RFP-2023-211-STDF EVALUATION

EVALUATION OF THE STANDARDS AND TRADE DEVELOPMENT FACILITY

STDF/PG/495- REGIONAL PROJECT FOR ACCREDITATION OF TESTS IN ANIMAL HEALTH DIAGNOSTIC LABORATORIES

PROJECT IMPACT EVALUATION REPORT

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SUBMITTED BY

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ACRONYMS AND ABREVIATIONS

ASF	African swine fever
BAHA	Belize: Aquatic Animal Health Laboratory
HI	Hemagglutination Inhibition
HPAI	Highly pathogenic avian influenza
IHIMV	Honduran Institute of Veterinary Medical Research
IAEA	International Atomic Energy Agency
IPSA	Institute for Agricultural Protection and Health
KII	Key Informant Interview
LADIV	Veterinary Diagnostic Laboratory
LANASAVE	National Laboratory of Veterinary Services
LARRSA	Regional Reference Laboratory for Animal Health
LAVECEN	Central Veterinary Laboratory
LSA	University of San Carlos; Official Laboratory for Animal Health
MAGA	Ministers of Agriculture and Livestock
NCFDA	National Centre for Foreign Animal Disease
NHP	Necrotizing white spot disease
NLN	National Laboratory Network
OPESCA	Organization of the Fisheries and Aquaculture Sector of the Central American Isthmus
PCR	Polymerase Chain Reaction
PG	Project Grant
PIE	Project Impact Evaluation
PPG	Project Preparation Grant
QMS	Quality Management Systems
SPS	Sanitary and Phytosanitary
USAC	University of San Carlos de Guatemala
WTO	World Trade Organization

1 HIGH LEVEL SUMMARY

1. **Project aims and objectives:** The project 'STDF/PG/495 Regional Project for Accreditation of Tests in Animal Health Diagnostic Laboratories' was a regional project funded by the Standards Trade and Development Facility (STDF) that aimed to a) Promote safe trade in animals and animal products by improving the credibility of their health status b) strengthen the capacity of diagnostic laboratories for transboundary and economically and socially important diseases (both terrestrial and aquatic) of economic and social importance in Central America region, implemented between 2016 and 2022.

2. The project supported nine (9) participating laboratories in the region in implementing Quality Management Systems (QMS) and obtaining relevant accreditations, creating a sub-national network of laboratories with the capability to effectively diagnose and mitigate transboundary diseases, and increase Sanitary and Phytosanitary (SPS) capacity in the region. Activities were implemented across eight (8) countries: Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Dominican Republic.

3. **Partners and beneficiaries:** The Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA) was responsible for overall project management, implementation and coordination of the project from March 2016 to December 2022. OIRSA collaborates closely with its signatory countries for the prevention, control, and eradication of pests and diseases (notably in terms of porcine, bovine, aquaculture, poultry and beekeeping with regards to animal health). The main project beneficiaries were the participating laboratories in the eight countries, as well the Ministries of Agriculture and Livestock in each government.

4. **The Evaluation:** The project impact evaluation (PIE) included document reviews and interviews, as well as quantitative data analysis. Between December 2023 and February 2024, the project evaluator reviewed documents data and survey results, as well as conducting virtual interviews and undertaking field work in El Salvador and Guatemala. Interviews included OIRSA representatives, as well as leadership and staff from participating laboratories.

1.1 SUMMARY OF FINDINGS:

5. **Relevance:** The project was deemed to be relevant, with evidence of alignment to regional and national strategies. These highlighted enhancing laboratory capabilities for testing and addressing zoonotic diseases and accreditation under ISO 17025 as a priority. The approach was developed with input from beneficiary countries (including eight participating authorities and nine laboratories) with target products and accreditations selected by each country. Commitment letters provided by national counterparts to maintain accreditations attested to initial buy-in, however, frequent political changes eroded beneficiary commitment over time.

6. **Coherence**: The project had a unique value to the region; however, the initial design could have been better scaled through broader engagement and commitment from stakeholders (including the private sector, regulatory and financial authorities) to ensure the ongoing maintenance of accreditations.

Synergies with partners were consistently and effectively leveraged, with many inter-laboratory exchanges and key relationships with external partners facilitated during implementation. A better dissemination of project results could have generated interest from additional partners.

7. **Efficiency:** Despite delayed activities in some participating countries and the impact of COVID-19, implementation was efficient overall with the majority of the budget disbursed by project close. Resources were optimized, with funds for activities not implemented reallocated to increase project scope (e.g. achieving more accreditations and strengthening laboratory capacity). Project and reporting deadlines were largely well-respected, with strong and consistent central coordination through the implementing partner OIRSA.

8. **Effectiveness**: Diagnostic capabilities were increased across participating laboratories, with results exceeding initial set targets. The main challenges faced related to COVID-19, political and personnel changes, limited metrology services and the lack of accreditation bodies. Unequal country profiles resulted in uneven pace of implementation amongst participating countries (notably Honduras and Panama). However, accreditations were eventually obtained by all countries across target products, with increased regional SPS capacity evidenced by the expanded processing capacity of participating laboratories. The quality and timing of reporting was largely adequate, but the results framework could have been orientated more effectively towards measuring and assessing impact (i.e. increase in trade of animals and animal products).

9. **Impact:** The evidence suggests that increased diagnostic capacity of the regional laboratory network and credibility of the tests has had a positive impact on target product exports, both within the region and externally. Countries saw growth in key markets such as shrimp and cattle, with international markets opening or re-opening since project launch. Additionally, regional ability to rapidly prevent and control endemic and transboundary diseases increased. Positive social impact was highlighted as a result of growth of the livestock industry. Gender and environment were not adequately integrated into the project.

10. **Sustainability:** Sustainability was considered during project design with firm commitment originally provided by participating authorities. [1] While accreditations have been largely maintained, changes in leadership and personnel within laboratories have presented significant capacity challenges leading to the loss of accreditations in some countries. This has been compounded by a lack of prioritization and resources to sustain the ongoing cost of required audits, supplies and equipment. The creation of a sub-

[1] In light of this, the planned economic sustainability assessment was dropped from the project scope. Given the initial commitment to maintain accreditations was not effectively carried through resulting in the eventual loss of some accreditations, it may have been beneficial for the planned economic sustainability assessment (Result #10) to have taken place. We note, however, that this would have been at the expense of the substantial additional accreditations obtained through this cost saving.

regional network of laboratories has led to notable sustainability wins, contributing to continued knowledge sharing in the region.

1.2 LESSONS LEARNED:

11. There was limited involvement of the private sector, including producers' and exporters' associations, both during project design and implementation. This affected buy-in and ongoing government funding, notably in terms of sourcing vital equipment and audits necessary to sustain accreditation.

12. The regional and twinning approach proved highly effective for disease specialization. Collaborations (e.g. with the University of Zaragoza to accredit tests for bovine spongiform encephalopathy) fostered knowledge exchange, and international recognition in the testing of specific diseases across the region.

13. The assistance provided with regards to implementing QMS was highlighted as not being practical enough. For instance, the experience of other participating laboratories in implementing QMS was not effectively leveraged to provide hands-on support during the process. This resulted in extensive staff time spent developing registry systems from a low knowledge base.

14. The lack of ownership for ongoing monitoring at a country level, including the absence of an effective documentation system and centralized database of accreditations, resulted in compliance issues including lapses in accreditations.

