

**Enhancing Trade Through Regulatory Harmonisation and
Biopesticide Based Residue Mitigation in the SADC Region**

**Knowledge Management (KM) and Capacity Development (CD)
Strategy**

January 2023

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Abbreviations and Acronyms

APAARI	Asia-Pacific Association of Agricultural Research Institutions
CD	Capacity Development
CD for AIS	Capacity Development for Agricultural Innovation Systems
CODEX	Codex Alimentarius Commission
FAO	Food and Agriculture Organisation of the United Nations
ICGEB	International Centre for Genetic Engineering and Biotechnology
IPM	Integrated Pest Management
KM	Knowledge Management
MERL	Monitoring, evaluation, reporting and learning
MRL	Maximum Residue Limit
NGOs	Non-governmental Organisations
PAB	Project Advisory Board
PSC	Project Steering Committee
RAS	Rural Advisory Services
SADC	Southern Africa Development Community (SADC)
SSC	South-South Cooperation
STDF	Standards and Trade Development Facility
TAP	Tropical Agriculture Platform
WTO	World Trade Organisation

Introduction

The project on “*Enhancing Trade Through Regulatory Harmonisation and Biopesticide-Based Residue Mitigation in the Southern African Development Community (SADC) Region*” is funded by the Standards and Trade Development Facility (STDF) and supported by the Asia-Pacific Association of Agricultural Research Institutions (APAARI), as a knowledge partner. The objective of the project is to enable registration and promote the use of biopesticides, especially for late-season pests in key export crops, to reduce reliance on synthetic chemical pesticides, enhance compliance with maximum residue level (MRL) limits, and facilitate trade. The six project countries are Botswana, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe; along with Kenya as a supporting partner country.

The key issue that the project is addressing in the SADC region includes addressing the overuse, misuse, mishandling and mismanagement of pesticides, which contributes to residue violations in export markets. Exceeding the established MRLs is particularly common, especially for crops in which synthetic chemical pesticides are used to control late-season pests. Enhanced use of biopesticides¹ could significantly mitigate pesticide residues since most of these pest control products (with the exception of biochemical derivatives) are not subject to MRLs within importing countries. However, despite the advantages of biopesticides, their widespread adoption and use is affected by challenges related to their research, development, registration and commercialisation. Countries in the SADC region have varying (or non-existent) policies regarding the registration and application of biopesticides. Most have insufficiently established biopesticide regulatory frameworks; and therefore, rely largely on conventional pesticides.

The rationale behind the Knowledge Management (KM) and Capacity Development (CD) Strategy

Knowledge sharing, learning and South-South Cooperation (SSC), as well as the development and use of soft skills (functional capacities) to enable effective application of the technical skills built through the project, form the basis of this project’s Knowledge Management (KM) and Capacity Development (CD) Strategy. The well-developed biopesticide regulatory systems in South Africa, where the use of biopesticides is an integral part of its Integrated Pest Management (IPM) programmes, presents an ideal opportunity for the facilitation of knowledge sharing, capacity development, technical support, good practices, as well as harmonisation of regulations in other SADC countries.

An effective strategy can largely support the project’s substantive activities and contribute to a reduction in the reliance on conventional pesticides, hence promoting regional and international trade. As such, the project’s regional coordination to identify, prioritise and address specific residue trade barriers and develop related mitigation measures requires the need to mainstream effective KM and CD processes to increase the understanding and compliance with Codex MRLs in SADC countries, as a way to boost their agricultural producers’ ability to access important export markets.

¹ A generic term generally applied to a substance derived from nature, such as a microorganism or botanical or semiochemical, that may be formulated and applied in a manner similar to a conventional chemical pesticide and that is normally used for short-term pest control <http://www.fao.org/3/a-i8091e.pdf>

Methodology for the Strategy Development

This KM and CD Strategy was developed using a combination of approaches, as elaborated below.

The TAP Common Framework

Firstly, the learning approach emphasised by this project is based on the Common Framework for Agricultural Innovation Systems (CD for AIS), developed by the partners of the Tropical Agriculture Platform (TAP) and facilitated by the Food and Agriculture Organisation of the United Nations (FAO). The Asia-Pacific Association of Agricultural Research Institutions (APAARI), which contributed to the design of the Framework, integrated its key principles, concepts and processes into a similar project in Asia-Pacific (STDF/PG/634). It is based on the recognition that the overall capacity of project stakeholders requires a focus not only on the competencies needed to achieve technical results, but also on what it takes to build more effective and dynamic relationships among multiple actors who constitute part of the whole agricultural innovation system (AIS) – of which IPM is one of the components. In other words, a focus on technology and technical skills alone does not enable impact.

Knowledge Management (KM) Survey

Secondly, in January 2022, APAARI conducted a survey to seek inputs, ideas and comments of the project participants on the types of knowledge-sharing processes, tools, as well as capacities and mindsets that are needed to effectively deliver the project's objectives and sustain its outcomes. Specifically, the survey solicited feedback on the following areas: (i) KM and communication needs and opportunities; and (ii) capacity needs in non-technical functional areas. The survey responses and outcomes became a basis for the design of this KM Strategy. The respondents' suggestions were particularly integrated in the specific strategies, as well as indicative activities and concrete measures to be implemented, which are part of Annex 1.

Training of Trainers

Thirdly, in March 2022, APAARI conducted a Training of Trainers (ToT) on “Strengthening Agricultural Innovation Systems for Biopesticide Development and Regulation in Africa through Capacity Enhancement” to build capacity of selected project actors in order to integrate the AIS thinking in the project activities and beyond, and facilitate the blending of technical and functional capacity development to better support the project objectives and contribute to its sustainable outcomes. It specifically aimed to: (i) apply the AIS perspective to improve the understanding and importance of the blending of technical and functional capacities in biopesticide development in Africa; (ii) analyse and prioritise the functional capacity needs collected through the project KM/CD survey; (iii) analyse actors involved in biopesticide development in Africa; (iv) analyse case studies on biopesticides to determine technical and functional factors of success; (v) learn innovative knowledge-sharing and learning processes based on the principles of adults learning; and (vi) develop an action plan based on existing project activity timelines and agree what and how the identified prioritised functional capacities will be integrated. The outcomes of this training have been included throughout this Strategy.

Integration of functional capacities

The key objective of the project is to “develop a strategy to enable registration and promote the use of biopesticides, especially for late-season pests in key export crops, to reduce reliance on synthetic chemical pesticides, enhance compliance with MRL limits, and facilitate trade”. Table 1, developed during the ToT, shows the proportion of technical and functional aspects of the project.

