

Independent Office
of Evaluation



Republic of Botswana Agricultural Services Support Project

PROJECT PERFORMANCE EVALUATION



Independent Office
of Evaluation



IFAD

Investing in rural people

Republic of Botswana

Agricultural Services Support Project

Project Performance Evaluation

June 2020

Report No. 5428-BW

Document of the International Fund for Agricultural Development

Photos of activities supported by the Agricultural Services Support Project

Front cover: A project beneficiary showing her horticulture farm, as part of the wastewater irrigation scheme in Palapye.

Back cover: A demonstration group for conservation agriculture interacting with the evaluation team (left); a project beneficiary at his horticulture farm in a wastewater irrigation scheme in Palapye (right).

©IFAD/Prashanth Kotturi

This report is a product of staff of the Independent Office of Evaluation of IFAD and the findings and conclusions expressed herein do not necessarily reflect the views of IFAD Member States or the representatives to its Executive Board. The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of IFAD concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The designations “developed” and “developing” countries are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

All rights reserved.

©2020 by the International Fund for Agricultural Development (IFAD)

Preface

This report presents the findings of the project performance evaluation of the Agriculture Services Support Project in Botswana, undertaken by the Independent Office of Evaluation of IFAD (IOE). The project was implemented between 2012 and 2018.

Smallholder agriculture in Botswana is characterized by low productivity and high crop-failure rate, due to chronic droughts. The Government of Botswana finances agricultural subsidies under the Integrated Support Programme for Arable Agriculture Development to address challenges facing arable farmers. Botswana relies heavily on mineral exports, especially diamonds. Anticipating a possible future reduction in mineral export revenue, the Government of Botswana envisaged reducing subsidy expenditures.

The project intended to contribute to an overall reduction in subsidy expenditure by promoting conservation agriculture practices through demonstration plots. In addition, the project piloted a wastewater irrigation scheme to increase access to agricultural irrigation for horticulture production. The project also built agricultural service centres to promote market-driven extension services.

The wastewater irrigation scheme was successful in delinking horticultural production from the erratic rainfall that Botswana usually experiences. However, this evaluation found that the cost per hectare was high, given that the final irrigation scheme lacked some of the planned technical features, such as a filtration plant. Installing the scheme in line with planned technical specifications would have doubled the cost.

The conservation agriculture sites were not successful in increasing yields even in the demonstration plots. This was due to lack of suitable conservation agriculture machinery, and acute droughts during the implementation period. Only two out of fifteen planned service centres were completed and operational, as of the end of the project. This was due to delays in planning and procurement for construction and operationalization. The project implementation was slow, due to project staff turnover and complex procurement procedures.

The evaluation recommends that IFAD focus on engaging in a technical support role, rather than through conventional IFAD investment projects, and in line with Government policy priorities and capacities.

This project performance evaluation was conducted by Prashanth Kotturi, IOE Evaluation Analyst, with contributions from Camillo Risoli, IOE senior consultant. Fabrizio Felloni, IOE Interim Officer-in-Charge and Johanna Pennarz, Lead Evaluation Officer, provided comments on the draft report. Emanuela Bacchetta and Serena Ingrati, IOE Evaluation Assistants, provided administrative support.

IOE is grateful to East and Southern Africa Division of IFAD and the Government of Botswana, in particular the Ministry of Agriculture, for their insightful inputs at various stages of the evaluation process and the support they provided to the mission. I hope that the findings of this project performance evaluation will be instrumental in improving the results of the collaboration between the Government of Botswana and IFAD.



Fabrizio Felloni
Interim Officer-in-Charge
Independent Office of Evaluation of IFAD

A project beneficiary showing her horticulture farm, as part of the wastewater irrigation scheme in Palapye.

©IFAD/Prashanth Kotturi



Contents

Currency equivalent, weights and measures	ii
Abbreviations and acronyms	ii
Map of the project area	iii
Executive summary	iv
IFAD Management's response	viii
I. Evaluation objectives, methodology and process	1
II. Project	3
A. Project context	3
B. Project implementation	5
III. Main evaluation findings	8
A. Project performance and rural poverty impact	8
B. Other performance criteria	18
C. Overall project achievement	20
D. Performance of partners	20
E. Assessment of the quality of the project completion report	22
IV. Findings, conclusions and recommendations	23
A. Conclusions	23
B. Recommendations	23
Annexes	
I. Basic project data	25
II. Definition and rating of the evaluation criteria used by IOE	26
III. Rating comparison	28
IV. Approach paper	29
V. Theory of change of the Agricultural Services Support Project	37
VI. Output achievement table	42
VII. List of key people met	43
VIII. Bibliography	44

Currency equivalent, weights and measures

Currency equivalent

Currency unit = Botswana Pula (BWP)

1 US\$ = 10.858 BWP (December 2019)

Weights and measures

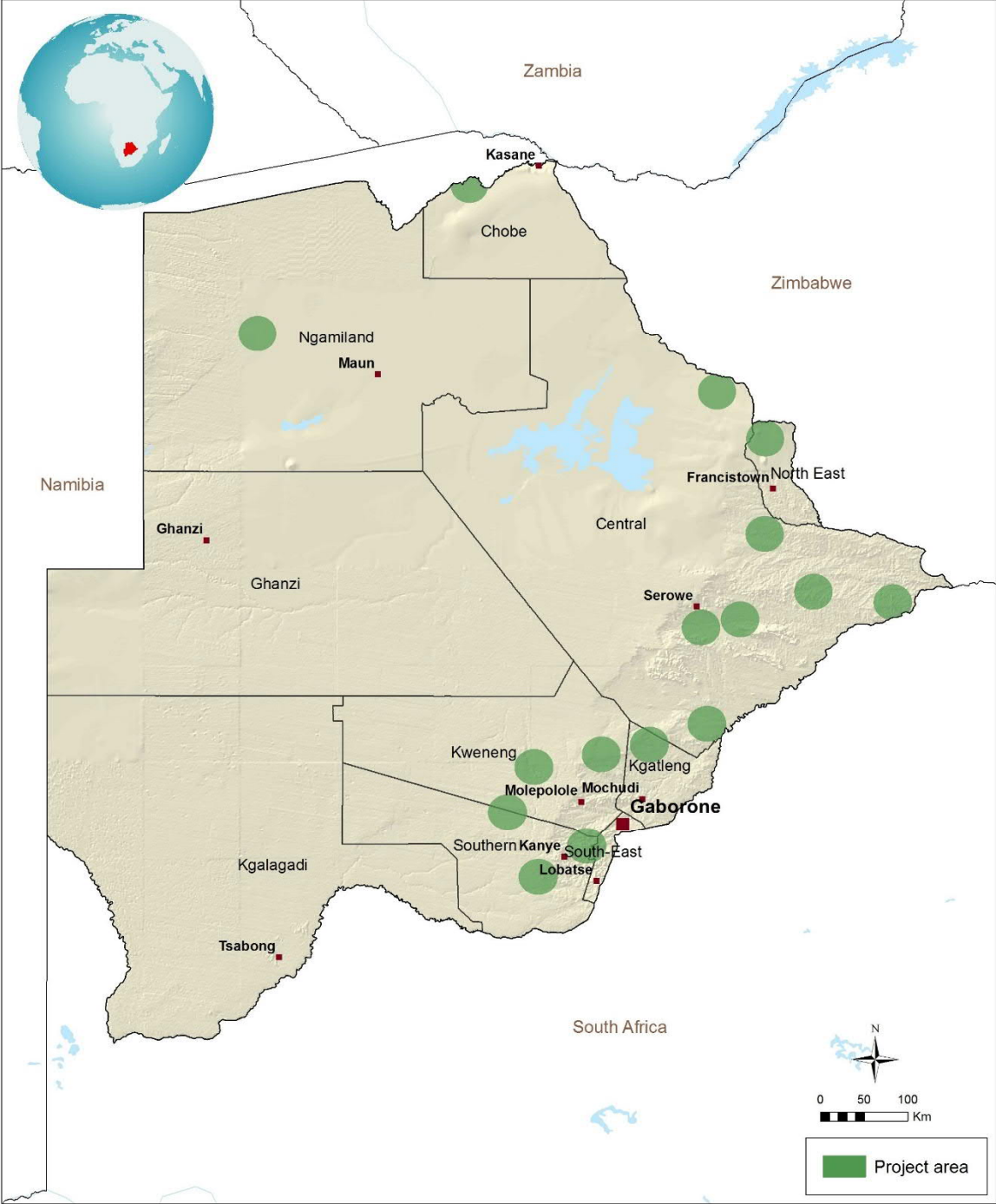
1 kilogram (k)	=	2.204 pounds (lb)
1,000 kg	=	1 metric ton (t)
1 kilometre (km)	=	0.62 miles
1 metre (m)	=	1.09 yards
1 square metre (m ²)	=	10.76 square feet (ft)
1 acre (ac)	=	0.405 ha
1 hectare (ha)	=	2.47 acres


