation and maintenance of machines and equipment, 50 technologists trained by short term experts since 2017
iv. That CeSEM was established and became operational from May, 2018
v. That mid-term plan and plan of action on innovation was formulated
vi. That over 100 reviewed scientific journals were published
vii. That 30 young researchers of JKUAT/PAUSTI were trained on the job, 24 TAs and TFs trained in 39 research projects

viii. That 9 incubations seminars and 1 workshop organized for industrial linkage in 2018; 5 seminars and industry visits planned for 2019/2020.

MIN. 05/07: KEY AFRICA INNOVATIONS (ai), INDUSTRY LINKAGES AND DESSEMINATION

Noted:

i. That samples of achieved Africa innovations were as follows:
   - Development of a sustainable fruit processing machine for fruit addition
   - Development of grain dispensing and mixing unit and development of
   - Development of a chicken coop for small scale application
   - Water Saving Techniques under capillary wick system
   - New papaya bred VAR
   - A Manual liquid based cytology in screening for pre-cancerous lesion and cervical cancer
   - Diagnostic Kit for detecting Maize Chlorotic Mottle virus and Sugarcane Mosaic Virus and method thereof
   - Maize farming information repository project
   - Improving job visibility and motivation for career opportunities using mobile and web application.
   - Profiling of Motor Block Press, Irrigation Manager, 3-in-1 Chaff Mill and Mercury Retort

ii. That the companies that were in collaborations with University through sub tasforces were as follows:
   - iPIC (KETRACO, KenGen, Mobious and Top Motors)
   - iCB (REAL IPM and Wago Co. Ltd)
   - iCMoB (Africa Biosystems and Ecodudu Company)
   - iCCATS (SERIANU, KAPS Ltd. IBM, CISCO, NSE and ThinkBoard)

MIN.05/08: UPDATE FROM PAUSTI

Noted:

i. That there has been 4 PAUISTI graduations with a total of 194 graduates, 55 students graduated from the 1st Cohort, 42 from the 2nd cohort, 46 from 3rd cohort and 51 from 4th cohort.
ii. That at total of 114 students, 44 PhD and 70 Masters will be graduating in November, 2019 during the 5th PAUISTI graduation.

MIN. 05/09: FINAL EVALUATION OF THE PROJECT

Noted:

i. That a final evaluation team organized by JICA headed by Dr. N. Umemiya conducted evaluation of the Project from 11th to 22nd November, 2019.
ii. The purpose of the evaluation team was to examine and evaluate the Projects outputs in the last five and half years.
iii. That out of the evaluation, they realized that most of the outlined outputs had been achieved.

MIN. 05/10 – WAY FORWARD SUGGESTED EVALUATION TEAM

Noted:

i. That the next phase of the Project was approved starting from June, 2020 to June, 2025
ii. That CeSEM had several issues and needed support to further develop the Center, the help includes funding, expertise and staffing.
iii. That publications from both PAUSTI and JKUAT be summarized. This will help promote the University ranking.
iv. That interdisciplinary research to be enhanced in phase two of the Project.

v. That PAUSTI graduates are JKUAT important assets and there was need to track them. This will help show case the good results of PAU all over Africa.
vi. That incubation of students' innovations will be considered in the next phase.

MIN. 05/11: COMMENTS BY JAPANESE SUPPORTING UNIVERSITIES CONSORTIUM
Noted: That the Chairman, Japanese Supporting Consortium, Prof. M. Kimura urged the University to come up with research and innovations that have tangible solutions to society. He requested the University to help in nurturing young researchers to ensure continuity of research.

MIN. 05/12 – Q&A, SUGGESTIONS AND RECOMMENDATIONS
Noted:
i. That PAUSTI programs be reviewed to cater for all JKUAT courses
ii. That to continue discussing the possibility of PAUSTI students visiting Japanese Labs
iii. That for succession purpose the University to employ teaching assistants and tutorial fellows
iv. That there was need to identify all the equipment in the university and where they are located for them to be utilized by researchers
v. That more promotions and marketing of innovations be done to attract investors

There being no other business the meeting ended at 12.50 p.m.

MINUTES APPROVED FOR CIRCULATION: ---------- **CHAIRMAN** ---------- 11/12/20 **DATE**

MINUTES CONFIRMED: ---------- **CHAIRMAN** ---------- **DATE**