15. The continued support of external partners (such as IAEA and the EU who have on-going initiatives in the region) was evidenced as critical for the procurement and maintenance of specialized laboratory equipment to sustain standards. Equipment is rarely costed in national budgets, representing a notable sustainability risk should this external support end.[2]

16. Project results were not systematically and effectively communicated to key ministries such as Ministries of Agriculture, or to regulatory and financial authorities. The link between accreditation and trade statistics could have been better demonstrated to underscore its significance to national interests.

17. The results framework was geared to monitoring the obtaining of accreditations, and was useful in this respect, however it did not effectively measure project impact.

18. The project scope, focused on obtaining accreditations, was seen as too narrow. Greater impact could have been achieved if scope had covered maintaining and expanding accreditations. Other areas included strengthening biosecurity of laboratories and plant based-testing and accreditations,

[2] It was noted that, to the extent possible, governments should also consider and include this budget item in national planning/budget to ensure this is a joint donor and national effort.

19. There was limited evidence of knowledge sharing between STDF and the OIRSA project, for instance, none of the respondents were aware of available STDF products.

1.3 RECOMMENDATIONS:

20. Based on an assessment of the findings and how they reflect on both the project and the STDF's approach to SPS capacity development, the evaluation team identified the following, limited recommendations:

- Secure long-term commitment from a broader range of stakeholders (e.g. ministries of Agriculture, private sector, regulatory and financial authorities) during design and implementation to expand and maintain accreditation standards. This could include establishing agreements around funding at the project approval stage.
- Continue advocating a regional approach and strengthening regional collaboration between laboratories, as well as expanding partnerships with key actors (e.g. IAEA) committed to addressing zoonotic diseases.
- Enhance measurement and communication of project impact (e.g. evidence of increased exports and mitigation of transboundary diseases) to ensure greater buy-in, and generate more partner interest.
- Establish better documentation and a centralized database to monitor and support compliance with accreditation standards.
- Consider expanding scope to plant testing and accreditations in for potential future initiatives given the identified need across the OIRSA region, and the social impact this could yield.

2 PURPOSE & CONTEXT

21. As a component of the Evaluation of the STDF 2020-2024 Strategy, the project evaluation team was tasked by The World Trade Organization (WTO) with the development of three project impact evaluations (PIEs). These were selected from 19 project grants (PGs) that were completed during the in-scope period and were confirmed with the Evaluation Steering Group.[3] The purpose of the PIEs is two-fold: (1) to provide evidence of impact at the project level through detailed evaluation engagement, including in the field, and (2) to support the overall STDF evaluation by providing a base of evidence that included direct engagement with project implementors and beneficiaries.

2.1 SUMMARY OF THE SPS PROBLEM & SOLUTION IMPLEMENTED

22. The project was designed to support nine (9) participating laboratories in the region[4] in implementing Quality Management Systems (QMS) and obtaining relevant accreditations, creating a sub-national network of laboratories with the capability to effectively diagnose and mitigate transboundary diseases, and increasing Sanitary and Phytosanitary (SPS) capacity in the region.[5]

23. As per the proposal the STDF/PG/495 project aligned with STDF objectives in terms of:

- building regional capacity for the enhanced diagnostic zoonotic diseases;
- interrelating animal health with human health under an integrated health approach;
- and facilitating trade by ensuring animal products complied with OIE standards for the diagnosis, surveillance, and certification of sanitary status.

24. At the time of design, there were no internationally recognized accreditations or QMS in place for diagnostic laboratories in the Central American regions. Consequently, samples had to be sent overseas (often to the United States) for testing leading to inefficiencies and high operational costs.

25. The lack of accreditations negatively impacted regional and external trade given lack of confidence in laboratory results, with some markets closed to trade in targeted products.[6] Obtaining ISO 17025 accreditations and implementing QMS therefore became a priority for the region.

[3] The evaluation steering group was drawn, on a volunteer basis, from the STDF Working Group and represented the Working Group's interests in guiding the evaluation.
4 See "Project Beneficiaries," below.
5 The main beneficiaries were official animal health diagnostic laboratories since state institutions are responsible for preserving national health through sanitary measures and the development of disease control programmes. However, in several countries in the region, national legislation recognises that private institutions and qualified professionals can participate in disease diagnosis. In these cases, capacity building also targeted technicians of private laboratories.
[6] Primarily swine, shrimps, poultry, and cattle.

26. As per the project proposal, the project aimed to contribute over a period of ten years[7] to the prevention and control of endemic and transboundary diseases in terrestrial and aquaculture animals as well as access to destination markets for live animals and their products.[8]

27. **Expected results:** The expected results of the project were as follows:

28. **Project goal:** To promote safe trade in animals and their products by improving the credibility of their health status.

29. **Project immediate objective:** To strengthen the capacities of laboratories in the Central American region with the accreditation of laboratory diagnostic tests for transboundary and economically and socially important terrestrial and aquatic diseases.

30. The expected results from the project, including target countries, products and diagnostics are listed below.

TABLE 1: TARGET COUNTRIES, PRODUCTS & RESULTS

Result Nb.	Country	Product	Expected Results
1	Guatemala	swine, shrimps, poultry and cattle	Real-time Polymerase Chain Reaction (PCR) tests for the diagnosis of white spot disease in shrimp and ELISA for Classical Swine Fever virus antigen capture, accredited under ISO 17025 in Guatemala.
2	Belize	shrimps	Real-time Polymerase Chain Reaction (PCR) test for the diagnosis of white spot disease in shrimp, accredited under ISO 17025 in Belize.
3	El Salvador	shrimps, cattle, poultry	Real-time Polymerase Chain Reaction (PCR) tests for the diagnosis of hepatopancreatitis necrotising white spot disease (NHP), infectious hypodermal and haematopoietic necrosis (IHHNV) in shrimp, competitive ELISA for the detection of brucellosis antibodies and Haemagglutination Inhibition (HI) for the detection of Avian Influenza virus, accredited under ISO 17025 in El Salvador.
4	Honduras	shrimps, cattle, poultry	Real-time Polymerase Chain Reaction (PCR) tests for the diagnosis of white spot disease, Rose Bengal for the detection of brucellosis antibodies in cattle, and Haemagglutination Inhibition (HI) for the detection of Newcastle virus, accredited under ISO 17025 in Honduras.
5	Nicaragua	swine, shrimps, shrimp, cattle	Real Time Polymerase Chain Reaction (PCR) tests for the diagnosis of white spot disease, Real Time Polymerase Chain Reaction for the detection of Classical Swine Fever virus, Rose Bengal for the detection of Brucellosis antibodies in cattle, accredited under ISO 17025 in Nicaragua.
6	Panama	shrimps, cattle	Real-time Polymerase Chain Reaction (PCR) tests for the diagnosis of white spot disease and classical swine fever, accredited under ISO 17025 in Panama.

[7] It was noted that, given STDF projects usually span 3 years, this was the hoped long-term repercussions of the project as per the application document.

[8] Through diagnostic tests accredited under ISO/IEC 17025 and complying with the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (mammals, birds and bees) and the OIE Manual of Diagnostic Tests for Aquatic Animals, which allow the quality and veracity of the results to be demonstrated.