Abbreviations and acronyms

ASC	agriculture service centre
ASSP	Agricultural Services Support Project
BAMB	Botswana Agriculture Marketing Board
CA	conservation agriculture
COSOP	country strategic opportunities programme
ESA	East and Southern Africa Division (IFAD)
IOE	Independent Office of Evaluation of IFAD
ISPAAD	Integrated Support Programme for Arable Agriculture Development
LIMID	Livestock Management and Infrastructure Development
MoA	Ministry of Agricultural Development and Food Security
M&E	monitoring and evaluation
PCR	project completion report
PMT	project management team
PPE	project performance evaluation
ToC	theory of change

Map of the project area

Botswana
Agricultural Services Support Project
Project performance evaluation



 The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.
IFAD Map compiled by IFAD | 16-07-2019

Executive summary

A. Background

1. The Independent Office of Evaluation of IFAD (IOE) undertook a project performance evaluation (PPE) of the Agricultural Services Support Project (ASSP) in the Republic of Botswana. The main objectives of the PPE were to: (i) assess the results of the programme; (ii) generate findings and recommendations for the design and implementation of ongoing and future operations in the country; and (iii) identify issues of corporate, operational or strategic interest that merit further evaluative work.
2. The evaluation team undertook a desk review based on project documents. In addition, the methods used to conduct the evaluation consisted of individual and group interviews with project stakeholders, beneficiaries, former project staff, and local and national government authorities, as well as direct observations in the field. There was an emphasis on meeting with subdistrict extension authorities and extension workers, who had implemented the programme activities. The PPE selected a sample of sites for field visits that reflected the variety of project activities implemented.

B. Project and country context

3. Main findings. Botswana is a landlocked country in Southern Africa. It borders South Africa to the south and southeast, Namibia to the west and north, and Zimbabwe to the northeast. A stable political environment with a multiparty democratic tradition characterizes Botswana. It is not well endowed with arable land. Most of the land is semi-arid and only 5 per cent is suitable for arable agriculture. Rainfall is scanty and varies from over 650 mm/year in the north east to less than 250 mm/year in the south west. The Integrated Support Programme for Arable Agriculture Development (ISPAAD) was introduced in 2008. The aim was to address challenges facing arable agriculture farmers and the inherent low productivity of the arable subsector, through provision of annual subsidies for crop inputs such as seeds, fertilizers, mechanization services and herbicides.
4. Women and youth in Botswana. Youth are predominantly concentrated in urban areas, with only 29 per cent residing in rural areas. In Botswana, women play an important role in the agriculture sector. They made up about 57 per cent of the labour force employed in the agriculture sector in 2010. Most recent estimates indicate that women head about 55 per cent of households in Botswana.

C. The Project

5. Rationale. Expenditure on ISPAAD forms a substantial part of the agriculture sector's budget (42 per cent of the recurrent budget of the Ministry of Agricultural Development and Food Security [MoA] in 2019/20). In light of the declining trend of revenues from diamond mining, the Government of Botswana wanted to progressively reduce expenditure on subsidies in the agriculture sector. Thus, ASSP piloted CA as a means of reducing the dependence of smallholders on subsidized inputs, and making smallholder agriculture commercially viable.
6. Theory of change. The two pathways to project results reflect the two main components of ASSP. First, outcome of "a sustainable increase in smallholder agricultural productivity", which focused on improving productivity through piloting CA and a wastewater irrigation scheme. The second pathway was through the creation of a "favourable enabling environment for smallholder agricultural development", through capacity building of the extension system, reform of ISPAAD and the construction of agriculture service centres (ASCs) for rendering extension services.

D. Main findings

7. Relevance. The objectives of ASSP are consistent with ISPAAD objectives of: (i) increased grain production; (ii) promotion of food security at national and household level; (iii) commercialization of agriculture through mechanization; (iv) facilitation of access to farm inputs and credit; and (v) improvement of extension outreach.
8. ASSP was foreseen as a programme that would work in close collaboration with ISPAAD to pilot improved productivity and cost-effective farming practices that would, in turn, reduce the subsidy bill under ISPAAD. This did not materialize, as ASSP's implementation structure was de facto parallel to that of ISPAAD. The extension structures in Botswana are geared towards delivering ISPAAD subsidies, and the design report recognized the burden on extension services in implementing ISPAAD and the resulting lack of capacity. However, the design of various interventions such as CA put additional burden on the extension services.
9. The overarching assumption that the project made, on the adequacy of CA to foster profitable farming, was ambitious. A simulation by this PPE based on the current maize productivity, reference prices of maize set by Botswana Agriculture Marketing Board (BAMB), historical crop failure rates, and cost of subsidies delivered by ISPAAD, reveals that the productivity of an average maize farm would have to increase by six times to break even, in the absence of subsidies under ISPAAD.