Table 1: Proportion of technical and functional aspects in the project

Project objectives	Technical (50%)	Functional (50%)
1. Enhance registration of biopesticides	Registration involves technical trials, dossier preparation	Harmonisation in the region requires discussions among countries, information sharing (especially among registrars in the countries)
2. Promote use of biopesticides	Technical information needs to be provided to farmers on how to apply the biopesticide products	Awareness and advocacy are needed, and the role of non-governmental organisations (NGOs) in leading this process needs to be explored
3. Reduce reliance on synthetic pesticides	Promotion and establishment of processes of access to sustainable alternatives	Awareness and advocacy
4. Enhance compliance with MRLs	Policy requirements, helping farmers adopt good practices	Awareness and advocacy regarding MRLs
5. Facilitate trade	Compliance with MRL standards in export markets	Coordination between end-users and suppliers

Since the proportion of technical and functional aspects is well balanced, the role and development of functional capacities within the project cannot be underestimated. Functional capacities are the skills, knowledge, attitudes, and behaviours needed to better apply, organise and coordinate technical capacities built through the project, and are considered crucial to achieve the project’s objectives. A similar project funded by STDF and implemented by APAARI in Asia has shown that when technical and functional capacities are blended, scientists and development practitioners are more empowered to communicate, engage, and discuss innovative ideas with each other and diverse stakeholders, leading to more sustained networks and long-term collaboration to positively impact trade. As such, functional capacities have been integrated into all project activities as pathways towards achieving the project’s expected outcomes and impact.

KM, innovation and capacity development synergies

Linkages

The project demonstrates clear linkages between innovation and required KM and CD processes, to effectively facilitate the delivery of the project's objectives. Between 2012 and 2017, STDF funded three regional projects to support selected countries of the Association of Southeast Asian Nations (ASEAN) – STDF/PG/337, Africa – STDF/PG/359, and Latin America – STDF/PG/436 to meet pesticide-related export requirements based on international (Codex) standards. The external evaluation of these three projects (July 2019) highlighted the importance of MRLs in trade and the related capacities that need to be developed through an innovative approach.

As such, while the project's technical innovation is based on the knowledge of alternatives to chemical pesticides and understanding what biopesticides are in terms of assuring food safety, the project's innovation focus is on implementing innovative processes that are needed to boost the use of biopesticides in Africa. These include, for example, approaches of explaining and persuading the key stakeholders, including SADC governments, what biopesticides are, and their long-term cost/benefits. The promotion of biopesticides also requires innovative awareness and advocacy processes with farmers, building on what farmers already know, and broadening awareness to communities. Furthermore, the legal framework for biopesticides is missing in some SADC countries, thus introducing such frameworks in a new context is another innovation supported by the project.

Knowledge Management (KM)

The most common and succinct definition of KM is “...the process of capturing, distributing, and effectively using knowledge”.² However, in addition to these attributes, KM's most important added value is in its facilitation role, which is often underestimated and seen as separate from KM. Effective KM involves processes that facilitate learning and development of capacity and competencies, i.e. knowledge, skills, attitudes and energies that are needed to successfully achieve organisational or project objectives. Since capacity emerges over time and is driven by multiple factors, no single element, such as incentives, leadership, financial support, trained individuals, knowledge or structure can alone lead to the development of capacity.³ Therefore, the project will promote capacity development in the form of collective learning and utilisation of numerous opportunities for learning and knowledge sharing, to ensure that the project knowledge is well understood, internalised, used and passed on through a multiplier effect.

Hard skills are obviously the foundation, but soft skills are the essence, the difference between success and failure.

² Davenport, Thomas H. (1994) Saving IT's Soul: Human Centered Information Management. Harvard Business Review, March-April, 72 (2) pp. 119-131.

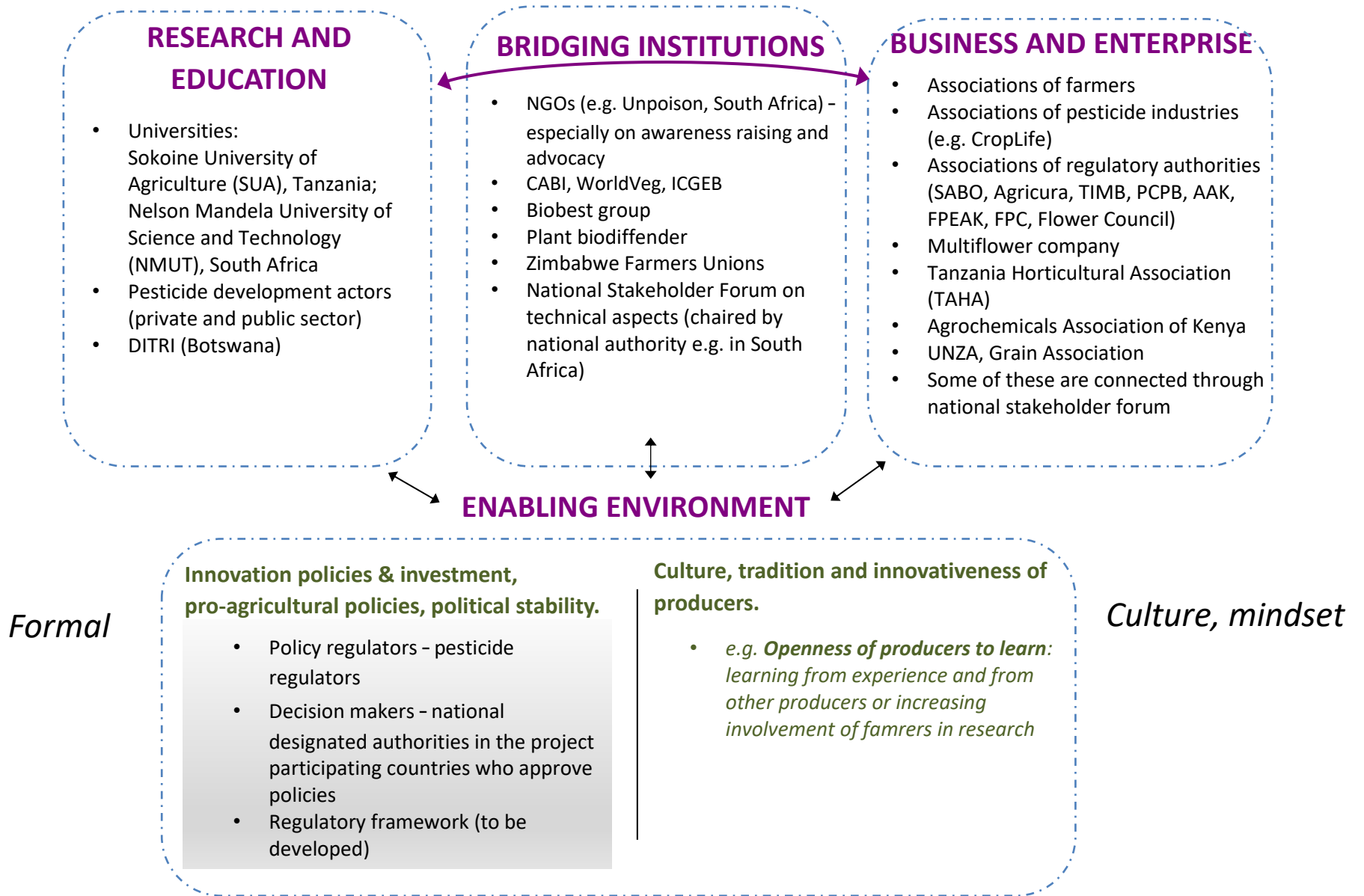
³ Tropical Agriculture Platform (2016) Common Framework on Capacity Development for Agricultural Innovation Systems: Synthesis Document, CAB International, Wallingford, UK

Agricultural Innovation and Agricultural Innovation System

Agricultural innovation is a process whereby individuals or organisations bring existing or new products, processes and forms of organisation into social and economic use to increase effectiveness, competitiveness, and resilience to shocks or environmental sustainability; thereby contributing to food and nutritional security, economic development and sustainable natural resource management. To fully realise the potential of innovation requires an understanding of complex processes, the multiple and diverse actors involved, as well as the links between them, from a system perspective. Agricultural Innovation System (AIS) is a network of actors (organisations and individuals), together with supporting institutions and policies in the agricultural and related sectors, that brings existing or new products, processes, and forms of organisation into social and economic use. Policies and institutions (formal and informal) shape the way that these actors interact, generate, share and use knowledge, as well as jointly learn.⁴ To better understand the biopesticides innovation system in Africa, and its complexity, a simple representation of various actors involved in biopesticide development, and their linkages is shown in Figure 1 below.