7	Dominican Republic	swine, poultry	Real Time Polymerase Chain Reaction (PCR) tests for the detection of Classical Swine Fever virus and Immunodiffusion for the detection of Avian Influenza virus, accredited under ISO 17025 in Dominican Republic.
8	Costa Rica	cattle	Testing of 3 techniques (Rose Bengal, indirect ELISA and competitive ELISA) in the multisite modality (3 regional laboratories Huétar Norte, Chorotega and Bruna) for bovine brucellosis under ISO 17025 in Costa Rica.
9	Regional	all	Twinning of at least one laboratory in the sub-region with an OIE Reference Laboratory that can provide services to the sub-region and creation of a sub-regional laboratory network in coordination with the current National Laboratory Network (NLN) of the Veterinary Services of the Americas to share information and exchange experiences and technical competencies by experts in all laboratories involved in the NLN with OIE Reference Laboratories in the Americas.
10	Regional	all	Test accreditation sustainability mechanism implemented.
11	Regional	all	National laboratory reference system implemented.

2.2 IMPLEMENTATION CONTEXT

31. The livestock sector is economically, socially, and strategically important in the International Regional Organization for Agricultural Health (OIRSA) region. It was estimated to represent up to 50% of the agricultural GDP in some countries at project proposal stage. Subsectors like poultry farming and shrimp aquaculture contributed between 1.6% and 5% to the total GDP and between 8% and 18% to the agricultural GDP. For instance, shrimp farming in Central America experienced a 167% increase in production volume between 2000-2010, reaching 73,198 tons valued at US$ 517 million in 2010.

32. Regional consumption of livestock products is diverse, with a significant portion destined for self-consumption, necessitating imports to meet internal demand for some products. While certain regional livestock production chains export significant quantities, the external trade of livestock products has been growing at nearly 10%, posing risks of disease introduction that could limit animal productivity and endanger human health.

33. Current diseases already cause losses of nearly a billion US dollars annually in the livestock sector, with potential additional losses of US$1.4 billion if exotic diseases were introduced. Various diseases, such as brucellosis in cattle and classical swine fever in pig farming, have significant impacts. Additionally, shrimp aquaculture has faced challenges from diseases like Taura Syndrome and White Spot Syndrome, causing losses exceeding US$200 million and affecting over 80% of the industry. The emergence of new diseases like Infectious Hypodermal and Hematopoietic Necrosis Virus (IHHNV) and Necrotizing White Spot Disease (NHP) poses high risks to both farmed and wild shrimp populations.

34. Accredited laboratory tests are crucial for accurate diagnosis, especially in trade contexts where scientifically unsubstantiated sanitary measures have disrupted regional and international animal and

product trade. The accreditation of laboratory tests under ISO/IEC 17025 is therefore crucial for technical competence and result validity, which in turn has a positive impact on trade facilitation and market growth.

2.3 IMPLEMENTING PARTNER AND INVENTORY OF OTHER STAKEHOLDERS

35. **Implementing partner:** The Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA) was responsible for overall project management, implementation and coordination of the project from 2016 to 2022. OIRSA collaborates closely with the ministerial authorities of its nine (9) signatory countries for the prevention, control, and eradication of pests and diseases. In the field Animal Health, the organization supports regional programs for porcine, bovine, aquaculture, poultry and beekeeping health.

36. The project was overseen by the OIRSA Regional Representation headquartered in El Salvador, with responsibility to implement the action plans for the accreditation of the tests resting with the Managers or Heads of the laboratories in the eight (8) participating countries.[9] Technical implementation was supervised by OIRSA's Regional Laboratory Coordinator (based in Honduras).

37. **Main beneficiaries:** The main project beneficiaries were the participating laboratories in the eight countries, as well the agricultural departments or ministries in each government including:

- Belize: Aquatic Animal Health Laboratory (BAHA).
- Guatemala: Regional Reference Laboratory for Animal Health (LARRSA), University of San Carlos; Official Laboratory for Animal Health (LSA), Ministry of Agriculture and Livestock.
- El Salvador: Veterinary Laboratory Network/ Poultry Diagnostic Laboratory/ Ministry of Agriculture and Livestock.
- Honduras: Honduran Institute of Veterinary Medical Research (IHIMV)/SENASA, Ministry of Agriculture and Livestock.
- Nicaragua: Central Veterinary Diagnostic and Microbiology Laboratory /IPSA (Institute for Agricultural Protection and Health).
- Costa Rica: National Laboratory of Veterinary Services (LANASAVE), SENASA, Ministry of Agriculture and Livestock.
- Panama: Veterinary Diagnostic Laboratory (LADIV), Ministry of Agricultural Development.

[9] Mexico was excluded from the project given its existing capacity in animal diagnostics.

- Dominican Republic: Central Veterinary Laboratory (LAVECEN), Ministry of Agriculture.

38. Governance structure:

- **Technical committees** were established in each country, composed of the Director of Animal Health (or his representative), the manager or head of the animal health laboratory, the OIRSA Representative of that country, representatives of the private laboratories accredited or recognized by the State. These committees met quarterly to track project results at the laboratory level as well as budget.

- **A Project Steering Group** was set up composed of a delegate from the regional offices of the following international organizations: OIE, FAO and PAHO; as well as the OIRSA representation. The Group met bi-annually (once in person in Panama City, to evaluate the corresponding period and establish the work plan for the year, and once virtually, to follow up on activities).

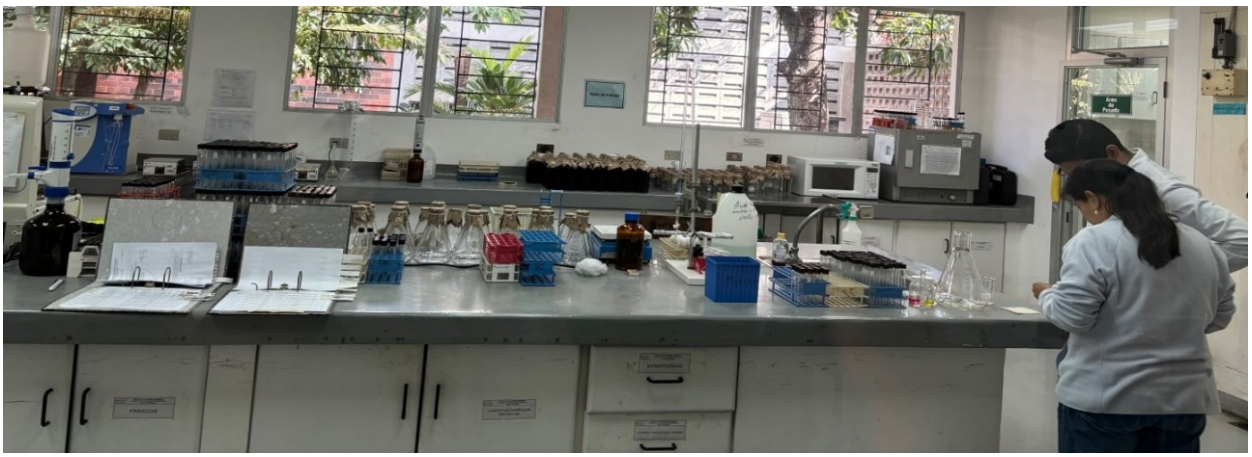

Image: *MAGA Laboratory El Salvador*

3 EVALUATION METHOD & APPROACH

39. The STDF/PG/495 project evaluation was conducted from December 2023 to February 2024. Evidence collection included: a document review; key informant interviews (KII) – conducted both virtually and-in person; field visits to two participating countries; and a web-based survey. The evaluation framework provided questions to guide the conduct of semi-structured interviews with stakeholders. Findings were inputted to an evaluation matrix aligned against the evaluation questions. The evaluation also included examination of impact in terms of the effects on trade and exports based on trade data collected from the UN and the World Bank.

