AFRICAN UNION
INTERAFRICAN BUREAU
FOR ANIMAL RESOURCES

LiVe2Africa
Sustainable Development of Livestock for Livelihoods in Africa

EUROPEAN UNION



Report on the Validation Workshop of the proposed hybrid businessmodel and its governance structure for the regional Technology and Innovation Incubation hubs in Africa (A-TiChubs).

21st October – 23rd October 2019 Naivasha, Kenya.



AU-IBAR Validation of A-TiCHUBs at Lake Naivasha, Kenya 21st - 23rd October 20019

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Abbreviations

ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ATIAC	African Technology and Innovation Advisory Committee
A-TiChubs	Africa's Technology and Innovation Incubation hubs
ATWIG	African Tichub Working Group
AU-IBAR	InterAfrican Bureau for Animal Resources
B2B	Business to Business
CBO	Community Bases Organization
HELB	Higher Education Loans Board
ICT	Information and Communication Technology
IP	Intellectual Property
IPR	Intellectual Property Rights
IT	Information Technology
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
REC	Regional Economic Committee
TOR	Terms of Reference
TVET	Technical and Vocational Education and Training

1. Background

In December 2018, the African Union – InterAfrican Bureau for Animal Resources (AU-IBAR) facilitated a write shop to develop a business model for the establishment and operationalization of a regional Technology and Innovation Incubation hubs in Africa (A-TiChubs). The A-TiChubs are considered as assembly points for inventors, agribusiness entrepreneurs and technology entrepreneurs. These centres of excellence are to provide creative spaces, infrastructural services, mentorship, intellectual property management, access to financial resources and networking opportunities for young innovators.

The write shop yielded a hybrid continental business model born out of four draft business models developed for the A-TiChub.

The 21st to 23rd October 2019 Naivasha workshop for which this report is written was convened expressly to validate the said hybrid business model for the A-TiChubs.

2. Objectives and expected outputs of the workshop

2.1 Objectives

1. To validate the hybrid business model for the regional Technology and Innovation Incubation hubs in Africa (A-TiChubs)
2. To identify the best bet host institutions for the A-TiChubs
3. To establish strategic guidelines for the governance structure and sustainability of the A-TiChubs (e.g. avenues for resource mobilization and private public partnership integration)

2.2 Expected Outputs

1. A Validated hybrid business model for the A-TiChubs
2. Regional Host institutions identified
3. Strategic guidelines for governance and sustainability of the A-TiChubs established

3. Introduction

Africa is increasingly becoming a key player in acquiring, generating and applying knowledge to development challenges. Yet more needs to be done to make technology and innovation play its part in the quest for transformation and diversification of the African economies.

In June 2014, the 23rd Ordinary Session of African Union Heads of State and Government Summit adopted a 10-year Science, Technology and Innovation Strategy for Africa (STISA2024). The strategy fosters social transformation and economic competitiveness, through human capital development, innovation, value addition, industrialization and entrepreneurship. It emphasizes the need to focus on science, technology and innovation as tools of change. The strategy's transformation agenda further re-affirms the impact envisioned through the Livestock development strategy for Africa (LiDeSA) and Agenda 2063.

All these strategic documents emphasize the need for Africa to move towards a modernized and productive agricultural sector through the use of science, technology, innovation and indigenous knowledge. The documents seek to put into place structures that will make the agricultural sector attractive to the youth and productive to all of Africa's populace.

However, Africa is yet to take up technology and reap the benefits. In many countries, investments in new technologies have been largely neglected and there is an evident underinvestment in technology in Africa that represents serious market failures and lack of political will by national governments. The lack of investments in research and extension services to improve access to information of key stakeholders has also contributed significantly to poor/low uptake of technology in Africa. The digital divide widens between the developed continents and the developing.

As part of providing leadership and coordination in the sustainable development of the continent's Animal Resources, AU-IBAR through the "Sustainable Development of Livestock for Livelihoods in Africa - Live2Africa". Live2Africa programme pioneers a coherent continental programme approach to build systemic capacity in seven livestock components, that include: Investment in Value Chains, Animal Health; Animal Production, Productivity and Ecosystem Management; Resilience Building; Technology adoption in the Value Chains to inputs, services and markets; and strengthening institutional capacities.

One of the key project's focus areas is to enhance innovation development, generation and utilization of technologies, capacities and entrepreneurship skills of livestock value chain actors. Thus, the project seeks to establish Regional Technology and innovation incubation hubs in Africa (A-TiChubs). The impetus of the A-TiChubs creation is to provide creative spaces, infrastructural services, mentorship, intellectual property management, access to financial resources and networking opportunities for technology innovators, technology accelerators, agribusiness entrepreneurs, and technology entrepreneurs. The vision is that the A-Tichubs will be the centerpiece of revolutionizing technology, innovation, skills and promoting knowledge-based economies in the African livestock sector.

To achieve this objective, in December 2018 , AU-IBAR facilitated a write shop to develop a business model for the establishment and operationalization of regional Technology and Innovation Incubation hubs in Africa (A-TiChubs). The A-TiChubs were considered as assembly points for inventors, agribusiness entrepreneurs, and technology entrepreneurs. These centres of excellence were to provide creative spaces, infrastructural services, mentorship, intellectual property management, access to financial resources and networking opportunities for young innovators.

The write shop yielded a hybrid continental business model born out of four draft business models developed for the A-TiChub.

The 21st to 23rd October 2019 Naivasha workshop for which this report is written was convened expressly to validate the said hybrid business model for the regional Technology and Innovation Incubation hubs in Africa (A-TiChubs). Other workshop's objective included: 1. To identify the best bet host institutions for the A-TiChubs and 2. To establish strategic guidelines for the governance structure and sustainability of the A-TiChubs (e.g avenues for resource mobilization and private public partnership integration)

4. Workshop methodology

The workshop was conducted in eight sessions as indicated below:

- Session 1: Introduction to the validation workshop
- Session 2: Introductory Presentation on Live2Africa project and the technology and innovation result areas
- Session 3: Scene setting presentations Presentation of the Business model for the A-TiChubs
- Session 4: Group work Business model for the A-TiChubs
- Session 5: Group work; Guiding principles on functionality and administration of the A-TiChubs and criteria of identification of innovative start-ups
- Session 6: Group work: Step-wise strategic options to guide commercialization and skill transfer
- Session 7: Development of stepwise Action Plan to guide the sustainability of A-TicHubs
- Session 8: Wrap up and closure

