

Project Evaluation Series

# Evaluation of the project “International Alliance on Climate Smart Agriculture”

Project code: GCP/GLO/534/ITA

**Annex 1. Evaluation of integrated traditional practices for climate smart agriculture into crop and livestock production systems in Ghanzi district, Boteti and Bobirwa subdistricts, Botswana**

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## **Abbreviations and acronyms**

BITRI	Botswana Institute for Technology Research and Innovation
BUAN	Botswana University of Agriculture and Natural Resources
FAO	Food and Agriculture Organization of the United Nations
IACSA	International Alliance on Climate Smart Agriculture
ISPAAD	Support Programme for Arable Agriculture Development
LIMID	Livestock Management and Infrastructure Development

# 1. Introduction

## 1.1 Purpose of the evaluation

1. This document presents the report of the evaluation of the project "Integrated traditional practices for climate smart agriculture (CSA) into crop and livestock productions systems". This was a pilot project of the global project<sup>1</sup> GCP/GLO/534/ITA "International Alliance on Climate-Smart Agriculture" (hereafter "IACSA" or "the project") (FAO, 2021c).
2. The pilot project was implemented between 2019 and 2021. The country project received full funding from the Italian Ministry of Ecological Transition through IACSA. It is implemented by the Food and Agriculture Organization of the United Nations (FAO), in close collaboration with the Ministry of Agricultural Development and Food Security in Botswana. The project in Botswana aimed to achieve the following objectives:
  - i. take stock of indigenous knowledge practices and existing CSA technologies, practices and approaches based on the different farming systems and agroecological zones of Botswana;
  - ii. conduct awareness-raising workshops for policy and decision makers (at national and district levels), civil society organizations, the private sector and development partners on adoption of indigenous practices and CSA best practices;
  - iii. develop indigenous and CSA best practice guidelines;
  - iv. enhance subregional learning and sharing of experiences at the sub-regional level; and
  - v. develop CSA and traditional agriculture guidelines on best practices.
3. The evaluation served a double purpose of accountability and learning (improvement and enlightenment). It assessed project results, their relevance for targeted beneficiaries, national needs and priorities. It also documented important lessons for potential scaling, replication or follow-up projects in the CSA sector. To this end, the evaluation assessed i) the performance of the project, ii) its results, their sustainability and transformational changes occurred in the enabling environment for CSA, and iii) shortcomings as well as good practices of project implementation.

## 1.2 Methodology

4. For the overall methodology, see the methodology section of the full report. In Botswana, the evaluation team interviewed key stakeholders at FAO, partner agencies and beneficiary farmers in Gantsi district, Boteti and Bobirwa subdistricts, where the project was implemented. The site visits were conducted from 29 May to 4 June 2022. Focus group discussions were conducted with farmers in Gantsi district, Boteti and Bobirwa subdistricts.

## 1.3 Limitations

5. The overall limitations of the evaluation are presented in the main IACSA evaluation report.

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<sup>1</sup> In several occasions, the IACSA project is referred to as a program and in fact, it has many aspects of a program (long term execution with emerging, additional outputs and increasing budget, nested project within overall scope). However, it has been administratively managed as a project and therefore will be referred to as a project.

6. The projects sites are located in three different districts with long distances in between. The data and observations are based on a representative selection. This selection of respondents and the sites visited was based on an agreed plan with the project coordinator, the FAO office in Botswana and district officers in the three districts. At the time of the field work, no COVID-19-related travel restrictions were in place.
  
7. A specific limitation for this evaluation was that the evaluation team did not access the final project document for the Botswana pilot project. Requests for a copy of this document were sent to the IACSA project team and to the FAO office in Botswana, but only an early and incomplete draft was received. This seriously limited the assessment of the quality of project design and of aspects such as the planned implementation arrangements, stakeholder involvement, itemized budget and monitoring/reporting for this pilot project. The early draft did include a complete results framework so the pilot project could be assessed against planned outputs and outcomes. The evaluation team then consulted other documents relevant to the project such as the early version of the Botswana project document (ProDoc) and the draft result chain document and budget, which were requested from FAO personnel. Another document consulted explained the implementation of the IACSA project which includes a discussion of the Botswana country project (FAO, 2021a).