40. The document review and interviews were carried out in Spanish by the Lead Evaluator given this was the main language for project implementation. However, interview transcriptions and the PIE report were drafted in English as per the evaluation contracting requirements.

3.1 DOCUMENT REVIEW

41. A review of all relevant documentation was completed. This included progress reports submitted to STDF during delivery (i.e. application proposal, nine (9) bi-annual progress reports, final report) as well as a number of documents shared by OIRSA and project beneficiaries, including export data. A full list is provided in Annex A.

3.2 KEY INFORMANT INTERVIEWS (KII)

42. Two KIIs were completed virtually with the implementing partner OIRSA ahead of the field visits. These were aimed at discussing main project achievements and constraints, as well as mission logistics.

43. Two of the eight participating countries were selected for the field missions in order to complete in-person KIIs with key beneficiaries, as well as visit the facilities of participating laboratories involved in the project (a total of 3 laboratories were visited). El Salvador was selected since this is where the implementing partner OIRSA and their regional representation team is headquartered. Guatemala was chosen as the second country given this is where the Regional Reference Laboratory - *Laboratorio de Referencia Regional de Sanidad Animal* (LARRSA) is based.

44. The country selection was validated with both the STDF team as well as OIRSA. A third country mission to Costa Rica was proposed as its national laboratory achieved significant results in terms of Brucellosis testing, however, given limited time available, travel was limited to two countries.

45. The field missions took place on:

- El Salvador: 24th – 26th January 2024
- Guatemala: 29th January 2023 – 1st February 2024

46. A total of 13 KIIs were completed during the field visits (see Annex B). In addition, three laboratory installations were visited including the regional reference laboratory LARRSA, and staff in all three laboratories were consulted to provide supporting information on operations and procedures.

3.3 SURVEY

47. A survey was developed using the survey monkey on-line platform to gather information from stakeholders who could not be interviewed in person. The survey included 17 questions. Data collated was in the form of comments and a sliding scale from 1 – 10. In total 10 responses were received from 5 participating countries.[10]

[10] Responses received represent a completion rate of 34% (10/29).

3.4 DATA LIMITATIONS

1. The main limitations were as follows:

- Staff turnover and multiple political changes over the course of the project led to many respondents not having a full view of project implementation.
- Difficulty in obtaining quantitative data to support the assertions of the interviewees. For instance, beneficiaries stated that STDF's support had led to accreditations which in turn positively impacted trade, but they were largely unable to quantify the extent of the impact in terms of empirical data/evidence.
- Given the role of the OIRSA regional team managing communications with STDF centrally, most of the beneficiaries interviewed had limited knowledge of the overall STDF program.
- Answers provided on the e-survey by other participating countries not interviewed generally lacked depth. Therefore, the evaluation was skewed towards results in the field visit countries (i.e. El Salvador and Guatemala) and, to a more limited extent, Honduras where OIRSA's Regional Laboratory Coordinator is based.

4 MAIN FINDINGS

48. The findings are aggregated and presented below by evaluation criteria (based on DAC criteria[11]).

4.1 RELEVANCE

The project was deemed to be relevant, with evidence of alignment with regional and national strategies. These highlighted enhancing laboratory capabilities for testing and addressing zoonotic diseases and accreditation under ISO 17025 as a priority. The approach was developed with input from beneficiary countries (including eight participating authorities and nine laboratories) with target products and accreditations selected by each country. Commitment letters provided by national counterparts to maintain accreditations attested to initial buy-in, however, frequent political changes eroded beneficiary commitment over time.

49. Evidence, both documentary and from beneficiary interviews, shows alignment of project objectives with SPS regional and national priorities and strategies. The project was designed at a time of critical diagnostic credibility issues. A lack of accredited laboratories led to high costs, as countries had to send samples abroad for testing to meet trading partner requirements.

50. Within this context, the Central American Agricultural Policy 2008-2017 highlighted accreditation under ISO 17025 as a regional priority (see context section). This was also reflected in resolutions from the participating Ministers of Agriculture and Livestock (MAGA). The level of demand for testing samples

[11] The standard evaluation criteria laid out by the OECD Development Assistance Committee. See https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm

remains high, and we note this prioritization has carried through to the current Central American Agricultural Policy 2019-2031 (A4.C1).

51. In response, the regional coordinating body OIRSA developed the approach with input from beneficiary countries. A PPG was not required. Nine (9) participating authorities and laboratories were consulted, only one of which (El Salvador) had an existing accreditation or quality management system. Target products and accreditations (see Table 1) were selected by each country based on individual trading priorities, forming the basis of the project results chain (notably results 1 -8).

52. The creation of a sub-regional network of diagnostic laboratories was also integrated into the approach with each laboratory becoming a designated centre of excellence in one or several diagnostics (e.g. Costa Rica in Brucellosis, LARRSA in swine fever). The knowledge sharing approach was further strengthened by the project's twinning component with international reference labs.

53. Each country managed individual workplans, determining priorities and activities throughout execution, as well as providing counterpart funding, with OIRSA responsible for technical oversight. Animal health authorities agreed that the cost of maintaining accreditations be included in the national laboratory budgets, attesting to buy-in. This enabled the project to more than double the number of accreditations from 21 to 46 achieved.

54. While accrediting tests positively impacted livestock exporter associations, beneficiaries felt that these entities (and the private sector) were not sufficiently engaged during design and delivery given the main beneficiaries were participating national laboratories, which was highlighted as a significant risk. Frequent political changes eroded political commitment, including counterpart funding to maintain accreditations, with a number lost as a result (see sustainability section).

55. The intervention has remained relevant over time, with accreditations actively maintained in most cases. This led to participating countries being equipped to effectively respond to sanitary emergencies (e.g African swine fever (ASF) and highly pathogenic avian influenza (HPAI)) using the diagnostics, as well as increased market access (see impact section). However, the feedback from beneficiaries consistently indicated that maintaining the accreditations should have been better factored into the project given funding and political challenges.

4.2 COHERENCE

The project had a unique value to the region; however, the initial design could have been better scaled through broader engagement and commitment from stakeholders (including the private sector, regulatory and financial authorities).[12] *Synergies with partners were consistently and effectively leveraged, with many inter-laboratory exchanges and key relationships with external partners facilitated during*

[12] Notably to ensure the ongoing maintenance of accreditations (see sustainability section).

implementation. A better dissemination of project results could have generated interest from additional partners.

56. The evidence collected suggests that the project was internally and externally coherent, adding value to partner countries and aligning with other SPS interventions in the region. Both the documentation and KIIs highlight that no similar regional project focusing exclusively on accreditations existed, emphasizing its unique value to the region. Honduras noted that this was the first time the national laboratory, established 40 years ago, managed to implement a QMS and accredit diagnostic tests.

57. However, there were some opportunities for it to be better scaled. Beneficiaries highlighted that a communication component around the value of accreditation with the authorities, sector ministries and the private sector could have been integrated into project design.[13] Another area for improvement was a more practical approach to capacity building, with clearer guidance/ manuals on the implementation of QMS and field visits for participating laboratories to accredited laboratories for knowledge sharing.