5. Opening session

The opening session was graced by Professor Ahmed Al-Sawalhy, Director AU-IBAR, Dr. Donald Kugonza representing ASARECA and Dr Cleopas Onkore representing the Government of Kenya. Professor Ahmed Al-Sawalhy in his opening remarks welcomed all the delegates to Kenya. He also extended his sincere appreciation to the Government of Kenya for allowing the Workshop to be hosted in Kenya and for facilitating the issuance of the necessary visa's to the participants. He reiterated that the workshop was organized by AU-IBAR with the support of the European Union who have funded the AU-IBAR within the framework of the Sustainable Development of Livestock in Africa, Live2Africa. The then gave a brief background on Live2Africa, which is a five year project whose aim is to build capacity in seven thematic areas that include Investment in Livestock Value Chains, Animal Health; Animal Production, Productivity and Ecosystem Management; Resilience Building; Technology adoption in the Value Chains to inputs, services and markets; and strengthening institutional capacities. He also mentioned that the impact of this project would feed into the Livestock development strategy for Africa (LiDeSA) which is aligned to the Agenda 2063 and the sustainable development goals. He emphasized the importance of Africa conserving and preserving her indigenous livestock because these hold the promise of alleviating poverty and contributing directly and indirectly to Africa's economic development.

Dr Donald Kugonza who spoke on behalf of ASARECA expressed his sincere appreciation to AU-IBAR for the invitation to participate in the Workshop. He communicated the warm wishes and greetings that he had brought with him from the people of Uganda. He then gave a brief background on ASARECA and the role it plays in the development of agriculture in Eastern Africa. He mentioned that the workshop was timely because technology had become an important component of farming and agriculture in general and Africa cannot afford not to use it. He mentioned that ASARECA is also involved in the process of reviewing technologies that can be adopted and upscaled in East Africa and Africa in general.

Dr Cleopas Onkore from the Ministry of Agriculture, livestock and fisheries welcomed the participants to Kenya on behalf of the Ministry of Agriculture, livestock and fisheries. He thanked AU-IBAR for chosing Kenya as the destination for the workshop. He reiterated that Africa needs to conserve their indigenous livestock for their food security and economic growth. He mentioned that Kenya had recently conducted a census of her people and for the very first time had included a number of questions pertaining to livestock.

He mentioned that the data that will be collected from this census will go a long way to assist Kenya in the management and conservation of her indigenous resources. He reiterated that accurate data is necessary for the proper management and conservation of livestock and called on other African countries to follow suit.

6. The A-TiChubs: A description

6.1 The Hybrid nature of the Hub

The Hub will adopt a hybrid nature functioning as both an incubator and an accelerator. It will be both a for profit as well as a not for profit organization. The Hub and be run on virtual, semi-virtual and resident basis as shown in Figure 1. The A-TiChub hybrid model will integrate the technology, innovation, incubation, commercialization and entrepreneurship aspects of the livestock sector

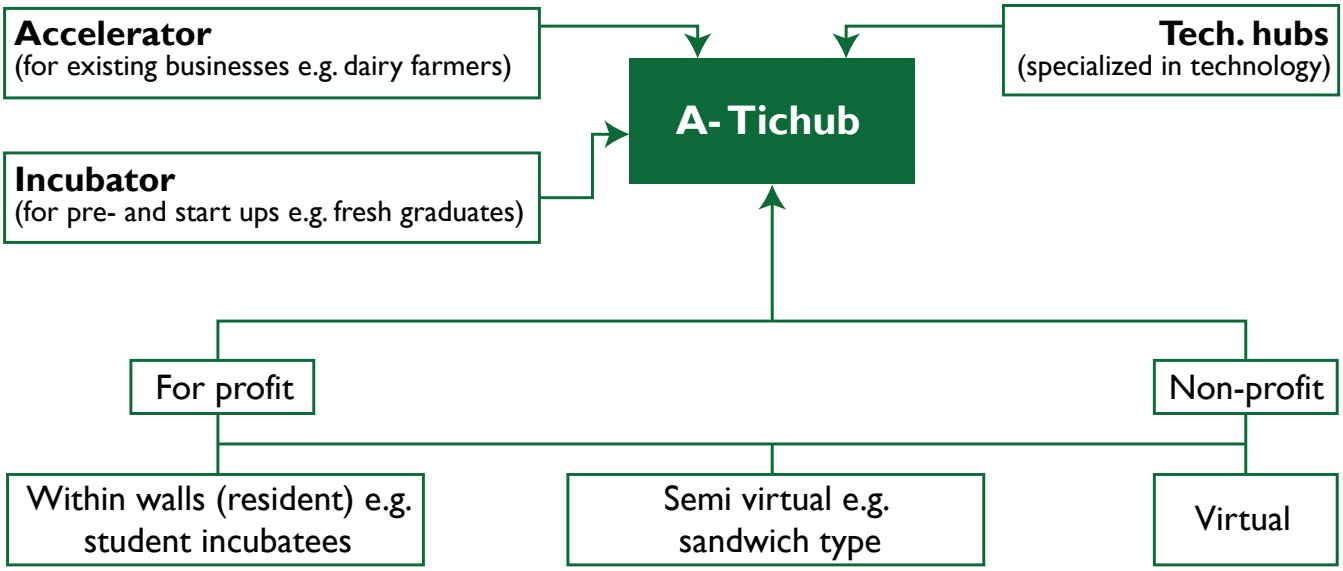


Figure 1: *The nature of the TiCHub*

6.2 The structure of the A-TiChubs

The hub will consist of two wings namely the Accelerator Wing and the Incubator Wing. The functions and roles of the two wings are shown in Figure 2.