## 2. Background and context of the project

### 2.1 Context of the project

8. Agriculture plays an important role in the economy of Botswana in terms of contribution to the country's gross domestic product (GDP) and is the main source of livelihood for many people in the rural areas of Botswana. However, the importance of agriculture contribution to GDP declined from 40 percent at independence in 1966 to around 3 percent to date (Statistics Botswana, 2020). Although the discovery of diamonds in the early 1970's played a role in eclipsing agriculture, climate change has played a significant role in the decline of agricultural productivity. Persistent droughts, erratic rainfall and increasing temperatures have all been the indicators of the changing climate in the region. The location of Botswana, which is approximately 1 000 m above sea level and is largely arid and semi-arid due to its position in the dry Kgalagadi ecosystem and its proximity to the sub-tropical high-pressure belt, was also a contributing factor (Wilson, 2000).
9. The livestock sub-sector plays a significant role within the agricultural sector as it contributes 80 percent to the sector's GDP. This is influenced by the lucrative European beef market acting as an incentive for improved beef production markets. The recent promotion of small stock in Botswana by His Excellency the president in preparation for the anticipated overseas markets is also testimony to importance of the agricultural sector to the country's economy and the rural livelihoods. These efforts will also contribute to poverty alleviation which is high in rural areas compared to urban areas albeit still high in the country (Statistics Botswana, 2015). Despite efforts to promote agriculture, which provides food, employment and raw materials to other sectors, the efforts livestock populations have been decreasing over the years from 2 154 820 cattle and 1 550 337 goats in 2004 to 1 744 166 cattle and 1 205 238 goats in 2015 (Statistics Botswana, 2018). The same decline was observed for sheep during the same period. The total number of holdings also decreased for cattle, goats and sheep between the period 2004 and 2015. The climate change incidence has been increasingly visible over the years as evidenced by the increasing intensity of the El Niño occurrences. The increase in the measure of climate change is more noticeable between the years 1997 and 2016 where the Oceanic Niño Index was close to 2.0 and was consistently above 1.0 in between the period.
10. Traditional agriculture in Botswana faces challenges of climate change as noted above which has brought in increased incidents of drought countrywide. Unfortunately, irrigation which could alleviate the impact of drought for most farmers in communal land areas, is unattainable due to lack of resources. The existing agricultural programs that are targeted to assist low-income subsistence rural farmers do not meet their intended results of increasing agricultural productivity for the farmers due to changing climatic conditions. Two of these programs are notable: Livestock Management and Infrastructure Development (LIMID) and Integrated Support Programme for Arable Agriculture Development (ISPAAD) which were developed to cushion farmers against poverty and lead to food security (NDP 11). LIMID objectives are to promote food security improve livestock management; improve range resource utilization and conservation; eradicate poverty; and provide infrastructure for safe and hygienic processing of poultry (meat). ISPAAD aimed at providing farmers with draught power portable water, fencing facilitation of credit access seeds, fertilizers and herbicides. These were intended to increase food security. However, the Minister of Agricultural Development and Food Security, Mr. Karabo Gare (Dikuelo, 2021) observed that over the years the program has made returns on investment as the government usually received outputs averaging 47 percent of investment. In addition, the food security situation in the country has not improved evidenced by the still low productivity and high import bill.

11. Institutional and financial challenges have also confronted the agriculture sector in Botswana over the years. At institutional level, the sector has two types of farmers: commercial and subsistence farmers who operate at different levels of skills set and productivity goals. While the subsistence farmers are mainly engaged in rain-fed agriculture with increased risk of crop and livestock failure due to regular drought occurrence, commercial farmers practice elements of irrigation which are also constrained by insufficient water supply due to the general water insecurity in the country. Access to credit is motivated by goals and business nature of the farming enterprise further increased by the business acumen of the farmer. It is generally the commercial farmers who then access credit and markets while the poor mostly subsistence farmers have limited access to markets and other services (FAO, 2015) given their operations' sizes operating at economies of scale with increased probability of breaking even. The reverse is true for subsistence farmers who operate risk enterprises with increased probability of failure given their lower skills set and low business acumen.
12. This scenario offers differentiated access to financial institutions with more choices for the commercial farmers such as commercial banks, National Development Bank (NDB) etc. whereas subsistence farmers will face fewer choices mostly government subsidies. The array of institutions available to provide credit for agriculture, offer another cushion against climate change which as indicated above is unequally accessible. It is therefore necessary that access to credit becomes an important factor to be considered in the promotion of CSA for the sustainability of the sector.
13. The pilot project had a total budget of USD 496 100 and was planned to be executed for 14 months, from 5 November 2019 to 31 December 2020. The project started in December 2020 in Gantsi district and in February 2021 in Boteti and Bobirwa subdistricts. Its planned impact statement was aligned to the Country Programming Framework (CPF).
14. The project's results framework (taken from the early draft ProDoc and a project progress report) includes one outcome and three outputs, each with its indicator, means of verification and assumptions (Table 1). Eleven activities are stated in the project logframe operational plan.