E. Effectiveness

10. Effectiveness is assessed in line with the outcomes discussed under the theory of change. Under the first outcome of "a sustainable increase in smallholder agricultural productivity", the CA plots failed to show results. A large number of group members dropped out from the demonstration groups in the second year of piloting of CA, due to drought and shortage of CA equipment. In most districts, there were only two rippers for thousands of farmers.¹ Private contractors did not have appropriately powerful tractors for ripping in dry seasons. The extension services were unable to support CA in light of their engagement in administering ISPAAD. The Palapye wastewater irrigation scheme was a partial success. The scheme was not yet fully operational when the evaluation team visited, as a result of problems experienced in the tendering and procurement procedures, and underestimation of costs.
11. The second outcome of creating a favourable enabling environment for smallholder agricultural development was not achieved. About 90 extension workers were trained in extension methodologies across 10 districts against a target of 270. Outcome 2 was also to be achieved through the building and operationalization of ASCs, which are able to deliver a mix of services in support of productivity enhancement. However, as of the end of the project, only two of the originally planned fifteen ASCs were completed. In terms of policy work, a comprehensive review to enable ISPAAD's revision and the design of an exit strategy was to be carried out. However, the same was not undertaken. A midterm review was initiated but eventually interrupted because of administrative issues around procurement.
12. Efficiency. ASSP was approved in December 2010 and became effective in February 2012. There was a lag of 14.75 months between approval and effectiveness. This was higher than the average of 11.5 months of effectiveness lag of all East and Southern Africa region projects approved until 2010 (the year of approval of ASSP). The project activities in the initial years were affected by long

¹ Minimum tillage can be done in two ways. One, it can be done as soon as the first rains start and when the soil still has moisture. However, this implies that tilling is time sensitive, thus precluded by the lack of CA equipment. A second method is to do the ripping in the dry months and leave the ripping lines for planting during rains.

procurement processes (including human resources) and project staff turnover. The project management costs at design were meant to be 14 per cent of the total costs. As at the end of the programme, 16 per cent of the amount disbursed was towards programme management costs. These costs are around the IFAD recommended ceiling of 15 per cent of the project management costs. The project completion report (PCR) did not compute an internal rate of return.

13. Rural poverty impact. Drought and lack of suitable CA equipment stymied the uptake and replication of CA by farmers. ASSP had little focus on building human and social capital in its design. Some demonstration groups were formed and farmer field schools were constituted, as the project tried to mobilize communities in building their capacities, fostering social capital and enhancing the skills of farmers in conservation techniques. Training for CA was found to be ineffective in enhancing the skills of the target groups. The failure of demonstration plots to produce results meant that there were no increases in productivity or production. In terms of policy changes, the second outcome of the project pertained to influencing the enabling environment of the agriculture sector by enabling changes in ISPAAD. However, little progress was made under outcome 2. There has been no progress on reviewing and reforming ISPAAD. In addition, ASSP could not influence the Government to enact a favourable subsidy compensation for CA tilling vis-à-vis conventional tiling. Overall, ASSP had little impact on incomes, food security, enhanced institutional capacities and policies, or enhanced human and social capital.
14. Sustainability. The project had three main strands of activities undertaken in the lifetime of the project. They were: (i) promotion of CA; (ii) construction of agriculture service centres for extending extension services; and (iii) completion and operationalization of a pilot irrigation scheme using wastewater. The continuation and replication of the pilot demonstration plots has not taken place, and demonstration groups have witnessed attrition out of existing groups. Repeated droughts and lack of suitable equipment for CA precluded sustainability of CA sites. Of the two ASCs, one was found to be operating profitably, managed by a private sector actor, while the profitability of the second ASC could not be determined as a parastatal firm, BAMB, ran it. The cost of setting up the wastewater irrigation scheme was US\$25,000 per ha, in addition to which another US\$3,000 of investment was required by beneficiaries to make the scheme operational on their lands. The pilot irrigation scheme was functioning well and the target groups were found to be engaging in profitable horticulture. The target beneficiaries were expected to break even within one year, taking into consideration only their share of contribution.
15. Innovation. The use of treated urban wastewater for irrigation is a relatively recent innovation in Botswana. It is of high interest to the country, due to its scarce water resources and the need to increase agriculture production. The ASCs do not represent an innovation in Botswana. Instead, private sector management of the ASCs, as in the case of one of the two operational ASCs, is new to Botswana.
16. Scaling up. CA activities were unscalable due to their failure to demonstrate results. The wastewater irrigation scheme, while functional, had very high per ha costs, making it difficult to scale up.
17. Gender equality and women's empowerment. ASSP's activities gave insufficient attention to gender issues. There was no analysis of the constraints that women face in agriculture in Botswana, and how the project would address them. The project activities were gender blind too, with no particular emphasis on women or the realities of their livelihoods in terms of their prime role in physical work on the farms. More specifically, CA practices such as digging planting basins were found to be unsuitable for women and women-headed households, given their

labour-intensive nature and the lack of labour in rural Botswana, due to rural-urban migration.

18. Environment and natural resource management. The project tried to address the issue of lack of water through the wastewater irrigation scheme, which had high cost of installation per ha. The evaluation team expressed concerns regarding the quality of water, as it was de-sludged but not filtered. ASSP attempted to address the issue of quality of soils through promotion of CA (which minimizes soil disturbance and increases water retention). However, the failure of CA sites to show results meant that the measures to promote better soil quality were unsuccessful.
19. Climate change and natural resource management. ASSP was to partly adapt the agriculture sector to the low and erratic precipitation levels and poor soil conditions, through CA practices. CA sites could not withstand the chronic droughts in Botswana. The wastewater irrigation scheme was able to decouple the agricultural production from levels of rainfall in Botswana, at least on a pilot scale.

F. Recommendations

20. Recommendation 1. IFAD should identify its strategic role in the context of Botswana. This may involve an in-depth and realistic analysis of the development challenges that Botswana faces and the nature of interventions that IFAD can realistically undertake to address them. These selected areas of engagement should be reflected in the form of a country strategy note or country strategic opportunities programme (COSOP), as applicable. Some potential areas of engagement that IFAD could consider include backstopping and capacity building of existing flagship Government programmes, testing of low-cost irrigation models and subsidy rationalization models.
21. Recommendation 2. Make strategic use of the limited IFAD resources and instruments available in Botswana. In the absence of an allocation under the performance-based allocation system, IFAD can operate through regional and country-specific grants or reimbursable technical assistance. Any such instruments should be deployed towards interventions that can have multiplier effects, or those that can be potentially scaled up by the Government using its own funding. To that extent, IFAD should confine its future interventions to a focused scope of activities and pilot initiatives, in line with Government policy priorities and capacities, and IFAD's strategic focus, without engaging in a wide range of activities as in the case of a conventional IFAD investment programme.