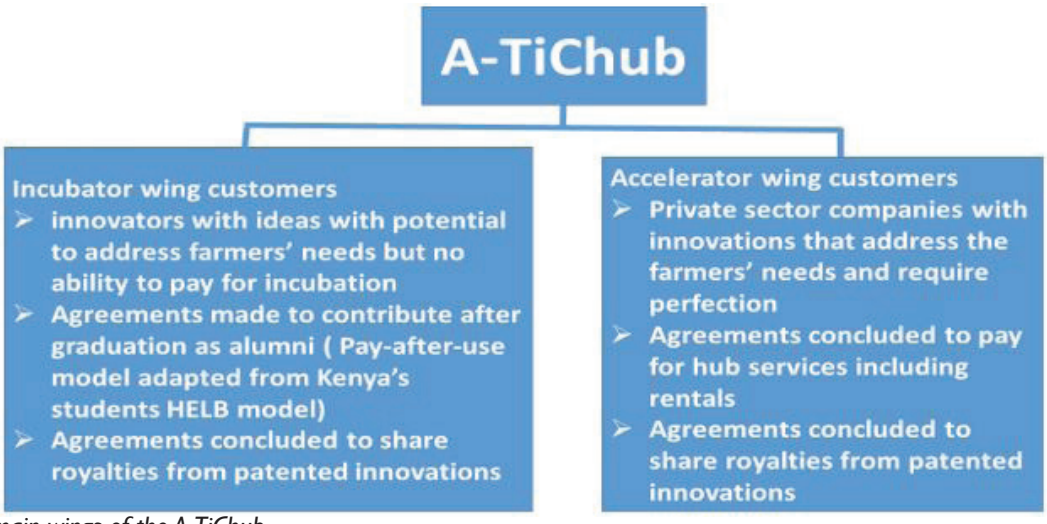


Figure 2: *The main wings of the A-TiChub*

6.3 The Governance structure of the Hub

The hub will be governed as depicted in Figure 4 and Figure 5. As indicated in Figure 4, two governing bodies will be formed to govern the A-TiChubs namely, The African Technology and Innovations Advisory Committee (ATIIAC) and the African TiChubs Working Group (ATWIG).