**Table 1. Logical framework matrix**

Results chain	Indicators	Means of verification
Outcome: National institutional and technical capacities to adopt a CSA approach for a sustainable development of crop and livestock production systems developed and/or strengthened		
Output 1: CSA options for improved crop and livestock production systems identified, based on the integration of indigenous practices and innovative technologies/practices	<ul style="list-style-type: none"> <li>• Number of awareness workshops conducted</li> <li>• Number of participants by gender attending workshops</li> <li>• Community focused groups on indigenous and CSA practices with participation of at least 100 indigenous communities, farmers, and livestock keepers at the grassroots</li> <li>• Diversity of organisations/actors represented at the workshops</li> <li>• At least 3 crop and 3 livestock indigenous practices related to CSA identified and characterised within first six months</li> </ul>	<ul style="list-style-type: none"> <li>• Baseline survey report</li> <li>• Workshop reports/minutes</li> <li>• Attendance lists with details of participants</li> <li>• Minutes of the community focus groups on indigenous and CSA practices</li> </ul>
Output 2: Capacity for innovative research and extension approaches and training to enhance integration of CSA and indigenous practices into crop	<ul style="list-style-type: none"> <li>• Training CSA manual and other training materials and tools developed</li> <li>• Three training workshops with at least 100 technical experts and frontline extension workers (drawn from national and districts and including women participants); 500 indigenous communities, farmers and livestock keepers of which 30% being women and a further 30% being youth trained</li> <li>• At least three Local development committees trained in CSA practices and climate change</li> </ul>	<ul style="list-style-type: none"> <li>• CSA guidelines</li> <li>• CSA manual for farmers</li> <li>• CSA manual for extension</li> <li>• Workshop reports</li> <li>• Training reports</li> <li>• Lists of workshop participants</li> </ul>
Output 3: Successful integrated CSA practices and innovations, and case studies, for prioritized value chains documented and shared with policymakers and diverse stakeholders	<ul style="list-style-type: none"> <li>• Policy briefs on CSA practices and lessons prepared and disseminated to relevant actors by the end of the project</li> <li>• Compendium of Indigenous and CSA best practices shared with national extension, private sector and non-state development actors in the agricultural sector</li> <li>• Video showcasing application of innovative CSA practices in crop and livestock production systems in Botswana</li> </ul>	<ul style="list-style-type: none"> <li>• Policy brief</li> <li>• Compendium of Indigenous and CSA best practices</li> <li>• Video on integrated CSA practices in Botswana</li> </ul>

Source: Elaborated by the evaluation team.



### 3. Findings

#### 3.1 Relevance

*EQ 1: Has there been any change in the relevance of the project during its implementation that affects the relevance of the project objectives and goals?*

*EQ 1.1: Have changes in international/national policies, public plans or societal developments changed the context of the implementation of the project?*

**Finding 1.** The IASCA project is relevant to Botswana and was aligned with several government initiatives and policies.

15. The project has brought several agencies together and has improved institutional collaboration. FAO, as the funding agency, contracted the Botswana University of Agriculture and Natural Resources (BUAN) for training. The Botswana Institute for Technology Research and Innovation (BITRI) coordinated the project design and also developed the CSA manual which is still at printing stage. The Department of Agricultural Research supplied the technologies such as seeds to the farmers. The Ministry of Agricultural Development and Food Security provided the extension staff who assisted the farmers with the implementation of project components. This institutional collaboration is important to the project because each agency played a different yet significant role from the beginning and these roles are still relevant.
16. LIMID and ISPAAD are two programmes that were developed by the government to help alleviate poverty and lead to food security (NDP 11; see section on context of the project). IACSA complemented these two programs by assisting farmers with other innovations such as fodder production, provision of drought tolerant seed varieties like soya beans, vermicompost which increases soil fertility.

*EQ 1.2: Have new insights, paradigms or the availability of new technologies in the area of CSA or climate action overall, affected the relevance of project objectives and goals?*

**Finding 2.** During the implementation of the project in 2021, the Government of Botswana passed the Climate Change Policy, which enhances the importance of CSA.

17. The Government of Botswana prioritizes food security as a policy objective and thus adopts a holistic approach to planning by integrating all elements that impact on food security attainment. During the implementation of the project in 2021, the Government of Botswana passed the Climate Change Policy which will provide a conducive environment for CSA. IACSA aligns well with this policy by promoting CSA. Climate change and sustainable development are intertwined with achieving food security. This has prompted some non-governmental organizations (NGOs) like SAVE Wildlife Conservation Fund which has taken the initiative to float an advert in its social media page, calling for community-based organizations' proposals for CSA funding (Letsholo, 2022). This is evidence of the relevance of CSA in the country of which FAO has been a leading global advocate. FAO' pioneering work on CSA dates back to 2010 and has since influenced global thinking on global smart agriculture (FAO, 2021c).

*EQ 2: Was the project design appropriate for delivering the expected outcomes and set goals?*

*EQ 2.1: How was the internal coherence of the project in terms of synergies and complementarity between objectives, components, activities and outputs?*

*EQ 2.2: Did the project design consider all necessary inputs for effective delivery, in terms of budget, human resources, time and monitoring/reporting arrangement?*

18. The evaluation team could not access a final project document so project design cannot be assessed.

## **3.2 Effectiveness**

*EQ 3: To what extent has the project contributed to the achievement of stated outputs and outcomes?*

**Finding 3.** The project has contributed to the outcome and the outputs by having direct influence on extension workers through the training that was carried out. The initial collaborative effort of the pilot project with relevant stakeholders at project inception has created a sense of ownership as it allowed different stakeholders to contribute to the project. In addition, the farmers were sensitized about CSA and were allowed to select CSA activities in line with their interests and knowledge. The project was then able to influence adoption of CSA practices by farmers. After the implementation of the CSA activities the farmers as deemed ready to embrace CSA activities in their farming systems.