⁴ TAPipedia <https://tapipedia.org/framework/definitions>

Figure 1: Biopesticide Innovation System in SADC



Three dimensions of capacity development

The project will focus on the development of functional capacities, which includes non-technical knowledge, attitudes and behavior needed to successfully apply and coordinate technical capacities, boost innovation and achieve long-term development outcomes. One of the key principles of the TAP Common Framework considered in this Strategy are the three levels of capacity development and knowledge sharing. At the **individual level**, the project will build the core technical knowledge while developing various soft skills, attitudes and energies needed to successfully apply these technical skills. At the **organisational level**, the project will address how the participating organisations will coordinate



and use individual competencies internally and externally in ways that provide the space for collective learning, adaptation to different country contexts with respect to compliance to MRLs, facilitation of regulatory harmonisation, through building effective knowledge partnerships and managing knowledge resources. Through these efforts at individual and organisational levels, the project will contribute to an improved **enabling environment** in which individuals and organisations put their technical and functional competencies built through the project into action, and improve regulatory frameworks that will facilitate the project’s contribution to long-term expected impact.⁵

The KM and CD Strategy

The overall objective of the KM and CD Strategy is to: **“empower the project participants to effectively engage in knowledge sharing, co-creation, and dissemination, to ensure that knowledge, tools and processes generated or/and promoted by the project support farmers, regulatory authorities, industry associations, and agri-export companies in their exploitation, and build consumer trust.”**

The achievement of this objective requires both effective KM and CD strategies. The table below lists specific strategies that support the above-mentioned overall Strategy objective, and are fully aligned with the project objectives.

⁵ TAPipedia, <https://tapipedia.org/framework/3-dimensions-capacity-development>

Project Objectives	Specific KM strategies	Specific CD strategies
<ol style="list-style-type: none"> 1. Develop regional harmonised biopesticide regulations for selected SADC Member States (Botswana, Mozambique, South Africa, Tanzania, Zambia and Zimbabwe) in order to enhance the uniformity of their regulatory standards 2. Develop a roadmap for the translation and integration of guidelines participating countries' into respective national legislation 3. Promote specific biopesticides for use in pesticide mitigation, in order to enhance compliance with MRL requirements in export destinations 	<ol style="list-style-type: none"> 1. Enhance knowledge of the project participants on the technical and functional aspects of using biopesticides to mitigate pesticide residues through their engagement in collective learning and knowledge sharing 2. Engage in a dialogue with regulatory stakeholders of the participating SADC countries to facilitate learning, promote consensus and knowledge co-creation, and develop harmonised regional biopesticide guidelines, while galvanising their commitment for ensuring MRL compliance 3. Engage diverse groups of stakeholders, including the industry, to solicit their inputs into various project activities and encourage the practical use of project-generated knowledge to contribute to enhanced trade 4. Develop communication and outreach materials to raise awareness of (i) farmers and regulators on the importance of biopesticides to improve their manufacturing, acceptance and implementation; and (ii) consumers on the biopesticide safety aspects 5. Develop and make accessible a database of biopesticides registered in project countries to increase farmers' and industry's awareness of what is available on the market 	<ol style="list-style-type: none"> 1. Develop functional capacities of project participants and key project stakeholders to collaborate, reflect and learn, navigate complexity and engage in political processes, in order to better apply technical knowledge and assure MRL compliance 2. Develop communication skills of the project participants to enable them to influence the regulatory stakeholders in their commitment towards the use and reinforcement of the harmonised biopesticide guidelines 3. Develop facilitation skills of the project participants to support their countries in integrating biopesticide guidelines in their policies

Target Groups

The ToT developed a simple representation of a stakeholder map to serve as a 'living' management tool for the project to systematically map the actors involved in biopesticide regulation in Africa. The tool can further specify the primary (beneficiaries directly involved in the project) and secondary stakeholders (actors indirectly involved but to be informed by the project). The following target groups will benefit from the implementation of this Strategy:

Primary:

- Participating organisations
- Southern African Development Community (SADC)
- Southern Africa Network for Biosciences (SANBio)
- South African Bioproducts Organisation (SABO)
- The Toothpick Project
- International Institute of Tropical Agriculture (IITA) Aflasafe™ Project

Secondary:

- The Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA)
- The African Agricultural Technology Foundation (AATF)
- The East African Community (EAC)

Specific KM and CD Strategies with Indicative Activities

This KM Strategy will support the achievement of the project objectives mainly through the following processes:

- Strengthening knowledge base and transfer through **knowledge creation, collection and analysis** by processing the data and information, particularly through MRL studies.
- Promoting **knowledge sharing** among the project stakeholders by facilitating engagement, collaboration, learning and knowledge exchange.
- **Communication of results** from the project to various audiences and stakeholders at national and regional levels, as well as with the donor.
- **Awareness raising and advocacy** for MRL compliance, enhanced use of biopesticides, and safety aspects through Social Media tools (such as Facebook and LinkedIn), and the project website and websites of project partners.
- **Policy advocacy** to feed the project knowledge and evidence into policy and decision-making processes through policy briefs, innovative facilitation methods used in the harmonisation workshops, and infographics disseminated to targeted connections on Facebook and LinkedIn.
- **Monitoring, evaluation, reporting and learning (MERL)** activities to ensure the monitoring of progress, and documentation of results and learning.

Specific KM Strategies

KM Strategy 1: Enhance knowledge of the project participants on the technical and functional aspects of using biopesticides to mitigate pesticide residues through their engagement in collective learning and knowledge sharing

The project will deliver the first strategy through: (i) regular sharing of project experiences to identify bottlenecks, issues and solutions; (ii) technical training programmes with integrated functional component; (iii) documentation and sharing of learning and experiences of knowledge application based on the project training; and (iv) discussions on the outcomes of the residue mitigation studies. Indicative activities include developing articles (including through a project newsletter) about experiences of the project partners and outcomes of the studies; identification of key messages and knowledge co-created by the project partners to feed into various communication tools and processes; and integrating innovative KM processes in planned project events to enhance learning and engagement among the partners.