IFAD Management's response²

1. Management welcomes the overall evaluation findings of the Botswana Agriculture Services Support Project (ASSP) project performance evaluation (PPE) conducted by the Independent Office of Evaluation (IOE).
2. Management agrees with the report's assessment of the overall performance of the project as unsatisfactory. In particular, management agrees with the view that project implementation was hampered by the onset of multi-year droughts and a project management unit that experienced both staffing shortages and a high staff turnover. Management notes that, despite the serious challenges faced and the resulting outcome of the project, the project has provided IFAD with valuable lessons. Most notably, this includes ensuring flexibility in how IFAD works in the context of a middle-income country. Specifically, in a country like Botswana with relatively strong government systems, IFAD should increasingly use national systems. In fact, in the final stage of the project, it was agreed to use the Government's financial management/reporting systems.
3. Despite challenges with project implementation, Management is pleased to inform that a recent IFAD mission to the country noted that the Palapye wastewater irrigation scheme is receiving serious attention from the Ministry of Agriculture, including its ambition to scale up the approach. Furthermore, the Agricultural Service Centres supported by the project are functioning and providing smallholder producers with access to services, inputs and technology. Management would also like to highlight that the Piloting Agricultural Productivity Enhancement Project design builds on several lessons from ASSP, such as financial operational modalities and linkages created between different public agencies, extension modalities and management of service centres.
4. Management appreciates the PPE recommendations, to which detailed comments are presented below:
 - a) Recommendation 1. IFAD should identify its strategic role in the context of Botswana and the value added of its operations.

Agreed. The new country strategy note for Botswana will identify IFAD's strategic role in the country and the value added of its operations. In recent discussions with the Government of Botswana, IFAD has proposed a working relationship that provides advisory services to improve effectiveness of government programmes specifically aimed at rural transformation.
 - b) Recommendation 2. Make strategic use of the limited IFAD resources and instruments available to Botswana.

Agreed. Management agrees that, in a middle-income country like Botswana, it is particularly important to make strategic use of the limited IFAD resources and instruments available (e.g. results-based lending). In this context, the Government will focus on leveraging its own financial resources towards enhanced development outcomes. In this regard, IFAD is currently discussing possible technical and operation support.
5. Management commends IOE for a thorough and comprehensive evaluation, which brings out useful lessons and recommendations for IFAD's future engagement in Botswana. Management also takes this opportunity to thank IOE for the development of the learning note on agricultural extension in Botswana.

² The Programme Management Department sent the final Management's response to the Independent Office of Evaluation of IFAD on 4 March 2020.

Republic of Botswana

Agricultural Services Support Project

Project Performance Evaluation

I. Evaluation objectives, methodology and process

1. Background. The Independent Office of Evaluation of IFAD (IOE) undertakes project performance evaluations (PPEs) annually for a select number of completed projects. The selection criteria for PPEs include: (i) synergies with forthcoming or ongoing IOE evaluations; (ii) novel approaches; (iii) major information gaps in project completion reports (PCRs); and (iv) geographic balance.
2. Objectives. The main objectives of PPEs are to: (i) assess the results of the programme; (ii) generate findings and recommendations for the design and implementation of ongoing and future operations in the country; and (iii) identify issues of corporate, operational or strategic interest that merit further evaluative work.
3. Scope. The PPE took into account the preliminary findings from the desk review of the PCR and other key programme documents and interviews at IFAD headquarters. During the PPE mission, additional evidence and data were collected through interviews, to validate available information and reach an independent assessment of performance and results. Emphasis was placed on the interviews with subdistrict and extension area workers. The PPE team also prepared a learning note on extension services in Botswana. The learning note has been prepared to better understand the structure and functioning of the extension system in Botswana, its impact on the performance of the Agricultural Services Support Project (ASSP) and the potential lessons for future IFAD interventions in the agriculture sector in Botswana.
4. Methodology and process. The PPE assessed ASSP's performance based on the evaluation criteria set out in the second edition of the IOE Evaluation Manual,¹ as mentioned in the approach paper (annex IV) and annex II of this report. In line with the practice adopted in many other international financial institutions, IOE has used a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest score (highly unsatisfactory).
5. In addition to the desk review, the methods deployed consisted of direct observations and individual and group interviews with programme stakeholders, beneficiaries, former programme staff, and local and national government authorities. There was an emphasis on meeting with subdistrict extension authorities and extension area workers who had implemented the programme activities. The PPE selected a sample of sites for field visits that reflects the variety of project activities implemented. As an example, Jwaneng and Tonota were selected for visiting as they had operational agricultural service centres (ASCs), while Palapye was selected due to the presence of the wastewater irrigation scheme. The conservation agriculture (CA) demonstration groups which were in the vicinity of these interventions were then visited. In addition, the team visited sites in different agro-ecological zones, ranging from dry sandy soil areas in the south to the sandy loamy soil areas in the north east.
6. Data availability and limitations. Generally, PPEs do not engage in extensive primary data collection. Instead, they review the programme's own monitoring and evaluation (M&E) system and conduct spot checks in the field. However, this programme's M&E system is found to be non-existent and lacking in quality and availability even at the output level. Reliable outcome-level

¹ Second edition of IOE Evaluation Manual: <https://www.ifad.org/documents/10180/bfec198c-62fd-46ff-abae-285d0e0709d6>.

data has not been collected. The project lacks a baseline survey. As per the inputs provided by the East and Southern Africa division of IFAD, the procurement procedure for a firm to conduct a baseline survey was unsuccessful in light of lack of interest of national companies and the high prices quoted by companies that put in a bid. Inter alia, as covered in the rural impact section, the impact survey does not establish attribution or contribution, and the difference between test and control groups, where noted, does not elaborate on the statistical significance between them. Most M&E data, where available, were at the output level in the programme documents. Thus, there is little quantifiable evidence available to demonstrate project impact. The PPE has used a theory-based approach to test the causal chains and assumptions needed to move along the impact pathways – from outputs to intermediate outcomes to impact (see theory of change [ToC] in annex V). Towards this end, the PPE used the available M&E data to the extent possible. In addition, the PPE has collected qualitative data during field visits, to fill in data gaps.

II. Project

A. Project context

7. Introduction. Botswana is a landlocked country in Southern Africa. It is bordered by South Africa to the south and south east, Namibia to the west and north, and Zimbabwe to the north east. It is a sparsely populated country with a population of 2 million spanning an area of 582,000 km². A stable political environment with a multiparty democratic tradition characterizes Botswana. General elections are held every five years.
8. Economy. Today, Botswana is an upper-middle-income country with a per capita income of US\$8,258 (current US\$) in 2018.² The extraction and processing of diamonds for export remains Botswana's main growth driver. It accounted for 88 per cent of the country's exports in 2016, even though the mining sector's contribution to GDP has fallen sharply, from 47 per cent in 1986 to about 20 per cent in 2017. Since gaining independence from the United Kingdom, Botswana has been one of the world's fastest growing economies, averaging 5 per cent per annum over the past decade.³ However, its reliance on commodities renders it vulnerable to international market fluctuations.⁴ As of 2017, agriculture contributed 2.2 per cent of GDP.⁵ Botswana remains one of the most unequal countries in the world, with a GINI index of 0.53 in 2015.
9. Agriculture sector. Botswana is not well endowed with agricultural land. Most of the land is semi-arid and only 5 per cent of the land is suitable for arable agriculture. Rainfall is scanty and varies from over 650 mm/year in the North East to less than 250 mm/year in the south west.⁶ There are three categories of land tenure in Botswana; freehold land, state land and tribal land.⁷ As of 2013, freehold land made up about 3 per cent of the total land in Botswana, while tribal lands and state land make up 71 per cent and 26 per cent of the land respectively in Botswana.⁸ As per the agriculture census of 2015, approximately 70 per cent of the rural population derives its livelihood from traditional, dry land, arable agriculture. The average size of the traditional plots is about 5 ha,⁹ which is much higher than many other Sub-Saharan African countries, thus enhancing their dependence on mechanization for farming.
10. Social assistance and subsidy programmes in agriculture and rural development sector. Botswana has used its mineral wealth to finance a slew of public programmes for social assistance, social protection and social security. One of the most prominent of such programmes is the Ipelegeng, a public works programme that employs eligible workers in exchange for a set wage over a period of 20-22 days. The Ministry of Local Government manages the programme. In 2017/18, the wage for one month's work was about BWP 567, and one meal each