19. The Botswana CSA project achieved some of its planned activities and achieved some results like the adoption of CSA practices by farmers. In Gantsi district, the following CSA activities were planned:
- i. Vermicomposting: one farmer who had successfully implemented vermicomposting started to sell vermicompost fertilizer to several farmers mostly in Gaborone. During the interview the farmer also stated that he has several large-scale agricultural producers who need him to supply them with the fertilizer. The successful implementation of the CSA vermicompost activity has now influenced the farmer to plan to expand his operations in order to satisfy the growing vermicompost market.
  - ii. Soya beans: this component of the project was not successful because the soya bean seeds could not germinate due to the fact that the seeds were not inoculated.
  - iii. Beekeeping: boxes were provided but the project was not successful because there were no colonies available from the Ministry of Agricultural Development and Food Security at the time the boxes were provided. The Ministry of Agricultural Development and Food Security plans to provide farmers with the colonies as soon as they are available.
  - iv. Napier grass: the component was successfully implemented in all the three districts. All the interviewed farmers in Boteti (one) and Bobirwa (three) planted napier grass and reported value addition to their livestock feed supplementation through reduced costs and on-farm availability.
  - v. Lablab: this component was implemented in all the three districts; one female farmer in Gantsi was able to harvest. In Boteti and Bobirwa the same results were reported during interviews except that in the latter districts, the farmers also fed the lablab to cat. One farmer in Gantsi district embarked on lablab production but did not have keen interest until she saw that her sheep really enjoyed the lablab. She was then able to observe an improvement in her small stock which was feeding on lablab. She also observed that since she fed her animals the feed, there was reduced animal straying as they did not need to travel far for grazing.

- vi. Re-seeding: this component was not successful because grew at the farm where the grass was planted. However, the grass was successfully grown in a government experimental farm in Gantsi.
  - vii. Tswana chicken: the project component is implemented in Tsetsejwe in the Bobirwa subdistrict. Two farmers, both females were supplied with Tswana chicken. Only one farmer was interviewed, and she indicated that the project was successful. The Tswana chicken are also relevant to the alleviation of poverty.
20. A prominent CSA practice was implemented in Boteti subdistrict where a farmer was engaged in fodder production (Napier grass, forage sorghum and Lucerne). He had managed to apply the techniques of CSA at his farm and is self-sufficient in feed production and is able to feed his animals sufficiently. The farmer's success has attracted the local community as well as government officials who use the farm for training and for benchmarking purposes. Another result indicator for the CSA success at this farm is the fact that the farmer has now identified another farm adjacent to his where he will use his acquired skills from IACSA to expand his CSA activities. Farmers in the Bobirwa subdistrict have mentioned that they were taken to this farm for benchmarking and it encouraged them to continue with CSA beyond IACSA.
21. The project contributed to strengthening different capacities of the farmers, through various activities. First by imparting skills concerning CSA and the value chains through the training workshops that were conducted. Entrepreneur skills were also developed during the project implementation. One farmer implementing vermicompost was able to secure a stable market for his business in Gaborone. He also acquired business from big farms who needed the natural manure but due to his small-scale production he could not meet the demand and has now decided he will expand his production to meet the market demand. The farmer is working with the Botswana Bureau of Standards to create a standard for his vermicompost product.
22. Farmers from all three districts confirmed that the project was able to teach them the existing value chains through the workshops that were conducted. The workshops also helped promote networking among the farmers. The networking result was knowledge and experience sharing as well as trading between farmers in the districts where CSA activities are implemented between farmers as evidenced and synergies in production. Trading between farmers was witnessed in Gantsi where fodder production farmers bought vermicompost manure from another farmer. One fodder producer was selling to another farmer who keeps dairy cows in Gantsi. Production synergies was noticed.
23. The project strengthened institutional collaboration between the different sectors in the three different districts. The poverty alleviation content has attracted the attention of the Ministry of Local Government where poverty alleviation programs are situated. This brings the ministry into the collaboration circle of the existing partners in the agricultural sector: FAO, BUAN, BITRI and the Ministry of Agricultural Development and Food Security. The presence of FAO to provide support where the Government of Botswana faced challenges also helped the project to achieve the planned outcomes.

*EQ 3.6: How is the project assessing, documenting and sharing its results, lessons learned and experiences?*

**Finding 4.** The project disseminated its results and experiences through publications (two district evaluation reports for the project site), presentations and training events. The project did not systematically assess its effectiveness because it lacked a planned monitoring system. The FAO office did hold regular internal meetings to discuss the progress of the project.

24. The project did not have a specific monitoring and reporting strategy this made it difficult to measure the extent of effectiveness. Apart from one (FAO, 2020), there are no reports that tracked implementation and gathered data on the indicators. Lack of monitoring has limiting implications on evaluation and makes triangulation of evaluation results difficult.
25. This resulted in information scarcity on the performance of the project during implementation of the planned activities. Transport shortage for extension staff compounded the problem of the non-existence of the mentoring strategy: lack of transport made it difficult for extension staff to visit farmers. This resulted in officers resorting to using mobile phones to attend to the farmers.
26. There was also lack of clarity on the role of some Ministry of Agricultural Development and Food Security extension workers in the Department of Veterinary Services concerning their participation in IACSA project and therefore, information flow was affected in some instances. Despite these challenges, constant communication was maintained between FAO and other partners. The district evaluation reports for the three districts were also produced in November 2021.