58. There is clear and consistent documentation that the project effectively leveraged synergies with other partner programmes. STDF aimed to accredit internationally recognized tests to complement the efforts of the Regional Programs for Progressive Control of Brucellosis. The project also aligned with the EU funded Support Program for the Creation of a Regional System of Quality and the Application of Sanitary and Phytosanitary Measures in Central America (PRACAMS), which focused on enhancing sanitary measures, providing technical assistance and equipment to facilitate regional integration (ending in 2016). STDF complemented the efforts by accrediting tests, establishing a reference laboratory, and implementing an external audit program. In addition, the strategic alliances established with Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria (SENASICA) and Centro de Investigación en Alimentación y Desarrollo (CIAD) of Mexico, World Organisation for Animal Health (WOAH) (formally known as OIE) and reference laboratories, aimed to leverage their knowledge and experience in accordance with OIE standards and recommendations.

59. During implementation, many inter-laboratory exchanges took place, including alliances with reference laboratories for each of the diagnostics, notably the twinning of LARRSA with the National Centre for Foreign Animal Disease (NCFAD) in Winnipeg. Collaborations were established with universities, e.g. the University of Zaragoza in Spain on bovine spongiform encephalopathy (which increased significantly during implementation). Two laboratories, one in Nicaragua and the other in Guatemala, accredited these tests. Costa Rica collaborated with VISAVET in Spain, and SENASA in Argentina on brucellosis.

60. Key relationships with external partners were facilitated by STDF, including the IAEA. Various countries faced challenges in procuring equipment necessary for diagnostics. As a result of the STDF collaboration,

[13] Specifically, there was a lack of understanding around the requirements to maintain accreditations within national authorities, and subsequent low prioritization of this activity, which led to the loss of accreditations (see sustainability section).

the IAEA, which is particularly committed to addressing zoonotic diseases, supported laboratories in Guatemala and El Salvador extensively with equipment donations and technical assistance. OIRSA is now exploring avenues to work more broadly with IAEA on strengthening laboratories in the region. Notwithstanding the positive outcomes listed above, it was felt that more could have been done by the project and STDF[14] to better disseminate project results and generate further potential partner interest. Most laboratory equipment is obtained through donor funded projects which also raises a risk in terms of sustainability should these funding sources be discontinued.

4.3 EFFICIENCY

Despite delayed activities in some participating countries and the impact of COVID-19, implementation was efficient overall with the majority of the budget disbursed by project close. Resources were optimized, with funds for activities not implemented reallocated to increase project scope (e.g. achieving more accreditations and strengthening laboratory capacity). Project and reporting deadlines were largely well-respected, with strong and consistent central coordination through the implementing partner.

61. The support to the OIRSA project achieved an overall disbursement rate of 87.5% at project close. The project was part funded (33%) by the beneficiaries i.e. OIRSA and participating countries (of which 21% by the laboratories directly). The expected amount was USD 1,190,520. The total amount disbursed is 1,083,985.30.

62. The choice of implementing agency OIRSA helped increase efficiency during implementation. OIRSA member countries' fees partially financing their $40 million annual budget.[15] This budget supports operations, including outreach encouraging countries to allocate funds to maintain laboratory accreditations.

63. The regional scope of the project meant that implementation of individual country programme progressed at varying rates. Delays were caused by political and staff changes; delays in receiving national counterpart funds (e.g Honduras); the COVID-19 pandemic (see effectiveness section); and delays in audits. Despite these challenges, activities were managed efficiently, and resources optimized.

64. One activity was not implemented,[16] resulting in a reallocation of resources and increased project scope. Specifically, animal health authorities agreed to maintain accreditations through national laboratory budgets; and a planned activity to contract an external consultancy to identify the methodology for the economic sustainability of accreditations was not required.

[14] STDF to consider publishing a story based on the additional results gathered through the evaluation and perhaps support sustainability efforts.
[15] See financial resources p. 12, https://www.oirsa.org/contenido/2018/Constitutional%20Agreement_IN.PDF
[16] This refers to activity number 10, see Table 2 (results achieved).

65. Savings were reallocated to increase accreditations and build laboratory capability. It was also found that accrediting more tests did not represent a significant increase in expenses. In light of this, initial result targets were significantly exceeded within the scope of the original budget (119% increase in accreditations).

66. Project and reporting deadlines were well-respected. A total of four (4) extensions were requested during implementation. These related to a delayed project start, scope increase, and the COVID-19 pandemic. A technical committee was established with relevant authorities from each country which met on a quarterly basis to review workplans and budget. While there was significant staff turnover at the national level (both at participating laboratories and ministries), the strong central coordination and oversight mechanisms from OIRSA headquarters helped mitigate this risk. Staff in charge of administrative matters remained consistent over the course of delivery with the same financial focal point for STDF throughout.

67. Overall, the budget was executed to plan and payments were made on time. At the time of writing, there was only one pending transfer, linked to sign-off of the final report.

4.4 EFFECTIVENESS

Diagnostic capabilities were increased across participating laboratories, with results exceeding initial set targets. The main challenges faced related to COVID-19, political and personnel changes, as well as limited metrology services and the lack of accreditation bodies. The regional scope resulted in uneven pace of implementation amongst participating countries (notably Honduras and Panama). However, accreditations were eventually obtained by all countries across target products, with increased regional SPS capacity evidenced by the expanded processing capacity of participating laboratories. The quality and timing of reporting was largely adequate, but the results framework could have been orientated more effectively towards measuring and assessing impact.

68. Overall, the STDF/PG/495 project has helped all participating laboratories to improve their diagnostic capacity, with results in terms of number of accreditations obtained exceeded. Notably, one of the project activities related to a review of the economic sustainability of the accreditations was not executed given agreement by the animal health authorities to include this in national budgets of the laboratories. This enabled the project to more than double the number of targeted accreditations.

69. The project encountered notable challenges in adapting its operations to the disruptions caused by COVID-19 (see section 4.8). Beyond the impact of COVID-19, a number of other risks were faced related to frequent staff and political changes, as well as limited metrology services and accreditation bodies in some participating countries. Given the regional scope of the project, progress was uneven across the participating countries (there was significant time lag in activities in Honduras and Panama delaying project start). An extension was granted by STDF to account for these delays, and close communication by the implementing partner with relevant authorities unlocked the situation. Risks were formally

discussed quarterly by designated country technical committee and on an ongoing basis via a WhatsApp group.

70. Despite the risks faced, the intervention has been effective overall, especially given the complexity of operating in such diverse often politically volatile environments. The programme MEL framework and results were well aligned with the STDF 2020 -24 strategy, in terms of building SPS capacity and increasing markets access for target products (see table 1). It was noted that OIRSA's Regional Laboratory Coordinator had oversight for monitoring individual workplans to ensure these were results oriented.

71. Of the 11 results, a total of 9 were achieved with targets exceeded (see Table 2 below). While the results framework was useful for monitoring the obtaining of accreditations, it could have been orientated more effectively towards measuring and assessing the changes that the project expected to achieve in terms of impact.[17] More emphasis should have also been placed on sustaining accreditations once achieved.