² World Bank Databank: <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

³ World Bank Country Context: <https://www.worldbank.org/en/country/botswana/overview>. Accessed on 21st July 2019.

⁴ World Bank, Botswana country page: <https://www.worldbank.org/en/country/botswana/overview#1>, accessed on 26th August 2019.

⁵ Africa Economic Outlook, 2018: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/country_notes/Botswana_country_note.pdf

⁶ Botswana National Medium Term Investment Programme, 2005: <http://www.fao.org/3/af287e/af287e00.pdf>

⁷ Land under this category comprises only three per cent of Botswana's land mass. Freehold land tenure gives the owner perpetual ownership rights and the right to transfer the land parcel without any conditions attached, such as development of the land parcel and consent of the land board or another land authority. State land comprises 26 per cent of Botswana's land mass, and is governed by the State Land Act of 1966. This type of land tenure includes public areas in cities or towns, national parks, forest reserves and other land parcels used by the State. State land is administered by the Department of Lands. Tribal land is held under customary law, and different kinds of property rights exist for it. Under customary or tribal land tenure, while the owner has a right to perpetual use (which can be transferred and inherited), the land remains the property of the State.

⁸ Review of land tenure policy, institutional and administrative systems of Botswana, African Development Bank: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB_BotswanaLandReport_FA.pdf

⁹ Botswana Agricultural Census 2015, Analytical Papers: <http://www.statsbots.org/bw/sites/default/files/publications/Botswana%20Agricultural%20Census%202015%20%20Analytical%20Papers.pdf>

work day was provided at a cost of BWP 100 per month to the Government.¹⁰ This programme was initially conceived as a drought-protection scheme and eventually turned into a poverty-alleviation programme in 2008.¹¹ In the agriculture sector, the MoA of Botswana runs two flagship programmes for crops and livestock respectively, namely ISPAAD and the Livestock Management and Infrastructure Development (LIMID) programme.

11. The Integrated Support Programme for Arable Agriculture Development was introduced in 2008 to address challenges facing arable farmers and the inherent low productivity of the arable subsector, through provision of annual subsidies for crop inputs such as seeds, fertilizers, mechanization services and herbicides. Farmers are categorized, according to the area of production and level of operation, as subsistence farmers (who cultivate up to a maximum of 16 ha), emerging farmers (who cultivate up to a maximum of 150 ha) and commercial farmers (who cultivate over 150 ha). Subsistence farmers are provided with a 100 per cent subsidy on all inputs up to 5 ha (including draught-power-driven tillage services), emerging farmers are provided with 35 per cent subsidies on fertilizers, seeds and herbicides (no tillage services), and commercial farmers are given a 30 per cent subsidy for such inputs.¹² Unlike ISPAAD, LIMID provides one-time subsidies for development of on-farm infrastructure and provision of livestock herds.
12. Youth. According to the National Youth Policy of 2010, youth is defined as including those aged between 15 and 35. Youth make up about 34.6 per cent of the population of Botswana.¹³ However, youth are predominantly concentrated in urban areas, with only 29 per cent residing in rural areas. According to Matandare (2018),¹⁴ youth unemployment is quoted to be very high at 33.3 per cent as of 2016. Some of the attributable factors include lack of diversification, lack of capital-intensive industry and high population growth, with a continually increasing, economically active population.¹⁵
13. Women in agriculture. In Botswana, women play an important role in the agriculture sector. They made up about 57 per cent of the labour force employed in the agriculture sector in 2010. This is an increase from the 40 per cent share of employment in the agriculture sector in 1980.¹⁶ Most recent estimates indicate that about 55 per cent of households in Botswana are headed by women.¹⁷ According to Akinsola and Popovitch (2002),¹⁸ female-headed households in rural Botswana are more likely to suffer poverty and economic marginalization, resulting in them being poorer than their male counterparts. Reasons for this include abandonment by their male partners and a general decline in extended family support. Women tend to

¹⁰ Botswana's Ipelegeng Programme Design and Implementation: Reduction or Perpetuation/Entrenchment of Poverty?, by Keitseope Nthomang:

https://www.researchgate.net/publication/327018269_Botswana's_Ipelegeng_Programme_Design_and_Implementation_Reduction_or_PerpetuationEntrenchment_of_Poverty

¹¹ Botswana Social Protection and Labour Discussion Paper, World Bank:

http://documents.worldbank.org/curated/en/421451468199469145/pdf/860090WP0P1274090Box382163B00PUBLIC00_ACS.pdf

¹² ISPAAD Guidelines Document.

¹³ Botswana Demographic Survey, 2017:

<http://www.statsbots.org.bw/sites/default/files/Botswana%20Demographic%20Survey%20Report%202017.pdf>

¹⁴ Matandare, M. (2018), *Botswana Unemployment Rate Trends by Gender: Relative Analysis with Upper Middle Income Southern African Countries (2000-2016)*, Dutch Journal of Finance and Management. <https://www.djfm-journal.com/download/botswana-unemployment-rate-trends-by-gender-relative-analysis-with-upper-middle-income-southern.pdf>

¹⁵ Diraditsile, K. and Ontetse, M. A. (2017). Lived Experiences and Consequences of Unemployment on Women: An Empirical study of Unemployed Young Women in Mahalapye, Botswana. *Journal of International Women's Studies*

¹⁶ Feminization of agriculture in rural transformation:

<http://documents.worldbank.org/curated/en/790991487093210959/pdf/ACS20815-WP-PUBLIC-Feminization-of-AgricultureWorld-BankFAO-FINAL.pdf>

¹⁷ Quoting Dorcas Mokgato by Xinhua news net in November 2018: http://www.xinhuanet.com/english/2018-11/25/c_137629285.htm

¹⁸ Akinsola, H.A. and Popovich, J.M. (2002). The Quality of Life of Families of Female-Headed Households in Botswana: A Secondary Analysis of Case Studies. *Health Care for Women International*.

head larger-sized households than men, with the result that female-headed households end up having a higher dependency ratio. Female heads of households are usually less educated than male-headed households, thereby limiting their opportunities for non-farm employment.