KM Strategy 2: Engage in a dialogue with regulatory stakeholders of the participating SADC countries to facilitate learning, promote consensus and knowledge co-creation, and develop harmonised regional biopesticide guidelines, while galvanising their commitment for ensuring MRL compliance

The project will deliver the second strategy through: (i) development of simple training materials showing the MRL residue mitigation process and Good Agricultural Practices in collaboration with national and regional organisations, to facilitate linkages with existing pesticide mitigation activities in the field and identify opportunities to bring the project's knowledge to farmers; (ii) targeted meetings to discuss and agree on harmonised national biopesticide regulatory standards and galvanise institutional commitment to update national biopesticide registration requirements and processes; (iii) development of regulatory guidelines validated by the policymakers through a consultative process; (iv) training on the application of the harmonised guidelines; (v) webinar to share the findings and evidence of the residue mitigation studies targeted outreach through policy briefs and project newsletter; and (vi) Social Media sharing of pertinent information.

KM Strategy 3: Engage diverse groups of stakeholders, including the industry, to solicit their inputs into various project activities and encourage the practical use of project-generated knowledge to contribute to enhanced trade

The project will deliver the third strategy through engaging and influencing various actors on development, adoption and implementation of guidelines and/or compliance with MRLs. These stakeholders will also be represented in the project's Steering Committee (PSC) and Advisory Board (PAB). The national focal points, who have been trained through ToT, will deliver various webinars to present the project results in all project countries. The specific stakeholders include:

- **Farmers:** through identification of farmer-focused activities to facilitate discussions around pesticide issues; develop practical communication materials (e.g. brochures and infographics focused on the benefits of biopesticides); engage with farmers' associations; and include them in PAB.
- **Private sector/industry (e.g. associations, exporters and growers):** through the development of collaboration and engagement on MRLs; development of regional

harmonised biopesticide regulatory guidelines; and including them in key project workshops, facilitated discussions, meetings and various project organs including the PAB and PSC.

- **Rural advisory services (RAS):** through the development and sharing of infographics, audio and video tools focused on practical aspects of biopesticide use; linking them with biopesticide dealers; and engaging them in facilitated discussions.
- **Universities and education institutes:** through the development of collaboration and engagement on MRLs; connecting the project outputs with their websites and databases; showcasing the project results in webinars; contributing to their study exchange programmes; connecting the project to their Social Media tools; involving them in facilitated discussions; and including their representatives on the PAB.
- **Consumers:** through developing key messages in the form of press releases, op-eds, and short articles to be disseminated through the mainstream media; developing articles and infographics focused on food safety to be disseminated through Social Media; tapping on key national events (e.g. to celebrate World Food Day) to organise consumer awareness campaigns; conducting a perception survey as a baseline to help participating countries identify public participatory mechanisms and develop decision-making models to gauge citizens' needs and address their concerns to be incorporated in the project's policy brief.
- **NGOs:** through identifying key national NGOs, or their associations, to support the project in facilitating awareness and advocacy, especially from the farmer-level to consumers; capitalising on their linkages with local stakeholders.

KM Strategy 4: Develop communication and outreach campaigns to raise awareness of (i) farmers and regulators on the importance of biopesticides to improve their manufacturing, acceptance and implementation; and (ii) consumers on the biopesticide safety aspects

The project will deliver the fourth strategy through: (i) development of an advocacy toolkit for the project organisations to be used in various meetings and seminars with key stakeholders (including policymakers); (ii) development and dissemination of convincing policy briefs on relevant topics; (iii) development of an online communication campaign (e.g. infographics, webinars, and Social Media) around the studies on residue decline and biopesticide efficacy; (iv) development of national press releases and dissemination to the local media; (v) comprehensive awareness-raising materials on pesticide residue mitigation focused on health and environment (citizens), benefits (farmers), and evidence (policymakers); and (vi) Social Media awareness campaigns using infographics to raise awareness about pesticide residue mitigation.

This work will be undertaken through dissemination efforts to various target groups as specified in Annex 1, including the concerned ministries; report of the project residue studies with accompanying seminars/webinars to discuss the evidence; and development and use of the ICGEB Facebook and LinkedIn tools to reach out to the target audiences; as well as possible integration of the project outputs in YouTube.

The project will also develop its website – its main communication tool – and a quarterly newsletter, which will start as an internal newsletter to inform the project partner organisations, and grow into an external communication product reaching diverse relevant stakeholders. At the global level, links will be made with APAARI's key communication tools, including the APAARI website and its Social Media tools. Furthermore, APAARI will regularly share the project progress and experiences in the context of its SSC work under the TAP.

KM Strategy 5: Develop and make accessible a database of biopesticides registered in project countries to increase farmers' and industry's awareness of what is available on the market

The project will deliver its fifth strategy by providing information on biopesticides registered in the various companies, and having these listed on the [CABI Bioprotection Portal](#) so that the information is readily available to growers.

More details about these strategies, the different indicative activities and target stakeholders can be found in Annex 1: KM Strategies with Modalities of their Implementation.

Specific CD Strategies

This Strategy integrates functional capacities, since they will be mostly built through 'facilitation', which plays a key role in ensuring effective KM. The KM/CD survey conducted in January 2022 identified the two most important functional capacities needed by the project participants: communication skills to influence decision-making processes in domestic pesticide issues related to biopesticide regulations; and (ii) advocacy skills needed to raise awareness on the importance of pesticide residue mitigation and promotion of biopesticides to impact trade. These capacity needs have been integrated into three specific CD strategies, as listed below, with activities that are either blended with the planned technical activities or stand-alone functional training programmes.

CD Strategy 1: Develop functional capacities of the project participants and key project stakeholders to collaborate, reflect and learn, navigate complexity and engage in political processes, in order to better apply technical knowledge and assure MRL compliance

The project will deliver the first CD strategy through: (i) integration of innovative KM processes into each technical training of the project, to promote critical reflection, learning, collaboration and engagement; (ii) use the biopesticide innovation system map in project activities to create an understanding of the whole system and the relationship among the parts of this system to facilitate a shift in mind-sets, attitudes and behavior; (iii) integration of facilitation processes in project activities that will enable the participants to understand each other's perspective and build synergistic relationships and networks to enhance collaboration; (iv) design of processes in every project training and knowledge-sharing event that will bring diverse stakeholders together and engage them in critical reflection and identification of new opportunities for learning and change; and (v) building the understanding of, and influence on, power relations within the biopesticide innovation system, considering: economic interests, the balance of power among elites and civil society-state-industry relations, empowerment of vulnerable, marginalised and other disadvantaged groups, and questioning the status quo.

CD Strategy 2: Develop communication skills of the project participants to enable them to influence the regulatory stakeholders in their commitment towards the use and reinforcement of the harmonised biopesticide regulations

The project will deliver the second CD strategy through: (i) integrating advocacy and negotiation activities to support the project participants in influencing decision-making processes, e.g. in the form of role plays in already planned activities of the project; (ii) bringing about new forms of interaction and communication among diverse stakeholders through planned webinars, seminars

and face-to-face meetings; (iii) design and deliver training on risk communication to support the project participants in raising awareness of different stakeholders, including consumers, about the benefits of biopesticides and risks of chemical pesticides, together with the development of materials for the advocacy toolkit; and (iv) design and deliver advocacy training to support the project participants in raising awareness on the importance of pesticide residue mitigation and promotion of biopesticides to impact trade, together with the development of materials for the advocacy toolkit.