TABLE 2 RESULTS ACHIEVED

N.b.	Result/ Activity	Completion level	Comments
1 – 8	Real Time Polymerase Chain Reaction (PCR) tests and testing of 3 techniques accredited under ISO 17025 for priority animal and aquaculture diseases across participating countries	Exceeded	Implementation of quality management systems in 8 of the 9 laboratories that participated[18] Accreditation of 21 diagnostic tests initially programmed with 46 tests accredited over 2 phases (19 tests for aquaculture diseases, 20 for terrestrial animal diseases, 7 for poultry diseases)
9	Twinning of at least one laboratory in the sub-region with an OIE Reference Laboratory that can provide services to the sub-region and creation of a sub-regional laboratory network	Completed	Completed through LARRSA set-up as an OIE regional reference laboratory and twinning with University of Winnipeg, as well as disease testing specialization across the region.
10	Test accreditation sustainability mechanism implemented.	Not completed	Procurement of a consultancy to determine methodology for the economic sustainability of the accreditations not executed given agreement by animal health authorities to include this in national budgets of the laboratories
11	National laboratory reference system implemented.	Completed	This has been implemented with the regional reference laboratory LARRSA recognized in the OIRSA region for swine fever. [19]

[17] It was noted that, although the impact indicator mentions an increase in trade of animals and animal products, the source of verification is not linked to trade but rather to certification.

[18] The laboratory in El Salvador had already begun to implement the QMS, so that at the time the project began, the QMS was already in place.

[19] Other laboratories are also considered reference laboratories by the governing body of OIRSA the International Regional Committee on Agricultural Health (CIRSA) (though not officially by WOAH), such as Costa Rica for bovine brucellosis, the laboratories in Nicaragua and the animal health laboratory of the Ministry of Agriculture of Guatemala for bovine spongiform encephalopathy disease.

			In addition, a Regional Animal Health Laboratory Network (RELARSA) was created for all laboratories in Central America and the Caribbean.

72. Some major barriers in obtaining accreditations were faced during implementation, namely the absence of local metrology services in some countries (reported in Belize, Guatemala and the Dominican Republic) and lack of accreditation bodies with international recognition to complete audits (Dominican Republic, Panama, Honduras and Belize). While this slowed progress, it was effectively mitigated through leveraging the regional reach of the project. For instance, an agreement was reached with the Guatemalan Accreditation Office to complete required audits in some of the afore mentioned countries. Frequent staff changes had to be rapidly addressed, notably were they resulted in non-conformity with the accreditation bodies. This was the case in El Salvador where the appointment of non-qualified veterinarians affected accreditation status.

73. Procurement of reagents and supplies, as well as equipment – which was not factored into the project budget, posed an ongoing challenge (for example Nicaragua was not able to complete 3 additional diagnostic tests due to damaged equipment). Financing was secured through external partners (see coherence section). Once obtained, accreditations needed to be maintained through national budgets. Political and personnel changes hampered sustainability (see sustainability section).

74. Despite these challenges, the evidence supports that throughout the project, the participating governments and main laboratories have been effectively upskilled, and the accreditations obtained confirm increased regional SPS capacity and compliance with international standards developed by the OIE on animal health. For instance, the processing capacity of participating laboratories expanded exponentially. Pre-project many stakeholders preferred utilizing private laboratories (or sending samples abroad) for monitoring, but this changed as a result of the support. LARRSA saw a substantial increase in the number of samples received, rising from approx. 200,000-300,000 to 500,000 annually.

4.5 IMPACT

The evidence suggests that increased diagnostic capacity of the regional laboratory network and credibility of the tests has had a positive impact on target product exports, both within the region and externally. Countries saw growth in key markets such as shrimp and cattle, with international markets opening or re-opening since project launch. Additionally, regional ability to rapidly prevent and control endemic and transboundary diseases increased. Positive social impact was highlighted as a result of growth of the livestock industry. Gender and environment were not adequately integrated into the project.

75. There is some indication of growth in product trade for supported countries in the region, and KII statements support the fact that markets opening (or re-opening) was directly related to compliance with

international standards. However, the evidence is mixed and a direct correlation between growth in trade of supported commodities and accreditations is difficult to substantiate, both in the documentation and KIIs. The project aimed to promote the export of animal products with the most potential to generate economic income for the countries. Priority was given to shrimp exports in Belize, Guatemala, Honduras, Nicaragua, Costa Rica and Panama; cattle exports in Costa Rica, Belize and Nicaragua, and animal by-products in the case of El Salvador and the Dominican Republic.

76. In terms of context, trade data of the supported commodities suggests that trade increased overall since 2019 by an average of 16.7% across the region with the most notable increases in Honduras (61%) and Guatemala (40%). However, exports in some countries dropped including the Dominican Republic (-12.9%) and most dramatically Panama (-65.1%).

77. In the shrimp sector, sales in Central America demonstrated moderate growth, reaching a value of $378 million in 2022 (Central America Data), with Honduras emerging as a dominant exporter, particularly to Taiwan representing $166 million equivalent to 44% of total sales (data from the Organization of the Fisheries and Aquaculture Sector of the Central American Isthmus -OSPESCA).

78. Honduras also re-opened markets for Canada and Chile for farmed shrimp closed between 2020 - 22, securing a market value of $66 million in 2023. Honduras' proactive measures prevented a potential market closure in Mexico by demonstrating the absence of a suspected disease through accredited tests, and the market reopened successfully in 2023 (generating $67 million in 2023).[20] Guatemala opened the shrimp market with Belize.

79. Evidence shows that exports in the livestock industry have also increased since the project launched. The poultry sector reportedly grew at a rate of 16.9% between 2015 – 19 (vs growth in Latin America and the Caribbean at 3.84% over the same period) generating U$3,700 million in 2021 (Central America Data). In terms of individual countries, Guatemala has made significant strides in cattle exports to Mexico. Cattle exports to the US which ceased in the 1970 are being resumed with protocols currently being developed as reported by a project respondent. El Salvador exported US$6,049 million in poultry, representing 1% of GDP (Central Reserve Bank of El Salvador data) with the opening of the market with Honduras, a 11.4% increase compared to the US$1,030.3 million recorded in December 2021 (Honduras Customs Administration statistics data).

80. In addition to market growth, the project increased regional ability to rapidly prevent and control endemic and transboundary diseases. It was reported that in 2023, Honduras was able to provide immediate attention to cases of highly pathogenic avian influenza (HPAI) detected in migratory waterfowl, through rapid and effective diagnoses. The Dominican Republic has also been able to mitigate against cases of HPAI and African Swine Fever (ASF). Poverty impact was not explicitly addressed in the project

[20] These results were highlighted as linked to increased diagnostic capacity in Honduras in the final project report, and mentioned in the KIIs.

documentation or KIIs but assumed to be a by-product of increased exports and growth. The poultry sector is estimated to employ more than 300,000 people in the region (Central American Data). For instance, a quarantine center was established in Peten, Guatemala due to an increase in the livestock industry which created numerous jobs, as reported by a respondent.

81. Though the data needs to be weighed against high export growth in the region, the evidence suggests that increased diagnostic capacity of the regional laboratory network and credibility of the tests, has had a positive impact on target product exports, both within the region and externally. The surge in shrimp exports (notably in Honduras as above) demonstrates the region's competitiveness in the global market, and the risk posed by market closures underscores the importance of maintaining accreditations to safeguard trade relationships.