### 3.3 Progress to impact

*EQ 4: To what extent may the progress towards long-term impact be attributed to the project?*

**Finding 5.** The country project planned impact was to contribute towards development of sustainable, climate smart and inclusive food and agricultural production systems in Botswana. The project has contributed to different aspects of the farmers lives and has contributed to household incomes. While this impact is strictly local, the project has attracted other stakeholders within government who view the project to have potential to contribute to poverty alleviation.

27. The Botswana country project indicates movement to impact but with unclear quantitative measures given that the project implementation only started in 2021 due to delays caused by COVID-19. Despite this, the project was able to achieve the outcome in line with the CPF which is progress to impact as shown by results from all the areas where it was implemented.
28. Positive impacts have been achieved at the local, individual beneficiaries' levels. In Tsetsejwe (Bobirwa subdistrict), a young female was given Tswana chicken (22) in July 2021. At the time of the interview in June 2022, she had already sold 150-day old chicks, sold several older chickens and was able to expand her operations. The young female farmer is able to make profits and meet other household needs. Another farmer in the same subdistrict has managed to be self-sufficient in feed production and no longer buys cattle feed from livestock feeds outlets. All the respondents from other districts have also reported similar results of impact.
29. Some upscaling has been taking place by uptake of practices by government agencies. The Ministry of Agricultural Development and Food Security in Gantsi has already reseeded the grass in the government Artificial Insemination farm for demonstration purposes and also to train farmers. They are planning more farm walks in the district to spread the CSA benefits to other farmers within the district. The implementation of CSA will improve food security and promote farmer's resilience to climate change.

*EQ 4.2: Are there any barriers or other risks that may prevent future progress towards long-term impact?*

**Finding 6.** Several barriers to future progress include absence of farmers association which makes networking weak. Another challenge is poor institutional communication which end up confusing the farmers about who to talk to in a situation where role clarity between government departments has not been clarified.

30. Role clarity and institutional collaboration within the Ministry of Agricultural Development and Food Security was not smooth. During the interviews it was found that the Department of Animal Production in Bobirwa Subdistrict was not formally engaged in the project. This confused the local extension workers reporting lines and in addition their level of involvement in the IACSA implemented project in their extension areas. The farmers currently operate on close alliances based on neighbourliness from years back. This observation was made from the answers the farmers provided when asked if there was a formalized way they share experiences, they answered that there was no formalized structure for their collaboration and experience and knowledge sharing.

### 3.4 Efficiency

*EQ 5: To what degree has the project been implemented efficiently, cost-effectively, and has management been able to adapt to any changing conditions to improve the efficiency of project implementation?*

*EQ 5.1: Was the project cost-effective; how does the project cost/time versus output/outcomes equation compared to that of similar projects?*

**Finding 7.** The project was cost effective and there were no project failures due to insufficient funds. The no-cost extension due to the COVID-19 pandemic was a positive adjustment for the project implementation which resulted in the completion of several project components.

31. By triangulating both the information gathered through stakeholders' interviews and the district evaluation reports – produced in November 2021 – the evaluation concluded that the pilot project was efficient albeit with some concerns. For example, material procurement was tedious due to the FAO stringent protocol which led to delays in the launching of certain activities like the one related to the soya beans. This one did not start on time, but others failed to start at all because, when the project was finally ready to deliver, the germination and cultivation of those seed were out of season.

*EQ 5.2: To what extent are the coordination mechanisms to implement the project functioning and contributing to project efficiency?*

**Finding 8.** The coordination mechanism for project implementation and management was transparent and simple (few staff and partners) which contributed to efficient project execution. The collaboration between FAO and its partners was cordial and was able to deliver project results.

32. The project was managed by the FAO project coordinator who was seconded by the Ministry of Agricultural Development and Food Security and the Ministry of Agricultural Development and Food Security had its staff manage the project implementation at district level. The project also benefitted from the presence of three technical assistants from the Department of Animal Production while other three were from the Department of Crop Production. They assisted the project in particular with extension work. This arrangement worked well because the Ministry of Agricultural Development and Food Security already have extension workers at district level who were able to integrate IACSA project work into their daily schedule since the activities are aligned with Ministry of Agricultural Development and Food Security extension work. The only challenge that was experienced was lack of proper integration of the Department of Veterinary Services in Bobirwa subdistrict into the IACSA project.
33. Another Ministry of Agricultural Development and Food Security officer was assigned to the project activities coordination in Bobirwa and Boteti subdistricts. The officer was able to provide the link between the extension officers and farmers with FAO office. The Gantsi district also had a

Ministry of Agricultural Development and Food Security officer, an agronomist who was responsible for the management of the project in the district. The officer worked with six technical assistants who supported with extension work at extension area level.

34. A few agencies were involved in the project and these were BUAN, BITRI, and the Department of Agricultural Research. The challenge that was observed during field work through interviews was that at extension area level, clear roles were not defined for some extension officers who were not well integrated into project function at project start.