B. Project implementation

14. Programme area. ASSP activities were implemented in rural areas across 27 subdistricts in all 10 districts of the country, targeting 20,000 smallholder farmers.
15. Programme rationale. ISPAAD costs a large part of the agriculture sector's budget (42 per cent of the recurrent budget of the MoA in 2019/20). In light of the declining trend of revenues from diamond mining and their fluctuating nature, the Government of Botswana wanted to progressively reduce the outgo on subsidies in the agriculture sector. In light of such an imperative, CA was seen as a solution to reduce the dependency of smallholders on inputs and in turn to reduce the outgoings on subsidies to make smallholder agriculture commercially viable.
16. Programme objectives. The overarching goal of ASSP was to contribute towards economic diversification, reduction of rural poverty and of food insecurity, and improved livelihoods of rural communities. The specific developmental objective of ASSP was a viable and sustainable smallholder agricultural sector, based on farming as a business rather than being reliant on subsidies or welfare measures.
17. Target group and targeting approach. According to the design report, there were four main target groups: (i) smallholder households hiring tractors for land preparation and planting; (ii) households which continue to cultivate part of their land using draught animals; (iii) women-led farming households as well as women in married households; and (iv) youth currently engaged in farming plus potential new entrants into the agricultural sector.
18. Programme components. There were three components in the project with subcomponents under them.
19. Component 1: Sustainable agricultural production. This component aimed to achieve a sustainable increase in smallholder agricultural productivity by bridging the gap between current and potential rainfed crop yields as well as demonstrating a viable model for the use of urban wastewater for smallholder irrigation. The component had three subcomponents:
 - a. Subcomponent 1.1: Agricultural mechanization envisaged the formulation of a comprehensive agricultural mechanization strategy, with particular attention to the role of the private sector and privatization of agricultural machinery for enhancing productivity.
 - b. Subcomponent 1.2: Improved rainfed agricultural practices envisaged adaptive research and demonstrations of new agricultural practices including, through farmer field schools, to promote CA.
 - c. Subcomponent 1.3: Pilot scheme for wastewater irrigation intended to establish and operate a 29 ha wastewater irrigation scheme attached to the Palapye wastewater-treatment plant. It aimed to test and demonstrate a viable approach to smallholder irrigation, which could subsequently be used as a model for replication at other wastewater-treatment sites around the country.
20. Component 2: Enabling environment for smallholder agriculture.
 - a. Subcomponent 2.1: Improved delivery of extension services focused on enhancing the capacity of extension service providers, so as to improve their effectiveness. It envisaged training and study tours, transport vehicles for

extension workers and capacity building of agro-dealers to improve the availability of agricultural inputs.

- b. Subcomponent 2.2: Agriculture service centres were to be constructed and equipped. The service centres were to focus on provision of farm inputs, information, training/extension services, financial services and market linkages.
 - c. Subcomponent 2.3: Institutional strengthening envisaged a comprehensive review of the Integrated Support Programme for ISPAAD, which provides free or heavily subsidised seed, fertilisers and tractor services to smallholder and commercial farmers. In addition, strengthening of the M&E system of the MoA was also envisaged.
21. Component 3: Project management. The overall responsibility for project implementation rested with the Department of Crop Production under the MoA. Implementation at field level took place through a decentralized administration framework at district, subdistrict and extension area levels. A project management team (PMT) was located within the crops department of the MoA, to be specifically responsible for managing and monitoring implementation of ASSP. It consisted of a project manager, financial controller, procurement officer, monitoring & evaluation officer, knowledge management and communication specialist and support staff. A project steering committee, chaired by the Deputy Permanent Secretary of Technical Services and consisting of representatives of ISPAAD and ASSP, was convened to provide overarching guidance.
22. Project financing. The project financing tables by source of funds, as well as the utilization by component, are given in the tables below. The disbursement rates of IFAD loan and grant were 31 per cent and 29 per cent respectively. The disbursement of the total planned funding of US\$25 million was 33 per cent as at closure of the project (in US\$ terms).¹⁹

Table 1
Cost tables by financing

<i>Source of funds</i>	<i>Appraisal (in thousand US\$)</i>	<i>% of costs at approval</i>	<i>Actual (in thousand US\$)</i>	<i>% of actual costs</i>	<i>Disbursement rate</i>
Government of Botswana	19 082	76%	6 550.60	79%	34.3%
IFAD Loan	4 040	16%	1 254.87	15%	31%
IFAD Grant	1 611	7%	463	6%	28.7%
Beneficiary contribution	289	1%	-	-	-
Total	25 022		8 269	100%	33%

Source: PCR.

¹⁹ In BWP terms.

Table 2
Project costs by component (In BWP)²⁰

<i>Component</i>	<i>Appraisal (in thousand BWP)</i>	<i>% of costs at approval</i>	<i>Actual (in thousand BWP)</i>	<i>% of actual costs</i>	<i>Disbursement rate</i>
Sustainable Agricultural Production	36 991	22%	14 548	18%	39.3%
Enabling Environment for Smallholder Agriculture	104 873	64%	51 399	65%	49%
Project Management	23 275	14%	13 318	17%	57.2%
Total	165 140		79 266	100%	

Source: PCR.

23. Timeframe. The project was approved in December 2010. The scheduled project implementation duration was 60 months, effective on 22 February 2012 and ending on 31 March 2017. However, due to implementation delays, the project was extended by 18 months and closed on 30 September 2018.

²⁰ The actual figures of utilization by component are not available in US\$ terms in the PCR.