CD Strategy 3: Develop facilitation skills of the project participants to support their countries in integrating biopesticide guidelines in their policies

The project will deliver the third CD strategy through: (i) supporting the participatory development of a strong CD strategy with both technical and functional capacities at the core; (ii) supporting the key stakeholders in understanding the gaps in the biopesticide innovation system, and helping them adjust the process based on new learning, dropping what is not working, and continuing what is working well; (iii) increasing connections and engaging key stakeholders with other organisations that are part of the system, as well as learning networks; (iv) promoting integration of new routines and ways of thinking into existing organisational processes to create a vibrant, enabling environment that boosts innovation and ensures effective functionality of the system; (v) seeking new opportunities for knowledge exploitation and exploration, supporting the key stakeholders in evaluating and aligning their institutional processes to the harmonised guidelines and compliance with national legislation; (vi) supporting the participating organisations to place learning in the centre, to allow capability building, and new functional capacities to grow and evolve; and (vii) supporting the participating organisations in building a clear pathway of change for biopesticide development and MRL compliance, with focus on creating synergies among the diverse actors involved, as well as strong leadership, attitudes, investment and motivation to strategic change. Finally, the development of facilitative leadership of the project participants and key stakeholders should enable all the capacities to be developed through the project to lead to transformative change with focus on co-creating the future. The initial ToT for selected project participants will be the basis for delivering on this specific strategic objective.

Way Forward

The success of the project relies on effective KM and CD coordination, and close communication and collaboration between all project partners and other stakeholders. KM and functional CD form an integral part of the project strategy to support the realisation of its objectives. As such, framing effective KM and CD processes and assuring that the right KM tools are in place and being used will help the Project Coordination Team to recognise and fulfil the partners' needs and knowledge gaps to mitigate trade barriers, and enable them to better reach regional and global markets with their agricultural products. This KM and CD Strategy will be linked to the project MERL system, especially through the monitoring tool provided in Annex 1. APAARI will provide technical backstopping to ICGEB to ensure smooth implementation of the functional component of the project. The indicative KM and CD activities proposed in this Strategy have been aligned with respective areas agreed in the project design document, which can be found in Annex 3. In addition to MERL, the progress will also be regularly monitored through Project Coordination Meetings with Ms. Catalina Pulido, Economic Affairs Officer, STDF; Steering Committee Meetings; as well as Advisory Board Meetings.

Annex 1: KM/functional CD Strategies with Modalities of their Implementation

KM Strategies

Specific activity	Process (how)	Tools	Target	Responsibility	When
KM Strategy 1: Enhance knowledge of the project participants on the technical and functional aspects of using biopesticides to mitigate pesticide residues through their engagement in collective learning and knowledge sharing					
Regular sharing of project experiences to identify bottlenecks, issues and solutions	<ul style="list-style-type: none"> Integrating innovative KM processes in planned project events to enhance learning and engagement among the partners Identification of key knowledge for further documentation Providing peer-to-peer assistance in discussing solutions to various issues Feeding the knowledge into various communication tools and processes e.g. the newsletter, success stories, case studies or online articles 	Zoom/MS Teams; Face-to-face	All project participants	Project Management	Throughout the project
Technical training programmes with integrated functional component	<ul style="list-style-type: none"> Pre-training discussion on the design of technical training with the whole team to identify sessions that may include participatory approaches, engagement and soft skills development Design of “stand alone” sessions on functional aspects back-to-back with technical training 	Zoom/MS Teams; Face-to-face	All project participants	Project Management; APAARI	Pre-training in Year 1. Other training sessions to correspond with the technical training sessions
Documentation and sharing of learning and experiences of knowledge application	<ul style="list-style-type: none"> Development of articles about experiences of the project partners and outcomes of the project activities (including residue mitigation studies) Identification and development of case studies/success stories 	Project newsletter; Social Media	All project participants	Project Management	Year 3
Discussions on the outcomes of the residue mitigation studies	<ul style="list-style-type: none"> Organization of a webinar to discuss the first-hand information with the partners and relevant stakeholders 	Zoom/MS Teams; Policy brief	All project participants and other selected stakeholders from SADC region	Project Management	Year 3

Specific activity	Process (how)	Tools	Target	Responsibility	When
KM Strategy 2: Engage in a dialogue with regulatory stakeholders of the participating SADC countries to facilitate learning, promote consensus and knowledge co-creation, and develop harmonised regional biopesticide regulations, while galvanising their commitment for ensuring MRL compliance					
Development of simple training materials showing the MRL residue mitigation process and Good Agricultural Practices in collaboration with national and regional organisations	<ul style="list-style-type: none"> Review of existing training materials from similar projects (e.g. APRMP implemented by APAARI) to avoid duplication of efforts Discussion on the content of the training materials with the whole team Identification of and linking with existing pesticide mitigation activities and other opportunities in the field to bring the project knowledge to farmers Stakeholder consultations including farmers 	Practical guidelines	Primary stakeholders	Project Management; Project Consultants	Year 2
Targeted meetings to discuss and agree on harmonised national biopesticide regulatory standards and galvanise institutional commitment to update national biopesticide registration requirements and processes	<ul style="list-style-type: none"> Regulatory harmonization workshop designed in a way to build functional capacities to enable primary stakeholders (SADC) to harmonise national biopesticide regulatory standards Integration of innovative KM methods to help build commitment, and facilitate knowledge sharing and collaboration 	Innovative KM methods	SADC		
Development of regulatory guidelines validated by the policymakers through a consultative process	<ul style="list-style-type: none"> Formation of Technical Working Group of key regulatory officials from the Southern Pesticides Regulatory Forum, including an industry representative. Review of current biopesticides regulatory status in project countries. Regular MS Teams/Zoom meetings to develop guidelines. <p>One face to face meeting to discuss draft guidelines, followed by virtual meeting to finalise the same.</p>	MS Teams/Zoom; Face-to-face	Regulatory officials	Project Management; Technical Working Group	Year 1 & 2.

Specific activity	Process (how)	Tools	Target	Responsibility	When
Training on the application of the harmonised guidelines; targeted outreach through policy briefs, project newsletter	<ul style="list-style-type: none"> • Training of regulators on the application of the harmonised guidelines • Development and use of policy brief to reach out to primary stakeholders • Development and use of the project newsletter for dissemination of information on harmonised guidelines 	Training Policy brief Project newsletter	Regulators Policy makers of SADC; Primary stakeholders	Project Management	Year 3
Social Media sharing of pertinent information	<ul style="list-style-type: none"> • Identification of key messages for dissemination • Development of infographics around the residue mitigation studies and harmonised guidelines • Outreach 	ICGEB Facebook and Twitter; Short video clips of SADC representatives	Primary and secondary stakeholders	Project Programme Specialist	Year 2 & 3
KM Strategy 3: Engage diverse groups of stakeholders to solicit their inputs into various project activities and encourage the practical use of project-generated knowledge to contribute to enhanced trade					
Engagement with farmers	<ul style="list-style-type: none"> • Identification of farmer-focused activities to facilitate discussions on pesticide issues • Development of practical communication materials • Engagement with farmers' associations by including them in the development of practical guidelines on MRL, and the PAB • Presentation of the project results 	Brochures, infographics focused on benefits of biopesticides Webinars In-country meetings	Selected farmer organizations in SADC	National focal points who have been trained on functional capacity development	Year 3
Engagement with the private sector/industry	<ul style="list-style-type: none"> • Inclusion in the development of regional harmonised biopesticide regulatory guidelines • Inclusion in key project workshops and meetings (e.g. regulatory harmonisation) • Facilitated discussions in project webinars • Inclusion in the PAB and PSC 	Project newsletter	Associations, exporters and growers	Project Management	Throughout project
Engagement with rural advisory services (RAS)	<ul style="list-style-type: none"> • Development and sharing of practical communication materials on biopesticide use • Linking RAS with biopesticide dealers 	Infographics Audio and video materials; Project newsletter	RAS providers	Project Management	Year 2 & 3