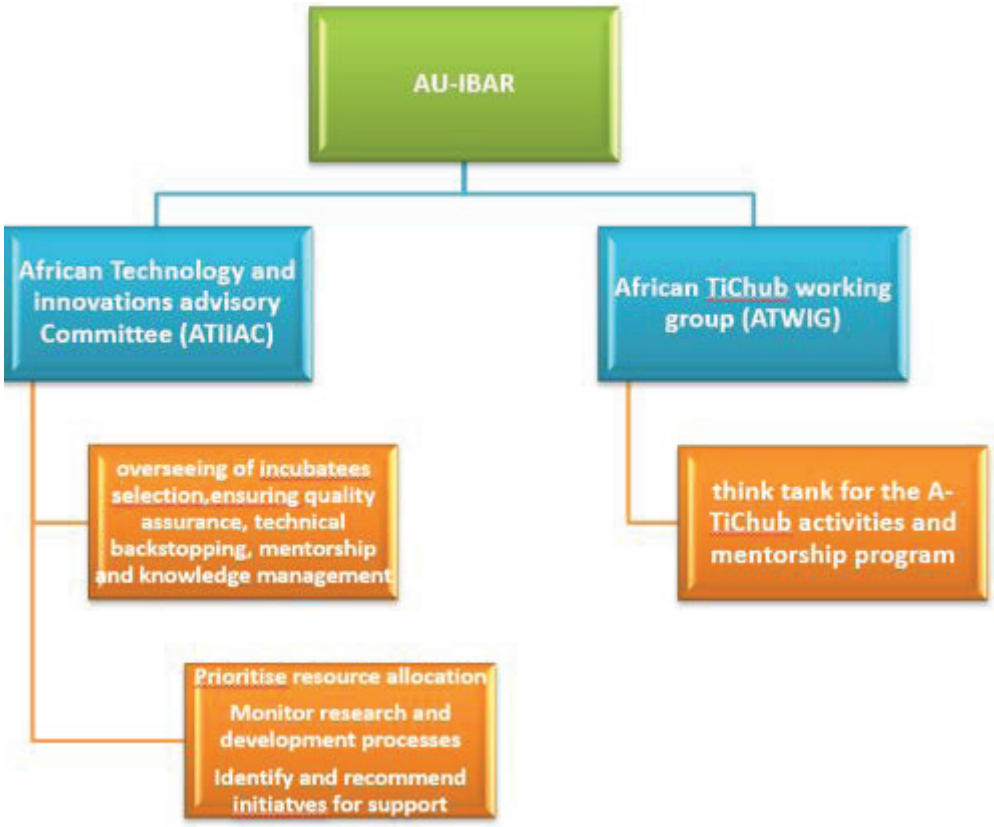


Figure 3: *The general governance structure*

6.3.1 The complete governance structure

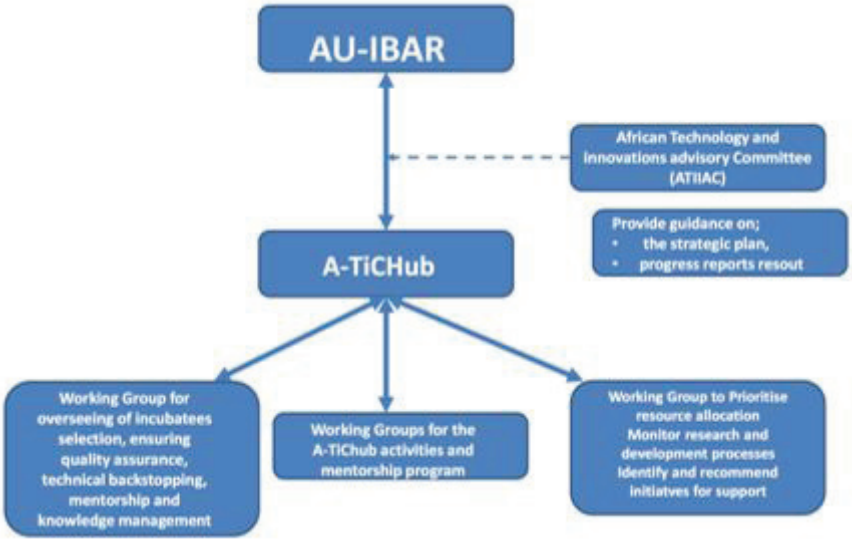
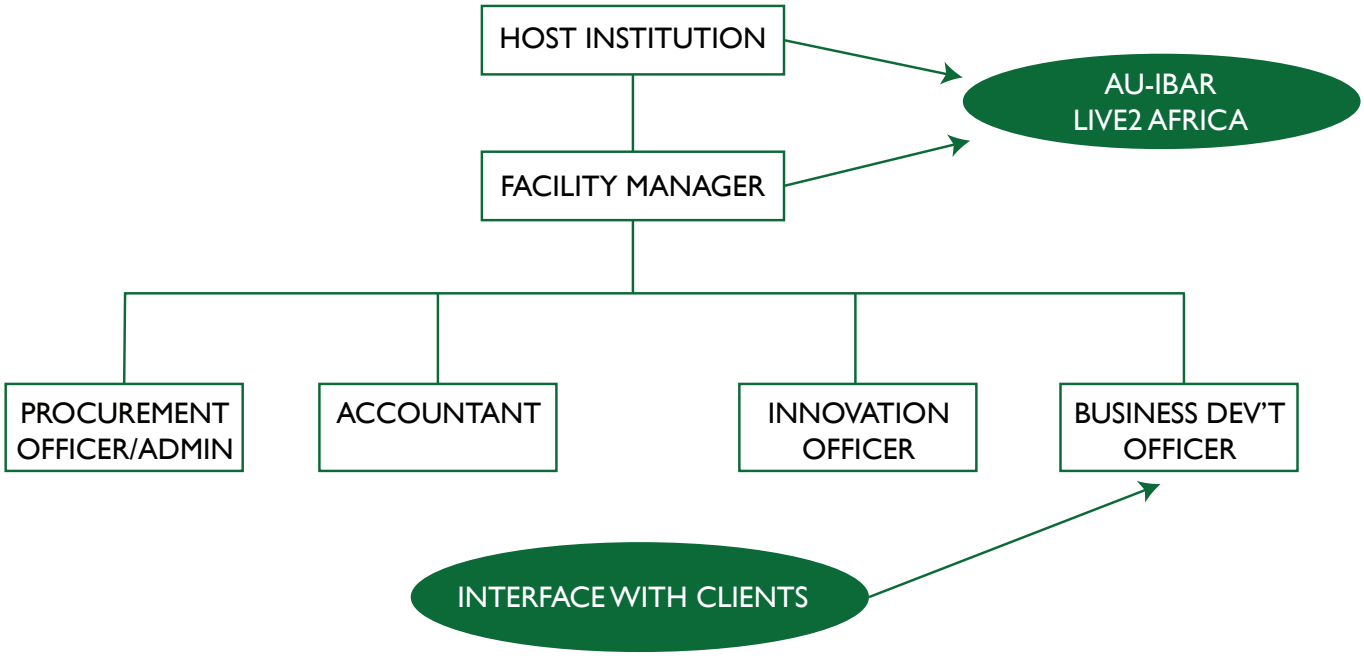


Figure 4: *The complete governance structure*

6.3.2 Governance structure inside the A-TiChubs and its relationship with the host institution



6.3.3 The Working Group

The roles of the Working Group

The primary roles of the Working Group were identified as follows:

- Ensuring quality assurance,
- Providing technical backstopping
- Provide knowledge management

The membership of the Working Group

The members of the Working group were identified as the following:

- Existing incubators
- Existing mentorship and incubator networks
- Quality assurance Regulators
- National Research and Development institutes and Universities (higher education)

The functions of the Working Group

The functions of the Working Group were identified as follows:

1. Prioritization of resources
2. Resource mobilization and allocation
3. Monitor research and development processes
4. Identify and recommend initiatves for support
    - Members states (NC and Directors)

Sources of funding for the Working Group

- Privatesector
- National Research and Development
- RECs and S-RFP
- Development partners and NGOs
- Financiers/Investors

6.3.4 The African TiChubs Working Group (ATWIG)

The primary role of the African TiChubs (ATWIG) Working Group is that of operating as the Think-Tank. The ATWIG will have the following roles and responsibilities:

- Provide room where Member States, partners, stakeholders, media can engage in a positive manner
- Formulate policies to be implemented by the A-TiChubs
- Mobilise relevant expertise
- Provide relevant evidence for the A-TiChubs operations
- Push for innovative changes that would be needed to keep the A-Tichubs relevant
- Providing a platform to introduce new and innovative ideas and modes of action
- Provide a platform where Member States can contribute new ideas relevant to the function of the A-TiChubs
- Provide an avenue where stakeholders can be increased and engaged
- Provide evidence-based assessment of the A-TiChubs
- Build networks and communities through with they can spread the A-TiChubs innovations and technologies
- Have the ability to catalyse actionable agendas throughout the Member States
- Engage with the Member States in a dynamic manner in order to formulate policies that are relevant and actionable

6.3.5 The African Technology and Innovations Advisory Committee (ATIIAC)

6.3.5.1 The constitution of the African Technology and Innovations Advisory Committee (ATIIAC)

The African Technology and Innovations Advisory Committee (ATIIAC) will be constituted by:

- REC representative
- Farmers' organizations representative
- Sub-regional focal point-AnGR
- National Research and Development Organizations – Universities
- International Research/Training organization
- Intellectual property organization
- Consumers organizations
- Host institution (ex-officio)
- AOSTI group

6.3.5.2 The function of the African Technology and Innovations Advisory Committee (ATIIAC)

The main function of the African Technology and Innovations Advisory Committee (ATIIAC) is oversight. ATIIAC meet Bi-annually and will play the following roles and responsibilities:

- Selecting incubates who will join the A-TiChubs,
- overseeing incubatees,
- upholding quality standards,
- providing technical backstopping
- providing mentorship to the A-TiChubs
- dealing with knowledge management
- allocating resources to the A-Tichubs
- monitoring research and development of technology and innovations
- identification of initiatives that require support
- identification of initiatives that can be admitted into the A-TiChubs

- Receive progress reports
- Approve annual work plans
- Approve annual budget
- Review SOPs
- Overseeing governance and administrative (management structure, budget lines, framework, MoUs)

6.4 The key characteristics of a host institution

The key characteristics of the host institutions were identified as follows:
They must have:

- Proven record of agricultural research and dissemination
- Demonstrated Agripreneurship culture
- Availability of science and technology expertise
- Experience of hosting and managing incubators/hub/accelerators
- Good and operational ecosystem
- Flexibility and adaptability to hosting partnerships to operate independently
- International or regional outlook
- Experience in livestock related innovations
- Flexible institutional legal framework
- Must have relevant adequate infrastructure, e.g. functional innovation office, physical facilities, farms infrastructure
- Financial sustainability
- Competent and motivated management
- Must have a functional registration organ for IP and ABS, with proof of registered IPs and patents
- Must have a legal status
- Must have proven functional collaborations

It was agreed that these characteristics and any other would be used to develop a call for expression of interests from interested parties.