III. Main evaluation findings

A. Project performance and rural poverty impact

Relevance

24. The criteria of relevance will analyse the consistency and alignment of the objectives of ASSP with that of the national policies and programmes. In addition, the criteria of relevance also gives the PPE an opportunity to look at the coherence of the design, the components, the interlinkages and assumptions in achieving the objectives of the project. To that end, the project will test the ToC of the project.
25. Relevance to the objectives of national policies, strategies and programmes. Botswana has had national development plans, which establish its medium-term priorities. The Tenth National Development Plan (April 2009 - March 2016) lays out the priorities for most of the period that ASSP was operational. To that end, the plan stipulates the following objectives for the agriculture sector:
 - (i) increased employment opportunities for the fast-growing labour force; and
 - (ii) provision of a secure and productive environment for agricultural producers and private sector participation. ISPAAD is the flagship programme for crop production in Botswana. The objectives of ASSP are consistent with ISPAAD objectives of:
 - (i) increased grain production; (ii) promotion of food security at national and household level; (iii) commercialization of agriculture through mechanization; (iv) facilitation of access to farm inputs and credit; and (v) improvement of extension outreach. ASSP's objectives are aligned with those of the national development plan and of ISPAAD, to the extent that they aim for an enhancement of crop productivity and production.
26. Relevance and consistency of the design towards achievement of objectives. When assessing the consistency of design, the PPE refers to the design elements at appraisal, as well as the de facto elements of the design which evolved during the implementation.
27. The project targeted those planting under 16 ha of land, classified as subsistence farmers. Some farmers from the emerging category (those planting between 16 ha and 150 ha) were included as well. The extension workers were trained in CA and in turn formed demonstration groups to train the beneficiaries. The end beneficiaries were reached through self-targeting, with membership of demonstration groups optional. This strategy was found to target a mix of poor and relatively better-off households. However, this also meant that project interventions were not targeted to the specific needs of the beneficiaries, especially women and youth.
28. ASSP was foreseen as a programme that would work in close collaboration with ISPAAD, piloting productivity enhancement and cost-effective farming practices that would, in turn, reduce the subsidy bill under ISPAAD. Thus, as seen from the ToC in annex V, ASSP was to first work towards creating an enabling environment by building the capacity of extension services and improving the effectiveness of ISPAAD through a dedicated review of the programme. However, the implicit assumption was that the ISPAAD secretariat and ASSP would interact closely and work to accomplish mutual objectives, as elaborated in the ToC. This did not materialize, as ASSP's implementation structure was de facto parallel to that of ISPAAD at the time of design, and remained so throughout implementation. The evaluation team found no evidence of substantive collaboration between the ISPAAD and ASSP structures. This had significant impact on the performance of ASSP as covered under Effectiveness.
29. The project design did not consider the existing capacities and ownership of the extension services. Although the design report recognized the burden on extension services of implementing ISPAAD, the same was not reflected in the design of interventions. This meant that there was substantial resistance within extension workers to take on ASSP activities. The extension structures at large in Botswana

are geared towards delivery of inputs (ISPAAD driven) rather than delivery of knowledge and skills, as covered in the learning note. This created a dissonance between the objectives of ASSP and the implementation structure. Thus, the assumption that was made at design and reflected in the ToC – that the extension services have the capacity and willingness to implement the project – is found to have been unfulfilled.

30. Notwithstanding the lack of integration between ISPAAD and the lack of capacity and interest at the extension level, one of the fundamental assumptions implicitly made in the design, as reflected in the ToC, was the receptivity of the policy framework to reduce subsidies. This assumption also implied that policymakers would be willing and able to bring about the policy changes that could facilitate the changes in ISPAAD that ASSP envisaged. As an example, and as noted under Effectiveness, one of the biggest hindrances to replicating and scaling up of CA is the unwillingness of mechanization contractors to undertake ripping due to low revenue potential. Under current ISPAAD guidelines, the Government only pays BWP 500 per ha for ripping under CA, while conventional tilling is paid at the rate of BWP 1,060 per ha. Thus, the existing policy framework is not conducive and was not changed during the project to accommodate the successful piloting of CA techniques.
31. Apart from ripping, digging of planting basins is another method of soil tillage under CA. However, this method is highly labour-intensive. The agriculture sector has to compete with social programmes such as Ipelegeng, pushing up wages and making agricultural labour relatively expensive. In addition, as the project's context section notes, villages are mostly populated by older people, with youth mostly concentrated in urban areas. Thus, labour-intensive approaches such as planting basins are not ideal for the Botswana context.
32. Finally, there is an overarching and ambitious assumption that, in light of the existing constraints within conservation agricultural practices, smallholder agriculture can be made commercial without needing subsidies. The evaluation team has constructed a simulation of white maize prices below. This elaborates on the current scenario at farm level and the productivity levels necessary to break even without subsidies from ISPAAD over a farm of 1 ha. Table 3 demonstrates that the productivity at the farm level would have to increase threefold to break even at the farm level. This is before taking into account crop-failure rates, which have ranged an average of 45 per cent from 1979 to 2017.²¹ Thus, taking into account crop-failure rates, the productivity would have to increase sixfold to break even. This figure nullifies two assumptions made at the design stage as below.
33. First, it was assumed in the design that enhancing production through CA would reduce and eliminate subsidies. Literature suggests that CA with zero tillage and no mulching (as in the case of ASSP) has been found to have increased yields by weighted average of about 80 kg/ha.²² This figure is based on a meta analysis of various studies examining different crops, soil types and fertilizer-application practices. While it might not be a fully representative measure for Botswana, it sets the direction and approximate magnitude of the changes that can be expected from CA sites. In Botswana, this implies that the yield could increase by an average of over 30 per cent above the current average yields. These figures demonstrate that CA would have been insufficient to enhance yields and eliminate subsidies.
34. Second, the nearly 45 per cent crop-failure rate also nullifies another big assumption in the logframe at design stage and, by function, in the reconstructed ToC, which reads: "absence of prolonged (multi-year) drought periods in next

²¹ Figure supplied by Botswana Institute for Development Policy Analysis (BIDPA)

²² Meta-analysis of crop responses to conservation agriculture in sub-Saharan Africa" CCAFS (CGIAR) Report No. 12: https://cgspace.cgiar.org/bitstream/handle/10568/41933/CCAFS%20Report_12%20web.pdf

10 years". Given the history of crop failures in Botswana, this assumption appears unrealistic.

Table 3
Breakeven calculation

Input	Quantity per ha	Cost of subsidies		Output *	Price realization
		Price (In BWP)	Total (In BWP)		Value
Seeds	1 bag (10 kg)	400/bag	400	Average yield per ha (approximately 5 bags)	255 kg/ha ²³
Fertilizers	4 bags (200 kg)	400/bag	1 600	Assumed price realization per 50 kg bag	BWP 204 ²⁴
Herbicides	4 litres	50/litre	200		
Mechanization		1 160	1 160		
Average cost of subsidies per ha			3 360	Average revenue per ha	BWP 1 040.40
				Average shortfall per ha	BWP 2 320

Source: ISPAAD Handbook, Botswana Agricultural Marketing Board website and elaboration of the evaluation team.

35. The project logframe contains detailed description of the two outcomes, which feed into the objective and outputs needed to achieve them. The logframe was found to be consistent with programme rationale. Indicator for outcome 2 was found to be ill-defined and not measurable. In addition, the magnitude of change expected was not elaborated under most indicators at the design stage. This precludes any objective assessment of the achievement expected at design against actual achievement.²⁵
36. In summary, the project was designed with untested and unrealistic assumptions. The project logic was unclear on the role and magnitude of the contribution of CA in reducing subsidies. In addition, there was an insufficient appreciation of the context of the country and suitability of CA to such a context. This PPE acknowledges that some of the assumptions, such as the Government's expressed willingness to reform the subsidy regime (ISPAAD), and the integration between ISPAAD and ASSP, might have seemed reasonable at the time of design in the appraisal report. However, the evolving design of the programme did not support these assumptions. In light of such analysis above, the PPE rates performance on relevance as moderately unsatisfactory (3).