*EQ 5.3: To what extent did the implementing agency effectively discharge its role and responsibilities related to the management and administration of the project?*

**Finding 9.** Overall, the project beneficiaries were pleased with the project based on its effectiveness and they appreciated the inputs that helped them implement the agreed activities. The FAO procurement process is different from that of the national government and thus was challenging for the government staff to navigate and FAO Botswana could have better explained procurement process to Ministry of Agricultural Development and Food Security staff. Other challenges were the lack of monitoring system, unclear roles and channels of communication between Department of Animal Production and the Department of Veterinary Services.

35. The FAO procurement process was complicated for the Ministry of Agricultural Development and Food Security staff and some suppliers. According to the interviews conducted with Ministry of Agricultural Development and Food Security staff, this led to delays in procuring the required acquire their inputs. The FAO procurement system requires that each time a purchase is made, a supplier is included in the system even for small items that could be obtained locally within the district and cost less money (see also Batisani, 2021). In Gantsi district, the officers reported that most of the 2020 was used in the procurement process and that it was longer compared to the government one. This resulted in delays to project implementation. The procurement challenges situation was not resolved because it is beyond the scope of the project. Despite the procurement related challenges, there were many positives mentioned by farmers and the Ministry of Agricultural Development and Food Security officers. The farmers expressed satisfaction with the support from FAO regarding the project implementation such as the provision of inputs such as the use of incubators for indigenous poultry production.
36. Although in general, the coordination between the Ministry of Agricultural Development and Food Security and FAO was well, there was lack of clarity on the role of some Ministry of Agricultural Development and Food Security extension workers in the Department of Veterinary Services concerning their participation in IACSA project. The confusion was caused by the fact that the Department of Veterinary Services seem to have not been part of the training and/or consultative process of the IACSA project while at the same time they provide services needed by the IACSA project beneficiaries such as the Indigenous Tswana poultry in Tsetsejwe. The officers were confronted with a situation where IASCA beneficiaries were implementing activities for which they needed the Department of Veterinary Services officer's expertise but on the other hand the officers did not have IASCSA as part of their portfolio responsibility in their day-to-day action plans. This created confusion for the officers in terms of reporting. For example, during the evaluation team visit, the officers could not volunteer to be interviewed without asking for permission from their superiors' consent in Bobonong (headquarters of the Ministry of Agricultural Development and Food Security in the Bobirwa district).

*EQ 5.4: To what extent has the project management been able to adapt to changing conditions to improve the efficiency of project implementation?*

**Finding 10.** The COVID-19 pandemic drastically changed the implementation conditions of the project but its management could be adapted.

37. In late 2020, the global programme (IACSA) requested the donor a no-cost extension, claiming delays due to the COVID-19 pandemic. During this time of waiting, the Ministry of Agricultural Development and Food Security kept in touch with the farmers through regular visits for their routine extension work where they also updated farmers on progress concerning IACSA project. During 2020, the project staff in the districts, in collaboration with FAO office in Gaborone worked on procuring the necessary inputs in preparing for the project implementation and at the same time workshops and training continued. In Gantsi district, farmer-to-farmer learning practices (farm walks) were conducted within the regulations related to the COVID-19 pandemic. These farm walks were conducted at different farms including the government artificial insemination (AI) farm where experimental re-seeding project was started.

*EQ 5.5: What were the major efficiency factors influencing the achievement or non-achievement of project results? (e.g. time, funding, capacity, communication, etc.)?*

**Finding 11.** The technical and professional qualifications of staff working on the project (FAO and others), regular communication between FAO and the Ministry of Agricultural Development and Food Security enhanced the efficiency of project implementation by allowing challenges to be overcome effectively such as requirements at project sites. The presence of extension staff at district level made extension advice available to farmers.

38. The project benefited from the efficient communication between FAO and the Ministry of Agricultural Development and Food Security at district level. The delivered by FAO and its personnel, with much support coming from the Ministry of Agricultural Development and Food Security which provided extension services and had direct contact with the farmers. Their service was delivered with an adequate level of efficiency. When challenges were met such as transport shortage, the Ministry of Agricultural Development and Food Security staff used other means of communication like mobile phones, to reach the farmers. The interviews with project coordinators at district level showed that there was easy flow of communication between them and the FAO project coordinator. The synergy and complementariness with other initiatives within the Ministry of Agricultural Development and Food Security ensured that the project was part of a longer-term development on sustainable agriculture.

39. The staff capacities were another factor that enhanced the quality of project delivery. The Ministry of Agricultural Development and Food Security staff charged with coordinating the project, at district level, are highly qualified and counting on individuals with several years of experience.

### **3.5 Sustainability**

*EQ 6: What is the likelihood that the project results will continue to be useful or will remain to be supported after the end of the project?*

*EQ 6.1: What process has the project generated or supported that ensure sustainability?*

**Finding 12.** The projects results are likely to be maintained because they are aligned with ongoing Ministry of Agricultural Development and Food Security initiatives and the Ministry of Agricultural Development and Food Security is already making plans to expand the project in other districts. Upscaling and longer-term sustainability are not likely, because technical areas need to be strengthened.