6.5 The Key Stakeholders of A-TiChubs

6.5.1 Key Primary Stakeholders

It was agreed that at the outset the stakeholder needs to be clearly defined. The definition should be general, where a stakeholder is defined and specific, where a primary and secondary stakeholder is defined.

- Inventors
- innovators
- Ag-entrepreneurs;
- Tech developers;
- Interns
- Early stage Start Ups
- Agricultural Extension Service Providers
- University students with ideas
- Institutions of Higher Learning
- Industry R&D Wing

6.5.2 Key Secondary Stakeholders

Selected key secondary stakeholders were identified as the following:

- Learning and research Institutions
- Farmers
- Government agencies and regulatory authorities (IP organisations, Standard bodies)
- International Institutions and development partners
- Venture Capital/Funds, Angel Investors
- Financial institutions
- Business Development Support Organisations
- Media actors
- Farmers cooperatives and farmer associations
- Industry players (Processors/ Manufacturers/Markets/ inputs suppliers
- Private sector (service provider, Inputs services providers/ Veterinary services)
- Telecommunication companies
- Traders in the sector
- ICT industry
- Suppliers or providers of service or materials
- Financial Institutions
- Agricultural Insurance companies

6.5.3 Selected Key Tertiary Stakeholders

Selected key tertiary stakeholders were identified as the following:

- Third sector alliances (NGOs, Co-operatives, CBOs etc.)
- Regulators Development Agencies
- Intellectual Property Rights Organizations
- Standards Authorities
- Consumer organizations
- Policy makers (Government/ Local authorities)
- Government and related organizations e.g. Parastatals

6.6 The A-TiChubs Partners

6.6.1 Selected Key Partners

Selected key partners were identified as the following:

- Incubators
- Accelerators
- Hubs- National and regional
- Farmers (cooperatives, associations)
- Learning institutions (Secondary schools, TVETS etc)
- Universities and Research Institutions;
- Government and Government related agencies e.g. line ministries, State Corporations (Parastatals)
- Regulatory authorities (IP organisations, Standard bodies);
- Third sector alliances (NGOs, Co-operatives, CBOs etc.)
- International and national
- Professional bodies
- Global partners eg; WB, EU

- Continental organizations eg; AU-IBAR, AAIN, FARA, NEPAD, where theri
- Regional organizations eg; RECs, SROs,
- Sub-regional organizations eg; EAC,
- National coordinators
- Consumer Organizations
- Investors
- Agricultural Extension Services
- Venture capitalists
- Enterprise Investment Finance

6.6.2 Criteria for selection of key Partners

It was proposed that the partner:

- Must agree to right a partnership agreement
- Must agree to establish shared expectations in the partnership
- Should be able to fill the gap between the hubs' value proposition and the resources
- The partner must benefit from the association while ensuring that the Hub also benefits from it. It therefore must strictly be a win-win situation with visible and tangible gains for both partners.

6.7 The A-TiChubs Clientele

6.7.1 Criteria for identification and selection of A-TiChubs Clientele

It was deemed necessary to develop a criteria for the identification and selection of the A-TiChubs clientele. The criteria was listed as the following:

The technology or the innovation:

- Should have the ability or degree for the segment to be analysed in detail. The Client's needs need to be in the area of technology and or innovation
- Should have clarity of the tasks the customers is trying to accomplish. The Hub needs to be to have the technology or the capacity to solve the problem
- Should have clarity about the pains customers have including the challenges and risks they face (Relevance for evaluation and ranking)
- Should have clarity of the potential gains to accrue to the client. There has to be a tangible benefit and impact of the technology and innovation to the client
- May have a Gender component: Technology and innovations involving or having a high impact on women will be specifically identified
- May have a youth component :Technology and innovations involving or having a high impact on the youth will be specifically identified
- May be an early stage Start Ups in the animal value chains
- May involve University students
- May be Agri-innovators (AgroTech developers)
- May be an Incubator
- May be an accelerators,
- May be a virtual entrepreneurs;
- May be agricultural Extension Service Providers
- May be a technology or an innovation with an impact regionally or internationally
- May be a technology or an innovation that can be easily scaled up
- The technology or innovation could be a virtual entreprenere

6.7.2 Criteria for selection for selecting customer relations

The key attributes of the customer relations were identified as follows:

- Practicability of the relations
- Sustainability of the relations
- Cost element of the relations

6.7.3 The different ways in which a client and A-TiChubs could relate

The following were identified as ways in which a client and the A-TiChubs could relate::

- Contractual party agreement;
- Constant and interactive communication
- Regular updates on new products and services;
- Continuous mentorship
- Constantly updating the benefits and incentives;
- Shareholding with the client e.g. 51% shareholding with the client.
- Participatory holistic business relationship
- Quality of management systems
- Quality of mentorship systems

6.7.4 Key customers and clients for the A-Tichubs

The following were identified as the key customer and clients for the A-TiChubs:

- Inventors
- Innovators
- Agri-preneurs
- Ag-entrepreneurs;
- Tech developers;
- Interns
- Early stage Start Ups
- Agricultural Extension Service Providers
- University students with ideas
- HEIs
- Industry R&D Wing
- Incubators
- Agricultural Extension Service Providers
- Industry R&D Wing

It was noted that the list was not exhaustive. It was also noted that there was need for the development of a glossary of terms

6.7.5 The A-Tichubs customer and client's needs

It was recognized that each client would approach the A-TiChub for a specific need. Table 1 shows identified needs for a number of client categories.