Specific activity	Process (how)	Tools	Target	Responsibility	When
	<ul style="list-style-type: none"> Inclusion in facilitated discussions during the project workshops and meetings 				
Engagement with universities and education institutes	<ul style="list-style-type: none"> Connecting the project outputs with university websites and databases Showcasing the project results in webinars that will include higher education Contributing to university study exchange programmes Connecting the project to universities' Social Media tools Inclusion in facilitated discussions in key project's workshops and meetings Inclusion in the PAB 	Websites; Databases; Social media; Project newsletter	Representatives of key higher education institutions	Project Management	Year 3
Engagement with consumers	<ul style="list-style-type: none"> Development of key messages in the form of press releases, op-eds, and short articles to be disseminated through the mainstream media Development of articles and infographics focused on food safety to be disseminated through Social Media Tapping on key national events (e.g. to celebrate World Food Day) to organise consumer awareness campaigns Conducting a perception survey as a baseline to help participating countries identify public participatory mechanisms and develop decision-making models to gauge citizens' needs and address their concerns to be incorporated in the project's policy brief. 	Press releases; Op-eds; Articles; Infographics; Perception survey; Policy brief	Consumers (both rural and urban)	Project Management	Year 3
Engagement with NGOs	<ul style="list-style-type: none"> Identification of key national NGOs, or their associations Mobilization of the key NGOs to support the project in facilitating awareness and advocacy, especially from the farmer level to 	Project newsletter	Selected national NGOs	Project Management	Year 2

Specific activity	Process (how)	Tools	Target	Responsibility	When
	consumers, capitalising on their linkages with local stakeholders.				
KM Strategy 4: Develop communication and outreach campaigns to raise awareness of: (i) the industry, farmers, and regulators on the importance of biopesticides to improve their manufacturing, acceptance and implementation; and (ii) consumers on the biopesticide safety aspects.					
Development of an advocacy toolkit for the project organisations	<ul style="list-style-type: none"> Development of comprehensive awareness – raising materials on pesticide residue mitigation focused on health and environment (citizens), benefits (farmers), and evidence (policymakers) Dissemination online and face-to-face in various meetings and workshops 	Policy briefs on relevant topics	Primary stakeholders	Project Management	Year 3
Development of an online communication campaign around the studies on residue decline and biopesticide efficacy	<ul style="list-style-type: none"> Launch of the project residue studies with accompanying seminars/webinars to discuss the evidence Social Media awareness campaigns using various web tools to raise awareness about pesticide residue mitigation. 	Infographics, webinars, and Social Media; ICGEB website, Facebook, Linked In, YouTube; Project website; Project newsletter; APAARI website and presentations for international outreach	Primary and secondary stakeholders; Wider public	Project Management	Years 1-3
Media engagement	<ul style="list-style-type: none"> Development of national press releases and dissemination to the local media 	Press releases	National and regional media		
KM Strategy 5: Build a network of biopesticide practitioners and promoters to provide a long-term peer assist support beyond the project					
Creation of an informal network to ensure sustainability of project outcomes	<ul style="list-style-type: none"> Take every opportunity during the project events to facilitate the sharing of experiences, engagement and collaboration among the participating organizations in the project Create and facilitate a space for online interaction in the form of a mentoring or peer assist support Increase connections and engage the key stakeholders 	Face-to-face and online discussions WhatsApp	Primary and secondary stakeholders	Programme Specialist	Year 3

Specific activity	Process (how)	Tools	Target	Responsibility	When
	with other organisations that are part of the system, as well as learning networks				

CD Strategies

Specific activity	Process (how)	Tools	Target	Responsibility	When
CD Strategy 1: Develop functional capacities of the project participants and key project stakeholders to collaborate, reflect and learn, navigate complexity and engage in political processes, in order to better apply technical knowledge and assure MRL compliance					
Integration of innovative KM processes into each technical training of the project, to promote critical reflection, learning, collaboration and engagement; understanding of different participants' perspectives	<ul style="list-style-type: none"> • Design appropriate knowledge-sharing and learning processes in every project training and knowledge-sharing event that will bring diverse stakeholders together and engage them in critical reflection and identification of new opportunities for learning and change • In the training design, include a session objective for each training session to enable identification of an appropriate methodology • Provide logbooks to enable the trainees to critically reflect on the training content • Provide space for collective reflection at the end of the training 	<ul style="list-style-type: none"> • World café, storytelling, peer assist, small group discussions, panel discussions, role play • Logbooks • After action review, evaluation 	Primary stakeholders	ICGEB and trained project trainers	Year 1-3
Use the biopesticide innovation system map in project activities to create an understanding of the whole system and the relationship among the parts of this system to facilitate a shift in mind-sets, attitudes and behavior	<ul style="list-style-type: none"> • Use the map in project presentations to contribute to an enhanced understanding of the project stakeholders about the biopesticide innovation system (and discourage linear thinking) • Explore the different roles of system actors to build the understanding of, and 	<ul style="list-style-type: none"> • System map • PPTs 	Primary stakeholders	ICGEB	Year 3

Specific activity	Process (how)	Tools	Target	Responsibility	When
	influence on, power relations within the biopesticide innovation system, considering: economic interests, the balance of power among elites and civil society-state-industry relations, empowerment of vulnerable, marginalised and other disadvantaged groups, and questioning the status quo				
CD Strategy 2: Develop communication skills of the project participants to enable them to influence the regulatory stakeholders in their commitment towards the use and reinforcement of the harmonised biopesticide regulations.					
Integrating advocacy and negotiation activities to support the project participants in influencing decision-making processes	<ul style="list-style-type: none"> Integration of role play and other innovative forms of interaction in project training and knowledge-sharing events 	Role play	Primary stakeholders	ICGEB	Year 3
Design and deliver training on risk communication and advocacy to support the project participants in raising awareness of different stakeholders, including consumers, about the benefits of biopesticides and risks of chemical pesticides	<ul style="list-style-type: none"> Design a stand-alone training session on risk communication Integrate the results of the perception survey in the training Develop /validate materials for the advocacy toolkit 	Workshop/webinar	Primary stakeholders	ICGEB	Year 3
CD Strategy 3: Develop facilitation skills of the project participants to support their countries in integrating biopesticide guidelines in their policies					
Supporting the participatory development of a strong Action Plan/Strategy with both technical and functional capacities at the core	<ul style="list-style-type: none"> Include this topic as part of the functional training towards the end of the project Helping the stakeholders understand the gaps in the biopesticide innovation system, and adjust the process based on new learning, 	Project partners' national Action Plan/Strategy	Primary stakeholders	ICGEB	Year 2-3