82. Gender and environment were not adequately integrated into the project.[21] The project only reported on representation of women in the management of the project and participation of women in project activities. For instance, a number of women reportedly occupied management positions in participating laboratories (including Director positions at LARSSA, and national laboratories in Guatemala and El Salvador visited by the evaluator). There were no examples of positive outcomes related to the environment.

4.6 SUSTAINABILITY

Sustainability was considered during project design with firm commitment originally provided by participating authorities.[22] *While accreditations have been largely maintained, changes in leadership and personnel within laboratories have presented significant capacity challenges leading to the loss of accreditations in some countries. This has been compounded by a lack of prioritization and resources to sustain the ongoing cost of required audits, supplies and equipment. The creation of a sub-regional network of laboratories has led to notable sustainability wins, contributing to continued knowledge sharing in the region.*

83. Sustainability was considered during project design and execution. The project envisaged a consultancy to identify the methodology for the sustainability of accreditations (Result 10). However, this activity was not implemented as OIRSA took on this process directly with funds reallocated to increasing the number of diagnostic tests accredited instead.

[21] Crosscutting issues Gender and Environment were not a main part of the project.

[22] In light of this, the planned economic sustainability assessment was dropped from the project scope. Given the initial commitment to maintain accreditations was not effectively carried through resulting in the eventual loss of some accreditations, it may have been beneficial for the planned economic sustainability assessment (Result 10) to have taken place. We note, however, that this would have been at the expense of the substantial additional accreditations obtained through this cost saving.

84. Overall, accreditations have been maintained, and government commitment has been positively correlated with positive outcomes from the accreditations. Documentary evidence points to increased government support for the laboratories in terms of budget, equipment, infrastructure, supplies, and personnel (Costa Rica, Honduras, Panama and Guatemala are specifically referenced). However, beneficiaries consistently raised significant concerns around this.

85. To ensure sustainability, a letter of commitment confirming that the maintenance of accreditations would be budgeted nationally was requested and provided by each country. However, changes in leadership (for instance at least four Ministries in El Salvador reportedly changed leadership during delivery) and resource constraints affected the commitment and project continuity. Beneficiaries, especially at the political level and among higher management, consistently reported a lack of awareness about the importance or requirements for sustaining accreditation. This lack of awareness presented significant challenges for the continued funding of laboratories.

86. Being clearly able to demonstrate the statistical impact of accreditation on exports and trade growth was highlighted by beneficiaries as crucial for continued support and sustaining results, however this data was not systematically collected by the implementing partner, and the evidence chain is weak. National budgets for accreditations are reviewed on a yearly basis, and prioritization is low. In light of this, laboratories often lack resources for supplies, equipment, and to complete required audits posing a serious risk to sustained results.

87. As mentioned, most equipment is procured via donor funded programmes. In some instances, OIRSA had to allocate its own budget to sustain accreditation standards, and help laboratories in their communications with governments to secure funding. The exception is LARRSA, in Guatemala. Given their status as a university laboratory, they charge for testing (albeit at lower rates than private laboratories), in addition to receiving $25,000 annually from OIRSA given their status as a regional reference laboratory, and consequently have an alternative revenue source to support their operations

88. Political and personnel changes have mired sustainability of results. A significant risk relates to the fact that some countries (e.g. El Salvador) only trained one person per area of accreditation.[23] Staff turnover therefore resulted in some accreditations for shrimp being lost. Efforts are ongoing to train and involve more technicians (minimum 2 technicians per area) to mitigate the impact of staff turnover and ensure sustainability. This was the case for the Newcastle accreditation which is still valid.

89. In Guatemala, political problems and protests at the University of San Carlos de Guatemala (USAC), where LARRSA is based led to USAC being closed for an extended period of time (2022 – 2023). During this time audits were not possible, and all accreditations are currently suspended. Audits will resume in 2024 reinstating the accreditations. However, the risk remains. These barriers could have been mitigated

[23] The project did not use the remaining budget to train additional people during implementation as this was not considered as required during delivery and only became an issue over time with staff turnover.

through a requirement for countries to train a minimum of 2 staff (and - budget permitting - more) per diagnostic, and a more robust political risk analysis in the selection of laboratories – notably when related to the chosen regional reference lab.

90. Notwithstanding the above, most accreditations obtained under the project are still actively maintained. In addition to government commitment, producers' and exporters' associations have also been reported as providing financing for sustaining accreditations, including pooling funds to procure necessary equipment or supplies for testing, notably in stronger sectors such as poultry (mentioned in both Guatemala and El Salvador).

91. The regional approach and creation of a sub-regional network of labs has also led to notable sustainability wins, and continued knowledge sharing in the region. For instance, LARRSA is today listed as a laboratory of reference for the diagnosis of classical swine fever for member countries of the OIRSA Region, which analyses suspicious samples submitted by laboratories in other OIRSA member countries.

4.7 UNANTICIPATED RESULTS

Unanticipated results were largely limited to a participating laboratory supporting other national departments implementing QMS. Facilities were repurposed to support COVID-19 testing as a result of the pandemic.

92. There is relatively limited evidence of unanticipated results given the clarity of the project objectives and focus. In one case, following accreditation, a participating laboratory reportedly supported other departments (including plant health) to develop their own QMS, as well as creating an evaluation guide for private laboratories to align with national requirements. In this way, institutions not directly participating in the project benefitted from the capacity building.

93. Laboratory capacity to engage in COVID-19 testing also resulted from the pandemic (see further discussion in Section 4.8).

4.8 OTHER

COVID-19 had a significant impact with facilities repurposed for COVID-19 diagnostics, and delays in audits and vital laboratory deliveries. However, a flexible management approach meant audits were eventually conducted in-house resulting in cost savings.

94. The pandemic significantly impacted laboratory operations across the region, with facilities in Guatemala, Honduras, and the Dominican Republic repurposed for COVID-19 diagnostic services, temporarily suspending routine tests and accreditation processes, and redirecting resources and personnel to support pandemic response efforts. Face to face face-to-face training had to be postponed which in the case of LARRSA significantly delayed the establishment of the NPLA assay. In many cases, audits could not take place as accrediting bodies suspended laboratory visits due to travel restrictions. The twinning of the

regional reference laboratory LARRSA with the University of Winnipeg had to be postponed. Finally, there were delays in vital deliveries from suppliers (e.g. kits).

95. Despite these challenges the laboratories continued to function, and strategies to mitigate the impact of the pandemic actually benefitted the programme in the long term. For instance, audits were conducted in-house which allowed for cost-savings on the programme. A considerable number of tests were accredited in-country by Panama using this approach.

5 LESSONS

96. There was limited involvement of the private sector, including producers' and exporters' associations, both during project design and implementation. This affected buy-in and ongoing government funding, notably in terms of sourcing vital equipment and audits necessary to sustain accreditation.

97. The regional and twinning approach proved highly effective for disease specialization. Collaborations (e.g. with the University of Zaragoza to accredit tests for bovine spongiform encephalopathy) fostered knowledge exchange, and international recognition in the testing of specific diseases across the region.

98. The assistance provided with regards to implementing QMS was highlighted as not being practical enough. For instance, the experience of other participating laboratories in implementing QMS was not effectively leveraged to provide hands-on support during the process. This resulted in extensive staff time spent developing registry systems from a low knowledge base.