Table 1: *The specific needs of the A-TiChubs clients*

Category of clients	Needs
Inventors	Support for the protection of their invention – IPR
Innovators	Environment to nurture their innovation for value proposition
Incubators	Strengthen their capacities in incubation
Agricultural Extension Services	Strengthen their capacities in technology and innovation transfer
Industry R&D	Strengthen their capacities in business innovation management and acceleration/BDS/Financial and System Engineering

6.8 The key activities for the A-Tichubs

6.8.1 The criteria for selecting key activities for the A-TiChubs

The criteria for selecting the key activities for the A-TiChubs were identified as follows:

- Degree to which the activity contributes to the value proposition
- Degree to which the activity is compatible with the channels of the hub
- Degree to which they contribute to the maintenance of customer relations
- Degree to which they contribute to revenue streams

6.8.2 The key activities to be conducted by the A-TiChubs staff

The following activities were identified as the key activities that will be conducted by the management and staff of the A-TiChubs on their clientele:

- Provide mentorship services;
- Deal with IPR acquisition;
- Engage in Networking activities (linking with strategic partners and B2B events);
- Provide tailored and appropriate Trainings;
- Provide Branding and marketing support to the incubates;
- Build a database for technologies and innovations;
- Organise and participate in Expo' and events;
- Organise open days, pitching events, innovation summits;
- Publish the A-TiChubs activities in relevant publications e.g. newsletters;
- Run a reward and a recognition system to encourage good practice;
- Match and link incubatees with relevant mentors;

6.8.3 The key activities for the A-TiChubs clientele when admitted into the A-TiChub

The following activities were identified as the action points that the clientele would be involved in when they are admitted into the A-TiChub:

- Establish incubators
- Promotion of technology and innovations in livestock
- Capacity building on business development
- Interactive networking
- Facilitating acquisition of IPR
- Technical support to link with specialized services
- Mapping of techs and innovations
- Develop resource mobilization strategies/frameworks
- Engineering of systems and financial models
- Performance appraisal (adaptive risk management)

6.9 Criteria for selection of value proposition

The value proposition for the Hub is multifaceted. A three point criteria for value proposition i.e. relevancy, quantified value, uniqueness was proposed.

It was proposed that the innovation or technology be able do the following:

- Offer animal resource value chain nurturing and development
- Bridge technology and innovation gaps in the Africa Livestock for development
- Offer livestock for wealth and job creation
- Support the livestock sector through adoption of sustainable technology
- Solve customers' problems or improves their situation (relevancy)?
- Provide enabling environment for Business development Services for livestock sector
- Connecting Technology innovators to African Livestock Sector
- Bringing livestock technology to life
- Promoting innovation and technology development in the livestock sector in Africa
- Support to livestock value chain development
- Fostering the development and deployment of innovation and technology in Africa Livestock Sector
- Promoting innovation and technology for the development of the livestock sector in Africa
- Promoting livestock business model that protects, nurtures and encourages capacity building throughout the livestock value chain
- Enhanced livestock technology and innovation adoption and incubation in Africa
- Uplifting technology and innovation in livestock production and productivity in Africa
- Deliver specific benefits to the client so that their situation is improved (quantified value)?
- Informs the ideal customer why they should come to the hub and not go to the competition (unique differentiation)?
- Support the acquisition of IPR?
- Offer subsidized space from development to commercialisation of the technologies
- Provide targeted practical trainings
- Have a networking structure where incubates will be linked with fellow innovators, clients and industry players) through networking forums and boot camps?
- Have linkages to industry players, customers and funders?

6.10 Criteria for selection of key activities for A-TiChubs

It was proposed that criteria for selecting key activities of the hub consider the following:
The degree to

- Which the activity contributes to the value proposition
- Which the activity is compatible with the channels of the hub
- Which they contribute to the maintenance of customer relations
- Which they contribute to revenue streams

It was proposed that the key activities for the Hub be the following:

- Mentorship services
- IPR acquisition,
- Networking (linking with strategic partners and B2B events)

- Tailored (appropriate) Trainings; for example those that could be offered to Extension Agents
- Branding and marketing support;
- Building a database for technologies
- Organizing and participating in Expo' and similar events
- Organizing open days, pitching events, innovation summits)
- Publications (e.g. newsletters)
- Run a reward and a recognition system to encourage good practice
- Match and link incubatees with relevant mentors

6.11 Criteria for selection for selecting Channels of communication

It was recognized that there was a need for the A-Tichubs to communicate with the different stakeholders. The criteria for choosing the channel for the communication was listed as the following:

- The number of customer segments or the size of target market.
- Investment required by the distribution channel
- Amount of control required over the distribution channel

Taking into consideration this criteria, the following were identified as the different communication channels that could be used by the A-TiChubs:

- Print media;
- Social media;
- Radios, TV;
- Websites;
- Workshops
- Face to face meetings
- Trade fairs
- Referrals from Universities and tertiary institutions
- Word of Mouth
- Mailing list
- Personal communication with incubates Personal interaction with investors, mentors, trainers and other stakeholders

6.12 Maintenance of customer relations

The following customer relations will be cultivated and maintained:

- Contractual party agreement;
- Constant and interactive communication
- Regular updates on new products and services;
- Continuous mentorship
- Constantly updating the benefits and incentives;
- Shareholding with the client e.g 51% shareholding with the client.
- Participatory holistic business relationship
- Quality of management systems
- Quality of mentorship systems

7.0 Financing the A-TiChubs

7.1 Criteria for selecting revenue streams

The criteria for selecting revenue streams were identified as follows:

- Ability for customers to contribute to it
- Sustainability of the stream
- Percentage contribution to the total streams

7.2 Revenue streams envisaged for the A-TiChubs

The following revenue streams are envisaged for the A-TiChubs:

- Subscription from potential clients (potential shareholders);
- Royalties from patented technologies;
- Equity holding that come up from the new incubators;
- Consultancies (for IP provision);
- Cooperate and institutional partnerships;
- Development partners (looking at it from the social impact side establishment costs);
- Rental costs when the incubation is not operating;
- Facility services e.g. guest centres;
- Training fees,
- Revenue sharing
- Grants/sponsorship
- Loans interest/dividend
- Events e.g. -paid Mentorships
- Organising promotion Business exhibition fairs

7.3 Criteria for developing the cost structure for the A-TiChubs

The key criteria for selecting cost elements is the ability of the cost to fit within the A-TiChubs cost structure

Costs to be absorbed by the A-TiChubs were divided into fixed costs and variable costs.
Fixed costs include the following:

- Buildings
- Furniture and fittings
- Rent

Variable costs include the following:

- Rental space;
- Personnel costs;
- Materials and production costs;
- Communication costs;
- Capacity related costs;
- Technical experts' costs;

- Logistics costs;
- Research costs;
- Utilities
- Marketing and Public Relations costs
- Travels cost
- Consultancy
- Mentor/Training fees