40. The Ministry of Agricultural Development and Food Security implements several projects and programs that are aimed at achieving food security such as ISPAAD, LIMID, infrastructure development project, research on drought resilient varieties and fodder production. These are in line with CSA practices that are complimented by the IACSA, providing the current activities with some degree of sustainability. To promote upscaling and longer-term sustainability, FAO suggested five technical areas it needs to work on with the government in order to ensure sustainability: i) improving efficiency in the use of resources; ii) conserving, protecting and enhancing natural ecosystems; iii) protecting and improving rural livelihoods and social well-being; iv) enhancing the resilience of people, communities and ecosystems; and v) promoting good governance of both natural and human systems (FAO, 2014, p. 7). These areas are not yet in place because they are long term objectives which IACSA could contribute to but not achieve within a short space of time.

*EQ 6.2: What are the key risks that may affect the sustainability of the project results and benefits (consider financial, socio-economic, institutional and governance, and environmental)?*

**Finding 13.** Reducing government interest or changes in administration and public policy can affect continuity of project results. Externalities (such as emergencies or new infrastructure projects) may disrupt agriculture activities if resettlement is to be instituted. Lack of funding is a likely risk that might affect the sustainability of the project.

41. Current governmental policies provide conducive environment for CSA. The challenge might be long delays in helping farmers because some of them might lose interest in the project. Delays can be a result of lack of funds or allocated budget being disrupted as it was the case during the COVID-19 pandemic. Government or organizational process could also pose risks. For example, in Gantsi, farmers were provided with beehives, but no colonies were supplied because they were not available from the government. This resulted in one farmer requesting that the beehive be removed from his farm.
42. Externalities beyond the control of the project partners form another risk for the sustainability of project results. Excessive weather conditions like floods can disrupt the CSA implementation. In 2016 during cyclone Dineo, there were floods that disrupted arable production and caused damage to housing units in many rural and land areas where farmers were forced to move to safer places in their villages. Relocation/resettlement due to some infrastructural developments that dictates that the farmers pave way for them. This has happened in Boteti when the Orapa Letlhakane and Damtshaa mines were established. Farmers were also re-located twice in Jwaneng when the mine was established during the 1970s and about ten years when the mine was expanding. Their farming enterprises were disturbed because they lost water sources which hampered agricultural productivity.

## **3.6 Cross-cutting issues**

### **3.6.1 Partnerships and stakeholder engagement**

*EQ 7: How effective were the collaboration mechanisms among all parties involved?*

*EQ 7.1: To what extent were other actors, at international and national level, such as civil society, indigenous population or local communities and private sector involved in project design and implementation?*

**Finding 14.** Local partners like BUAN, BITRI and the Ministry of Agricultural Development and Food Security participated in the project design. The local communities were all invited to sensitization



workshops but did not take part in the project design. There is no evidence of private sector involvement in project design.

43. Botswana's decision-making process is through the Kgotla or traditional assembly where all members of the local communities were given an opportunity to participate in decision making by way freely expressing their views. Interviews with the Ministry of Agricultural Development and Food Security staff in the three districts revealed that the communities were invited to sensitization workshops where IACSA was explained, and farmers given an opportunity to select CSA activities that were in line with their interest. There is no evidence that the beneficiaries were involved in project design. There is also no evidence that civil society was involved in the project design. The private sector involvement in project design was not evident. Only the parastatals were involved, BUAN and BITRI which played different roles in the project. The Ministry of Agricultural Development and Food Security also played an important role in the design of the project being the main partner to FAO.

*EQ 7.2: What was the effect of partnerships and stakeholder engagement on the project results?*

**Finding 15.** The partnership between stakeholders (FAO, Department of Agricultural Research, BITRI and BUAN) strengthened the project by ensuring proper coverage of all necessary aspects at both technical and administrative level. The participation of the farmers at the awareness workshops and the liberty they were given to choose the activities in line with their aspirations and interests was instrumental in creating confidence in farmers concerning the practicality and efficacy of CSA activities.

44. The interviewed farmers expressed appreciation of the Ministry of Agricultural Development and Food Security's engagement with the farmers. Inviting them to visit the different field level activities has helped fostering confidence concerning the viability of the projects and also - and more importantly - the believability in the support. One farmer in Gantsi district expressed initial doubts about lablab benefits but with continuous extension contact she was able to harvest and benefit from lablab utilization on her stock and sales. In addition, all the farmers interviewed in all the districts whose project components were implemented indicated that they experienced improved production and were able to sell some of their product. The respondents also indicated that activities that were of more interest (e.g., field practices) were prioritized over activities of less interest to them.
45. The project collaborated well with institutional stakeholders. For example, BUAN and BITRI contributed to the training, the Department of Agricultural Research supplied the seeds while FAO provided implementation oversight including monitoring as well as some machinery for harvesting in Boteti. Nevertheless, the collaboration within government departments showed space for improvement. For example, some government officials in Tsetsejwe were not consulted on the project and yet they were expected to provide extension advice to farmers as part of their daily routine work, including extension advice on the IASCA project. This according to the interviewed extension staff creates complication on reporting to their supervisors when it comes to IACSA. The history of the partnership between FAO and the government of Botswana has established a strong sense of purpose in the agricultural sector.