99. The lack of ownership for ongoing monitoring at a country level, including the absence of an effective documentation system and centralized database of accreditations, resulted in compliance issues including lapses in accreditations.

100. The continued support of external partners (such as IAEA and the EU who have on-going initiatives in the region) was evidenced as critical for the procurement and maintenance of specialized laboratory equipment to sustain standards.[24] Equipment is rarely costed in national budgets, representing a notable sustainability risk should this external support end.[25]

101. Project results were not systematically and effectively communicated to key ministries such as Ministries of Agriculture, or to regulatory and financial authorities. The link between accreditation and trade statistics could have been better demonstrated to underscore its significance to national interests.

102. The results framework was geared to monitoring the obtaining of accreditations, and was useful in this respect, however it did not effectively measure project impact.

[24] As per STDF's operational rules, only small equipment can be funded.
[25] It was noted that, to the extent possible, governments should also consider and include this budget item in national planning/budget to ensure this is a joint donor and national effort.

103. The project scope, focused on obtaining accreditations, was seen as too narrow. Greater impact could have been achieved if scope had covered maintaining and expanding accreditations. Other areas included strengthening biosecurity of laboratories and plant based-testing and accreditations.

104. There was limited evidence of knowledge sharing between STDF and the OIRSA project, for instance, none of the respondents were aware of available STDF products.

6 RECOMMENDATIONS

105. Recommendations are listed in order of priority and are oriented toward potential future phases of work and/or are generalizable for STDF investments elsewhere.

#	Action	Timing	Responsible Party
1	Secure long-term commitment from a broader range of stakeholders (e.g. ministries of Agriculture, private sector, regulatory and financial authorities) during design and implementation to expand and maintain accreditation standards. This could include establishing agreements around funding at the project approval stage.	Long term	STDF
2	Continue advocating a regional approach and strengthening regional collaboration between laboratories, as well as expanding partnerships with key actors (e.g. IAEA) committed to addressing zoonotic diseases	Potential Future Phase	STDF/ OIRSA
3	Enhance measurement and communication of project impact (e.g. evidence of increased exports and mitigation of transboundary diseases) to ensure greater buy-in, and generate more partner interest	Medium term	STDF
4	Establish better documentation and a centralized database to monitor and support compliance with accreditation standards	Potential Future Phase	STDF/ OIRSA/ Participating countries
5	Consider expanding scope to plant testing in future given the identified need	Potential Future Phase	STDF

ANNEX A: DOCUMENT LIST

#	Document Title
Project Documents	
1.	Final Project Application
2.	Informe Taller de Lanzamiento del Proyecto Regional de Acreditación de Pruebas en Laboratorios de Diagnóstico de Sanidad Animal (Stdf/Pg/495)
3.	Convenio: Hermanamiento con el National Centre for Foreign Animal Disease NCFAD Winnipeg, Canada, con el Laboratiorio de Referencia Regional de Sanidad Animal (LARRSA)
4.	COVID Risk Review
5.	Solicitudes cambios de pruebas, Resumen de pruebas
6.	Reporting Schedules
7.	Contract & Budget Documents
8.	Progress Reports 1 – 9
9.	Final Report
Other	
10.	Agricultural Policy for the SICA Region 2019-2030, Inter-American Institute for Cooperation on Agriculture (IICA) 2019
11.	Central American Agricultural Policy 2008-2017
12.	Data: Central American Data, Organization of the Fisheries and Aquaculture Sector of the Central American Isthmus -OSPESCA (various)
13.	Exportaciones de camarón de Honduras (datos de la Asociación Nacional de Acuicultores de Honduras ANDAH)
14.	Exportaciones de Guatemala a México (datos brindados por el Laboratorio de Salud Animal del Ministerio de Agricultura y Ganadería de Guatemala)
15.	Exportaciones de Nicaragua a Honduras (datos brindados por el Servicio de protección Agropecuaria SEPA / Secretaria de Agricultura y Ganadería de Honduras)
16.	OIRSA – Plan Estratégico 2015 – 2025, San Salvador (2014)
17.	OIRSA - Constitutional Agreement San Salvador (2017)
18.	Williams, G.W. and D.P. Anderson. 2019. "The Latin American Livestock Industry: Growth and Challenges." Choices. Quarter 4

ANNEX B: STAKEHOLDER LIST (IN PERSON KII)[26]

#	Name, role, department, organization	Country
1	Ms Marcela Marchelli de Peraza, OIRSA Regional Representation	El Salvador
2	Abelardo De Gracia Scanapieco, OIRSA Regional Representation	El Salvador
3	Dr. Guillermo Cruz Henriquez	Honduras
4	Dr. Monica Vides, Director, Network of Veterinary Laboratories/ Poultry Diagnostic Laboratory/ MAGA	El Salvador
5	Dr. Alex Michell Hasbun Gadala Maria, Representative OIRSA El Salvador	El Salvador
6	Dr. Karina Maza, Animal Health Officer, Representation OIRSA El Salvador	El Salvador
7	Dr Ronal Bernal, Regional Bovine Health Program Coordinator, Representation OIRSA El Salvador	El Salvador
8	Dr. Nidia Sandoval de España, Representative OIRSA Guatemala	Guatemala
9	Dr. Herber Ronaldo Morales Estévez, Animal Health Officer, OIRSA Guatemala	Guatemala
10	Lic. Vanessa Salazar, Director, Animal Health laboratory, Ministry of Agriculture, Livestock and Food -MAGA	Guatemala
11	Dr. Eduardo Martinez, Head of Epidemiological Surveillance and Risk Analysis, Ministry of Agriculture, Livestock and Food -MAGA	Guatemala
12	Dr. Mayra Motta, Director, LARRSA	Guatemala
13	Víctor Hugo Guzmán, Former Deputy Minister of Agriculture of Guatemala, Ministry of Agriculture, Livestock and Food -MAGA	Guatemala

[26] This list excludes technicians of national laboratories consulted during visits.

ANNEX C: GRANT APPLICATION (EXTRACT)

Título del proyecto	**PROYECTO REGIONAL DE ACREDITACION DE PRUEBAS EN LABORATORIOS DE DIAGNOSTICO DE SANIDAD ANIMAL**
Objetivo	1. Superior: Promover el comercio seguro de animales y sus productos mejorando la credibilidad de su condición sanitaria. 2. Del proyecto: Fortalecer la capacidad de los laboratorios de diagnóstico de enfermedades trasfronterizas y de importancia económica y social, tanto terrestres como acuáticas.
Presupuesto solicitado al STDF	US $ 840,898
Presupuesto total del proyecto	US $ 1,190,520
Nombre completo y detalles de contacto de la organización u organizaciones solicitantes	Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA) Calle Ramón Belloso, Final Pasaje Isolde. Colonia Escalón San Salvador, El Salvador PBX: (503)2263-1123 Email: oirsa@oirsa.org
Nombre completo y detalles de contacto de las personas pertinentes a efectos del seguimiento	Luis Alberto Espinoza Rodezno; Director Regional de Salud Animal del OIRSA: lespinoza@oirsa.org Guillermo Enrique Cruz Henriquez; Coordinador Regional de Fortalecimiento de Laboratorios de Sanidad Animal: gcruz@oirsa.org Octavio Javier Angel Carranza de Mendoza; Director Técnico del OIRSA y Delegado del OIRSA ante OMC: ocarranza@oirsa.org