7.2 Criteria for selecting key resources to contribute financial resources

The resources selected for the A-TiChubs need to have the ability to contribute directly or indirectly to the following:

- The cost structure
- The revenue streams
- Have the ability to contribute to sustainability

The key resources identified for the A-TiChubs include the following:

- Office space
- Technical experts
- Personnel
- Training Resources
- Resources for conducting research
- Database of partners
- Media
- Communication
- M&E systems
- IT resources
- Testing facilities
- Infrastructure
- Finance resources

7.3 Criteria for selecting revenue streams

The criteria for selecting revenue streams for the A-TiChubs were identified as follows:

- Ability for customers to contribute to it
- Sustainability of the stream
- Percentage contribution to the total streams

Potential sources of revenue for the A-TiChubs were identified as:

- Subscription from potential clients (potential shareholders);
- Royalties from patented technologies;
- Equity holding that come up from the new incubators;
- Consultancies (for IP provision);
- Cooperate and institutional partnerships;
- Development partners (looking at it from the social impact side establishment costs);
- Rental costs when the incubation is not operating;

- Facility services e.g. guest centres;
- Training fees,
- Revenue sharing
- Grants/sponsorship
- Loans interest/dividend
- Events e.g. -paid Mentorships
- Organising promotion Business exhibition fairs

8.0 The Ecosystem of the Hub

The A-TiChubs is envisioned to operate within a vibrant ecosystem as shown in Figure 3.