Specific activity	Process (how)	Tools	Target	Responsibility	When
	dropping what is not working, and continuing what is working well, and where new capacities are required				
Supporting the key stakeholders in evaluating and aligning their institutional processes to the harmonised guidelines and compliance with national legislation	<ul style="list-style-type: none"> • Support integration of new routines and ways of thinking into existing organisational processes to ensure effective functionality of the biopesticide system • Advocating for learning to be in the centre of institutional development, allowing capability building, and new functional capacities to grow and evolve • Supporting the participating organisations in building a clear pathway of change for biopesticide development and MRL compliance, with focus on creating synergies among the diverse actors involved, as well as strong leadership, attitudes, investment and motivation to strategic change. 		Primary stakeholders	ICGEB	Year 2-3
Design a training/session in facilitative leadership to enable the project participants and other stakeholders to facilitate transformative change with focus on co-creating the future.	<ul style="list-style-type: none"> • Integration of the leadership training in one of the final project workshops • Development of facilitative leadership of the project participants and key stakeholders to enable all the capacities to be developed through the project to lead to transformative change with focus on co-creating the future. 		Primary stakeholders	ICGEB National Focal points	Year 3

Annex 2: Lessons learned from the Asia Pesticide Residue Mitigation Project

- Understanding the science behind the project in order to come up with the “blending” ideas (non-technical people); and the meaning of “functional capacities” (technical people) is crucial.
- Convincing technical people that the scientific part alone is insufficient to ensure sustainable outcomes and impact of the project requires thinking from the system perspective.
- Mindset of the scientists tends to be on seeing the development of functional capacities as a completely separate activity; and the role of facilitation – links with KM as underestimated. This requires constant communication to shift away from this perspective.
- Creativity and innovation is stimulated through collective learning of all project stakeholders – including the coordination team.

Annex 3: KM/functional Sub-Activities in the Context of the Project Logframe

	Project description	Measurable indicators⁶	Sources of verification	Assumptions and risks	KM and functional CD activities
Goal	Enhanced compliance by project countries of pesticide MRL requirements of Codex	10% increase in exports of targeted crops from participating countries within five years of project completion 20% increase in the percent of produce grown under a residue mitigation system to comply with MRLs	SADC Statistics Yearbook This data will enable us to determine if the export of specific commodities has increased or if market access has improved. Online information such as EU rapid alerts and other information relating to pesticide residue MRL violations will be monitored to see if the particular problems still appear as trade issues.	<ul style="list-style-type: none"> • Target markets accept Codex or currently established MRL standards. • Target biopesticide products are available in participating countries. • Regulatory authorities agree to update biopesticide registration requirements and processes in participating countries. 	
Immediate objective / Result	Increased use of biopesticides to reduce pesticide residues in key crops	Mutually acceptable standards of biopesticide regulation Increased understanding among regulatory authorities of how time, IPM production practices and end of season mitigation impact residues	Regulatory guidelines developed Number of collaborative meetings Data on actual amounts of biopesticides used on the target crops	<ul style="list-style-type: none"> • Increased local access to biopesticides 	
Output 1:	Harmonised biopesticide regulations for selected SADC countries	Government authorities in 6 countries have a regulatory system in place specific for biopesticides # and types of dialogue between government authorities and other	Pre/post workshop surveys New biopesticide regulatory guidelines and other knowledge products Legal roadmaps developed for each of the participating countries	<ul style="list-style-type: none"> • Regulators available to provide required information and participate in the workshops 	

⁶ Some of these indicators may be reviewed, fine-tuned and made more focused based on the outcomes of the baseline surveys.

	Project description	Measurable indicators⁶	Sources of verification	Assumptions and risks	KM and functional CD activities
		regional bodies on the harmonisation of their systems New partnerships developed between regulators in targeted countries and registrants			
Activities	<p>Surveys to determine issues of relevance to a common biopesticides regulatory policy and also determining specific constraints women farmers face so that these can be considered during project implementation</p> <p>Detailed legal assessment to determine what is needed to get legal status for biopesticides regulations</p> <p>Validation workshops⁷ to agree on common policy orientations to inform development of regulatory guidelines</p> <p>Development of a harmonised biopesticide guidelines</p> <p>Development of an implementation roadmap to translate guidelines into national legislation</p> <p>Development of Project outcomes implementation and adoption action plan committee to monitor translation and integration of guidelines into national legislation</p>	<p>Up to 6 country reports outlining areas that are amenable to a common regulatory approach in the SADC region</p> <p># of participants (disaggregated by gender),</p> <p>A draft preliminary harmonised biopesticides regulatory framework for the SADC region</p> <p>Inputs from other relevant institutions⁸ including the Chile led OECD biopesticides project, and incorporated into draft</p> <p>6 legal roadmaps indicating the process to translate regional guidelines into national legislation</p> <p># of participants at the harmonisation workshop (disaggregated by gender)</p>	<ul style="list-style-type: none"> • Pre- and post-workshop surveys and evaluations of trainees' knowledge • Meeting reports 	<ul style="list-style-type: none"> • Many of the meetings will be held virtually. • There will be adequate responses to the surveys. • There will be agreement on issues of convergence, and which are therefore amenable to harmonisation. • Countries would be willing to adopting harmonised guidelines. 	<ul style="list-style-type: none"> • Regulatory harmonization workshop designed in a way to build functional capacities to enable primary stakeholders (SADC) to harmonise national biopesticide regulatory standards • Integration of innovative KM methods to help build commitment, and facilitate knowledge sharing and collaboration • Training of regulators on the application of the harmonised guidelines • Development and use of policy brief to reach out to primary stakeholders • Development and use of the project newsletter for dissemination of information on harmonised guidelines • Inclusion of the private sector/industry in the development of regional harmonised biopesticide regulatory guidelines, and key project workshops and meetings (e.g. regulatory harmonization) • Use the biopesticide innovation system map in presentations for regulators to contribute to an enhanced understanding of the project stakeholders about the biopesticide innovation system (and discourage linear thinking) and the types and roles of various system actors • Support integration of new routines and ways of thinking into existing organisational processes to ensure effective functionality of the biopesticide system

⁷ Training and discussions sessions for farmers, policy makers and country focal points will be held back-to-back with all project meetings/workshops to ensure that they are fully engaged throughout the project and ultimately 'empowered' to be able to implement project outcomes.

⁸ These would include the African Agricultural Technology Foundation, the East African Community, the West Africa Pesticide Registration Committee, the Comité Sahélien des Pesticides, the Food and Agriculture Organisation, USDA, and the African Union Inter-African Phytosanitary Council.