### 3.6.2 Gender

*EQ 8: To what extent were gender considerations taken into account in designing and implementing the project?*

*EQ 8.1: Was gender equality, youth and indigenous peoples' considerations taken into account in project design?*

46. The evaluation team could not access a final project document so project design cannot be assessed.

*EQ 8.2: Was the project implemented in a manner that ensures gender equitable participation and benefits as well as women empowerment?*

**Finding 16.** The CSA activities promoted by the pilot project had several positive results on women's empowerment. The invitation to participate in the project encouraged women.

47. The draft project document made a statement to the effect that women were encouraged to participate in the project. (FAO, 2014) and in practice, many of them did participate in the three districts. Three women farmers in Ncojane, in the Gantsi district plan to work together on beekeeping once they are supplied with colonies. They were motivated by the benefits they saw accruing to another farmer in Gantsi. The farmers that were interviewed in the three districts confirmed that the invitation to participate in the project encouraged women to participate. One female farmer in Gantsi indicated that she was able to use lablab as natural grazing supplement for her smallstock. This cut herding costs in terms of time. She also indicated that she was able to sell her surplus to neighbouring farmers thus generating income that hitherto she did not have.

## 4. Lessons learned

48. The IACSA project provided some lessons that can be emulated in other projects. These include:
- i. The inclusion of farmers at the beginning of project implementation through sensitization workshops created confidence in farmers on the ownership of the project.
  - ii. Institutional collaboration and effective communications between implementation partners (FAO, Ministry of Agricultural Development and Food Security, BUAN and BITRI) made implementation of project activities less difficult given the COVID-19 pandemic and its limitations.
  - iii. The Ministry of Agricultural Development and Food Security officers faced transport challenges that made it difficult for them to reach farmers on regular basis, but they used telephone communication to keep connected to farmers. This gave farmers and opportunities to receive extension service even when the offers could not be on site.
  - iv. Other stakeholders needed to be identified within the country such as Ministry of Environment, Wildlife and Tourism, the Ministry of Lands, Sanitation and Housing, district councils, and the private sector who could enhance the project implementation.
  - v. A farmer's association for the farmers involved in the IACSA project could be have been considered to facilitate experience and information sharing.
  - vi. Monitoring and regular reporting should be established at the beginning of the project to ensure evidence-based decision making is provided.

## 5. Final observations

49. The IACSA pilot project has - to a large extent - been implemented effectively. The achieved results include the adoption of CSA practices by most of the farmers involved in the project. The government has also adopted CSA practices by implementing re-seeding project in a government owned farm in Gantsi which is used for training farmers on CSA practices from different extension areas within the district. The institutional partnership between FAO, the Ministry of Agricultural Development and Food Security, BUAN and BITRI was efficient and was able to overcome some challenges posed by COVID-19 such as supply shortages. The overall smooth communication enabled speedy delivery of inputs as when they became available. Project documents that guide project implementation should be kept safe to ensure that monitoring and evaluation is conducted based on agreed documents.
50. While several challenges were encountered, the institutional collaboration was overall conducive for satisfactory results. The challenges include the weak role clarity within some Ministry of Agricultural Development and Food Security departments which results in some farmers being uncertain as to whom to contact for extension services. This was mitigated by the Ministry of Agricultural Development and Food Security staff ability to reconcile the Ministry of Agricultural Development and Food Security extension mandate with the need to provide service to the farmers which also fell in line with their regular extension work as government officials.

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## Appendix 1. People interviewed

Last name	First name	Institution/Agency/District	Role
Badubi	Slumber	Ministry of Agricultural Development and Food Security	IACSA Coordinator
Setlotlo	Golaamang	Gantsi District	Farmer (soyabean)
Ramosawaana	Sophie	Gantsi District	Farmer (lablab production)
Ketumile	Gaborekwe	Tsetsejwe	Farmer, (traditional Tswana chicken),
Lethaku	Mmapu	Gantsi District	Farmer (beekeeping)
Mabuela	Wangu Dickson	Department of Crop Production	Extension worker
Malema	Kolagano	Bobirwa subdistrict	Farmer (forage production)
Mayane	Gabolelelwe	Gantsi District	Farmer (soyabean)
Moeti	Serig	Gantsi District	Farmer (beekeeping)
Mooketsi	Keeme	Ministry of Agricultural Development and Food Security, Gantsi District	Agronomist
Motshabi	Goitsewang	Gantsi District	Farmer (beekeeping)
Mpaphadzi	Dickson	Gantsi District	Farmer (beekeeping)
Nyaladzi	Batisani	BITRI	Professor and former consultant for IACSA
Pelokgale	Vellemina	Ministry of Agricultural Development and Food Security, Gantsi District	District Agricultural Coordinator
Rammala	Ramotlhale	Gantsi District	Famer (vermicomposte)
Ramosamo	Ramosamo	Bobirwa Subdistrict	Farmer, (forage production)
Rampeba	Mosimanegape	FAO Botswana	Project Cordinator
Sekgwama	Isaac	Bobirwa Subdistrict	Farmer, Molalatau (forage production)
Sima	Thato	Department of Veterinary Services	Veterinary Assistant Extension work
Taukobong	Modisa	Gantsi District	Farmer, (soyabean & lablab)

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