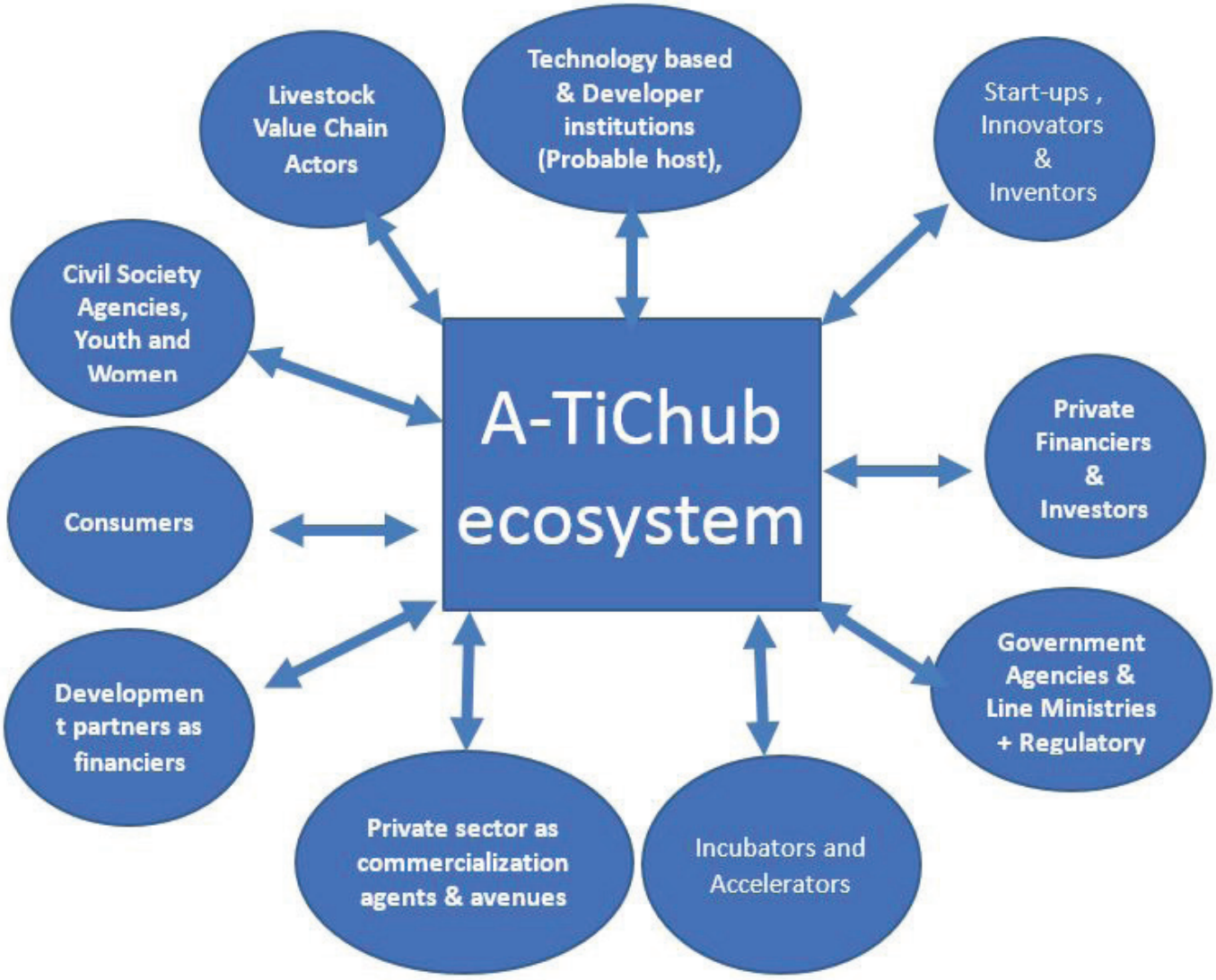


Figure 5: *The Ecosystem of the A-TiChubs*

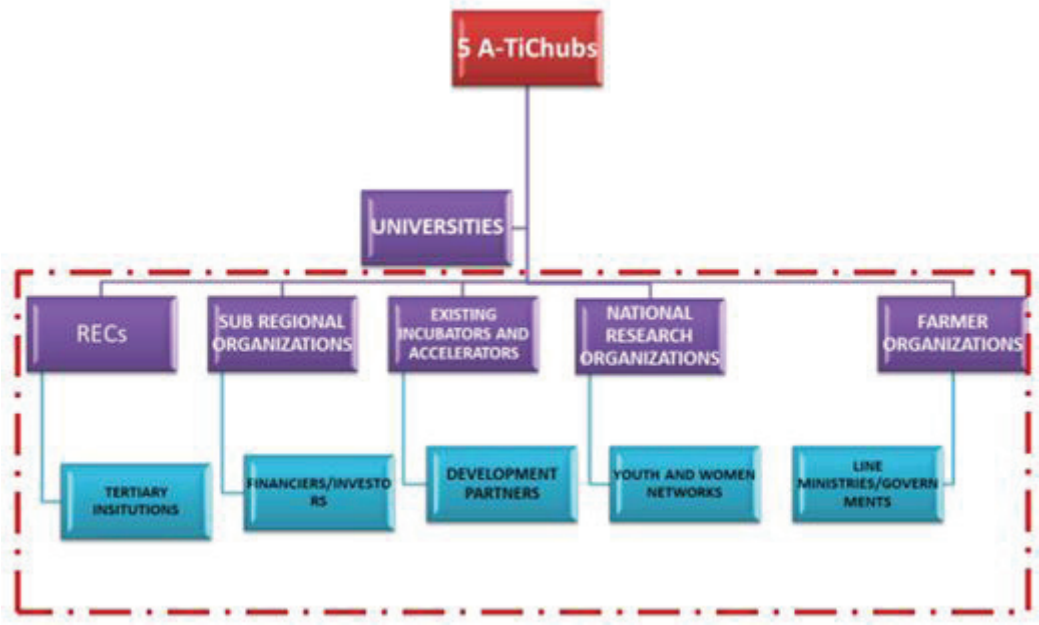


Figure 6: *The specific governance of the hub*

10.0 The step-wise strategic options to guide commercialization and skill transfer of novel technologies for the livestock sector

The outlined Technology Transfer Process (1. Disclosure 2. Evaluation 3. Protection 4. Marketing 5. Negotiation 6. Licence) is a collaborative process between the inventor and the hub, during which the identification, protection, and commercialization of intellectual property occurs

11.0 The Action Plan

An action plan with proposed timelines for the establishment of the A-TiChubs was proposed as shown in Table 2:

Table 2: *A proposed action plan for the establishment of the A-TiChubs*

Activity	Specific Action	Person responsible	Timeline
Distribute Award letters to ATIIAC members	AU-IBAR to issue appointment letters for each member of the ATTIAC Their TORs and responsibilities to be clearly spelt out in the letter	AU IBAR	Immediately
Draft a call for Potential host Universities to apply to host TiCHUBs	Draft the call for proposals 1. Southern – Prof Dzama 2. Eastern – Prof Kugonza 3. Western – Prof Amponsah 4. Central – Prof Kamga 5. Northern – Dr. Mberick Submission of the advertisement	AU IBAR /ATTIAC	November 2019 Call to close end of January 2020
Shortlist candidate host institutions in all 5 regions of Africa	To short list candidates using established criteria Develop mechanism where the shortlisted candidates make their bids	AU IBAR /ATTIAC	March 2020
Establish technical working groups	Develop TORs for the Technical Working Groups at the regional level	AU IBAR / ATTIAC	May 2020
Establishment and operationalisation of the 1 st A-TiCHubs	Facilitation the immediate establishment and operalization of the first TiChubs Ensure that developed timelines are implemented by the HUB	AU IBAR / ATTIAC	June 2020
1st ATTIAC meeting (concurrently with graduation)	Organize 1st ATTIAC meeting to review progress of the A-TiChub operationalization and challenges faced	AU IBAR / ATTIAC	August 2020
Recognition of the 1st graduates from the A-TiCHubs	ATTIAC to 1. Graduate the first incubator 2. Launch the second batch of incubators	AU IBAR / ATTIAC	August 2020
Launch of A-TiCHubs in all the other regions	Launch and recruitment of new graduates	AU IBAR	January 2021

The following recommendations were made:

1. AU-IBAR should utilize the available sub-delegation approach to enable eased operationalization of the selected host institutions
2. The A-TiChubs should set-up a revolving funds structure to ensure that the sustainability of the hubs is maintained. Funds paid into the hubs should remain within and be utilized as agreed upon
3. AU-IBAR should operationalize one TiChubs and with effective monitoring and evaluation ensure its success. Drawing on lessons learnt the other regional TiChubs should be implemented.
4. The selected incubates should have a clear interactions with their supervisors within the home institution to ensure a holistic involvement between the A-TiCHub mentors and the home institutions
5. Identification of other partners is paramount such as ACOSTI to promote inclusivity of all relevant stakeholders
6. AU-IBAR should facilitate exchanges and interactions between the different Tichubs in order to allow for rapid exchange and implementation of best practices

12.0 The Workplan

An workplan with proposed timelines for the establishment of the A-TiChubs was proposed as shown in Table 3

Table 3: *A proposed workplan for the establishment of the A-TiChubs*

Activity	Specific Action	Person responsible	Timeline
Appoint ATIIAC members to form the Continental Steering Committee	AU-IBAR to issue appointment letters for each member of Continental Steering Committee Their TORs and responsibilities to be clearly spelt out in the letter	AU IBAR	Immediately
Develop the ToRs for the TiCHUBs Put out a call: Potential host agencies to apply to host TiCHUBs	Continental Steering Committee 1. To develop TORs 2. Develop call 3. Disseminate call throughout their regions	AU IBAR /ATTIAC	November 2019 Call to close end of January 2020
Shortlist candidate host institutions in all five regions of Africa	Continental Steering Committee 1. To short list candidates using established criteria 2. Develop mechanism where the shortlisted candidates make their bids 3. Develop TORs for the DD framework 4. Conduct Due Diligence and Ground Validation 5. Develop TORs for the Technical Working Groups at the regional level 6. Establish Technical Working Groups at the regional level	AU IBAR /ATTIAC	March 2020
Pronouncement of the selected TiCHUBS	1. Continental Steering Committee to: 2. Announce selected innovations 3. Develop stepwise implementation plan for the innovations/incubators 4. Formally launch the first incubator/ innovation 5. Formally Regional launch working groups	AU IBAR /ATTIAC	March 2020
Establishment and operationalisation of the 1 st TiCHUB	Facilitation the immediate establishment and operalization of the first TiChubs Ensure that developed timelines are implemented by the HUB	AU IBAR /ATTIAC	APRIL 2020
Recognition of the 1st graduates from the Tichubs	ATTIAC to 1. Graduate the first incubator 2. Launch the second batch of incubators	AU IBAR /ATTIAC	OCT 2020
Launch of TiCHUBS in all the regions I	Launch Third batch of incubators	AU IBAR	OCT 2020



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