	Project description	Measurable indicators⁶	Sources of verification	Assumptions and risks	KM and functional CD activities
	<p>ICGEB Workshop on translation of harmonised guidelines into national legislation</p> <p>ICGEB Short term offered to individuals of South Africa and/or Zimbabwe and/or Tanzania to work on actual drafting and incorporation of guidelines into national legislation.</p>	<p>Implementation roadmap</p> <p>Multi stakeholder implementation committee.</p> <p>ICGEB Workshop organised</p> <p>At least 3 'drafting' fellowships offered.</p>			<ul style="list-style-type: none"> • Advocating for learning to be in the centre of institutional development, allowing capability building, and new functional capacities to grow and evolve • Supporting the participating organisations in building a clear pathway of change for biopesticide development and MRL compliance, with focus on creating synergies among the diverse actors involved, as well as strong leadership, attitudes, investment and motivation to strategic change. • Integration of leadership training to better contribute to transformative change after the end of the project.
Output 2:	New residue data and improved knowledge to interpret this data on the use of biopesticides (combined with conventional pesticides) to mitigate pesticide residues	<ul style="list-style-type: none"> • Up to 6 field residue mitigation studies on specific pesticides / commodities • Data/results on residue declines 	<ul style="list-style-type: none"> • Reports on residue decline analyses • Data on actual amounts of biopesticides used on the target crops 	<ul style="list-style-type: none"> • In-kind and financial contributions provided by relevant stakeholders • Normal growing season devoid of significant inclement weather or any other confounding factors that would render the field trial data unacceptable • Scientists available to attend trainings and apply knowledge gained in follow-up 	
Activities	<p>Baseline survey to determine specific biopesticide usage in target crops</p> <p>Capacity building workshops, trainings and consultations to empower farmers with the knowledge and skills to conduct supervised field trials and lab analysis using a ToT model</p> <p>Field and lab preparations</p>	<ul style="list-style-type: none"> • Percent market penetration • # of registered products • # of workshops/training events • # of scientists trained (disaggregated by gender) • # of efficacy studies planned, implemented and analysed 	<ul style="list-style-type: none"> • Sales records • Pre- and post-workshop surveys and evaluations of trainees' knowledge • Meeting reports • Knowledge products with testimonials of trainees • Report on country's preparedness to initiate field trial 		<ul style="list-style-type: none"> • Development of articles about experiences of the project partners and outcomes of the project activities (including residue mitigation studies) • Organization of a webinar to discuss the first-hand information based on the outcomes of the residue mitigation studies with the partners and relevant stakeholders • Development of simple training materials showing the MRL residue mitigation process and Good Agricultural Practices in collaboration with national and regional organisations (review of existing training

	Project description	Measurable indicators⁶	Sources of verification	Assumptions and risks	KM and functional CD activities
	<p>Field residue mitigation studies</p> <p>Sample preparation and analysis</p> <p>Efficacy studies that include biopesticides</p> <p>SOP refinement and protocol development</p> <p>End-of-project workshop to discuss and disseminate project results, experiences, and longer-term sustainability</p>	<ul style="list-style-type: none"> Revised SOP documents 			<p>materials from similar projects, e.g. APRMP implemented by APAARI, to avoid duplication of efforts; discussion on the content of the training materials with the whole team; identification of and linking with existing pesticide mitigation activities and other opportunities in the field to bring the project knowledge to farmers)</p> <ul style="list-style-type: none"> Identification of key messages for dissemination; development of infographics around the residue mitigation studies and harmonised guidelines; social media outreach Launch of the project residue studies with accompanying seminars/webinars to discuss the evidence Social Media awareness campaigns using various web tools to raise awareness about pesticide residue mitigation. Development of press releases based on the findings.
Output 3	<p>Established IPM strategies and GAP for key crop/pest combinations and using biopesticides</p> <p>Training of representatives of farmer groups on GAP relating to biopesticides and IPM. This will be held back-to-back with the various other project meetings.</p> <p>Countries organised and hosted by project countries.</p> <p>End line survey and report</p>	<ul style="list-style-type: none"> IPM toolkit available SOPs and guidelines for GAP developed Database of biopesticides registered in all project countries available and accessible through ICGEB website #of commercially available biopesticides from project countries listed in the CABI Bioprotection portal. At least 6 in-country workshops Information on how end line indicators compare to those at the baseline New product registrations 	<ul style="list-style-type: none"> Availability of IPM Toolkit, SOPs and biopesticides database Training reports Sales records Final report 		<ul style="list-style-type: none"> Integrating innovative KM processes in planned project events to enhance learning and engagement among the partners Identification of key knowledge for further documentation Providing peer-to-peer assistance in discussing solutions to various issues Feeding the knowledge into various communication tools and processes e.g. the newsletter, success stories, case studies or online articles Pre-training discussion on the design of technical training with the whole team to identify sessions that may include participatory approaches, engagement and soft skills development Identification and development of case studies/success stories Design of "stand alone" sessions on functional aspects back-to-back with technical training Farmer engagement: Identification of farmer-focused activities to facilitate discussions on pesticide issues; development of practical

	Project description	Measurable indicators ⁶	Sources of verification	Assumptions and risks	KM and functional CD activities
		<ul style="list-style-type: none"> Percent market penetration of identified biopesticides 			<p>communication materials; inclusion of farmers' associations in the development of practical guidelines on MRL, and the PAB; presentation of the project results</p> <ul style="list-style-type: none"> Industry engagement: Inclusion in key project workshops and meetings (e.g. regulatory harmonization); facilitated discussions in project webinars; and inclusion in the PAB and PSC Engagement with RAS: Development and sharing of practical communication materials on biopesticide use; inking RAS with biopesticide dealers; inclusion in facilitated discussions during the project workshops and meetings. Engagement with Higher Education Institutions (HEI): Connecting the project outputs with university websites and databases; showcasing the project results in webinars that will include higher education; contributing to university study exchange programmes; connecting the project to universities' Social Media tools; inclusion in facilitated discussions in key project's workshops and meetings; and inclusion in the PAB Engagement with consumers: Development of key messages in the form of press releases, op-eds, and short articles to be disseminated through the mainstream media; development of articles and infographics focused on food safety to be disseminated through Social Media; tapping on key national events (e.g. to celebrate World Food Day) to organise consumer awareness campaigns; conducting a perception survey as a baseline to help participating countries identify public participatory mechanisms and develop decision-making models to gauge citizens' needs and address their concerns to be incorporated in the project's policy brief. NGO engagement: Identification of key national NGOs, or their associations; mobilization of the key NGOs to support the

	Project description	Measurable indicators ⁶	Sources of verification	Assumptions and risks	KM and functional CD activities
					<p>project in facilitating awareness and advocacy, especially from the farmer level to consumers, capitalising on their linkages with local stakeholders.</p> <ul style="list-style-type: none"> • Development of comprehensive awareness – raising materials on pesticide residue mitigation focused on health and environment (citizens), benefits (farmers), and evidence (policymakers) • Dissemination online (especially Social Media campaign and press releases), and face-to-face in various meetings and workshops • Creation of an informal network by facilitating the sharing of experiences, engagement and collaboration among the participating organizations in the project in every project meeting; creating and facilitating an online space for interaction in the form of a mentoring or peer assist support; and increasing connections and engaging key stakeholders with other organisations that are part of the system, as well as learning networks. • Design appropriate knowledge-sharing and learning processes in every project training and knowledge-sharing event that will bring diverse stakeholders together and engage them in critical reflection and identification of new opportunities for learning and change (including session objectives, integration of role play, and facilitation of individual and collective reflection). • Design a stand-alone training session on risk communication, integrate the results of the perception survey in the training • Development and validation of materials for the advocacy toolkit • Conduct participatory development of an Action Plan/Strategy with both technical and functional capacities at the core