²³ Average yield per ha harvested in 2015 as noted by Botswana agriculture census, 2015: <http://www.statsbots.org.bw/sites/default/files/publications/Botswana%20Agriculture%20Census%20Report%20Final%202015..pdf>

²⁴ This is a 100% premium over the reference price of Grade 1 white maize set by Botswana Agriculture Marketing Board for 2018-19 marketing season: http://www.bamb.co.bw/sites/default/files/July%20Prices_1.pdf

²⁵ The logframe in the PCR contains targets for indicators which were not available at design stage.

Effectiveness

37. This section discusses achievement on objectives, outputs and outcomes. The discussion of outcomes will include the progress of respective outputs as well. The outputs of the project, both planned and achieved, are provided in annex VI in the form of a table, and are some of the outputs which are presented in the PCR. The other indicators that are not mentioned in the table were not found in the design report and the evaluation team was not able to verify if such activities did take place in the programme implementation period. The final programme-wide outreach figure is not available in the PCR. The logframe and project-design report contains two main outcomes as below. The outcomes have indicators in the logframe against which effectiveness will be assessed.
- Outcome 1: Sustainable increase in smallholder agricultural productivity.
38. Failure of demonstration plots to show results. The first target indicator of the logframe for this outcome (1 ton/ha in the main cereals staple food, i.e. maize, sorghum or millet) has not been achieved among targeted households. The project trained 15 mechanization officers on agricultural equipment and farm operations in CA. The PCR states that the project had started 621 demonstration plots with mechanized equipment and 78 sites with animal-drawn implements, against a target of 108 each. Also, according to the PCR, 5,017 farmers were said to have been trained in CA practices against a target of 540. Most demonstration plots of CA put in place by the project in the past two years (2017-18) showed anecdotal evidence of yield increase (ranging from 10 per cent to 50 per cent) by using minimum tillage (ripping), when compared with the average yields/ha of the smallholder sector that use conventional ploughing (around 200-300 kgs/ha). The reliability and representativeness of the data provided by the farmers and field extension officers during field visits cannot be verified due to the poor system of M&E in place in the project. In addition, it is difficult to separate the effects of the CA practices from that of weather patterns, due to persistent droughts in the two years (as is noted under food security and agriculture productivity subcriteria). However, even in the best of such cases observed in the field, the yield does not cross 500 kg/ha. The section on relevance covers the ambitious nature of this target and the reasoning for failure of CA practices in enhancing yields.
39. Lack of suitable equipment for conservation agriculture. On account of the low productivity per ha, smallholders have to cultivate around 5 ha to achieve household food security, which can only be obtained through mechanization. For this reason, most smallholders resort to mechanization through subsidized private contractors for ploughing, planting, fertilizing and herbicide spraying. The PCR states that 129 private contractors were trained in CA tillage (or ripping) methods. In spite of doubts over the suitability of CA alone in enhancing yields, as covered in the Relevance section, one of the reasons for lack of uptake of CA tilling practices was a shortage of appropriate equipment (i.e. rippers for the minimum tillage) at the district level. In most districts, there were only two rippers for thousands of farmers.²⁶ Private contractors were found not to have appropriately powerful tractors for ripping in dry seasons. As a result, it was very difficult, if at all possible, to comply with timely soil preparation – a key factor in CA. This was further complicated by the fact that contractors were paid less than half for ripping as compared to conventional tilling, as covered under Relevance.
40. High dropout rates from conservation agriculture demonstration groups. The second indicator for outcome 1 (20 per cent of the target households reporting yield increase for rainfed crops) is difficult to measure beyond the demonstration plots, in absence of reliable data. It has been observed during the evaluation field visits that a large number of group members dropped out from the demonstration

²⁶ Minimum tillage can be done in two ways. One, it can be done as soon as the first rains start and when the soil still has moisture. However, this implies that tilling is time sensitive, thus precluded by the lack of CA equipment. A second method is to do the ripping in the dry months and leave the ripping lines for planting during rains.

groups in the second year. The dropout rate figures are not available in the PCR or with former project staff. Besides the harsh climatic conditions in 2017-18 and 2018-19, one reason for such dropout is the inherent difficulty in upscaling CA in the agricultural context of the smallholder farming system of Botswana, both from a technical point of view (mechanization, mulching and monoculture farming) and in terms of the inability of the extension system to support CA.²⁷

41. Palapye wastewater irrigation scheme – niche success area with lingering concerns. The third indicator of the logframe for outcome 1 was regarding the implementation of a pilot-scheme of wastewater irrigation (a total area of 29 ha cropped and harvested in the irrigation scheme). The scheme included 32 beneficiaries against a target of 29 at design. The irrigation scheme was supposed to use water coming from the water-treatment plant of Palapye town. The scheme was not yet fully operational when the evaluation team visited, as a result of problems experienced in the tendering and procurement procedures, and underestimation of costs which led to deficient de-sludging. The current form in which the scheme is being implemented does not include ultrafiltration equipment at the treatment plant, which poses risks for the health and safety of farmers and workers, and raises concerns regarding the contamination of vegetables being grown.
42. About 5 ha are already under cultivation by 6 of the selected beneficiaries, with a variety of horticultural crops such as cabbage, spinach, tomato, chili pepper, cucumber and watermelon. The results so far are encouraging: the irrigated plots are well operated by the beneficiaries through drip irrigation (beneficiary contribution), with peer-to peer transmission of knowledge and mutual support, both for the cultivation and the commercialization of the products being observed. The beneficiaries have formed a cooperative to market their produce and a water-users association for managing the water supply.

Outcome 2: Favourable enabling environment for smallholder agricultural development

43. The indicator for outcome 2 was well defined in the logframe and not useful for the purpose of the evaluation. Nevertheless, based on the analysis of output indicators in the logframe, and on the findings and conclusion of the PCR, and corroborated by the observation of the current evaluation in the field, it can be deduced that outcome 2 has been only partially achieved.
44. The capacity to deliver extension services has not been improved and shows evident drawbacks. The PCR states that 90 extension workers were trained in extension methodologies across 10 districts, against a target of 270. Here it is important to note that the evaluation team draws a difference between delivery of inputs and delivery of extension services at large. ASSP wanted to enhance the capacity of extension services to deliver beyond inputs. The extension is essentially top-down and supply-driven, based on a "one size fits all" approach of input transfer through the "blanket delivery" (terminology in use in the country) of subsidies by ISPAAD. Inputs delivery, supervision, compliance and control absorb around 80 per cent of the time²⁸ of the field extensionists. This challenges 2.1 in the ToC, which assumes the availability and willingness of extension services to change. In addition, the inability to complete a review of ISPAAD, as of the time of writing this report, also challenges assumption 2.3 made in the ToC. A diagnosis of the challenges facing ISPAAD, and their simultaneous addressal, was an implicit prerequisite for the project, as it was at the time of design. Without willingness and the ability of the extension services to change, along with a lack of review of ISPAAD to lay out what these changes should be, the outcome of creating an enabling environment remained unachieved.

²⁷ As covered in the learning note, extension system of Botswana is geared predominantly towards delivery of inputs.

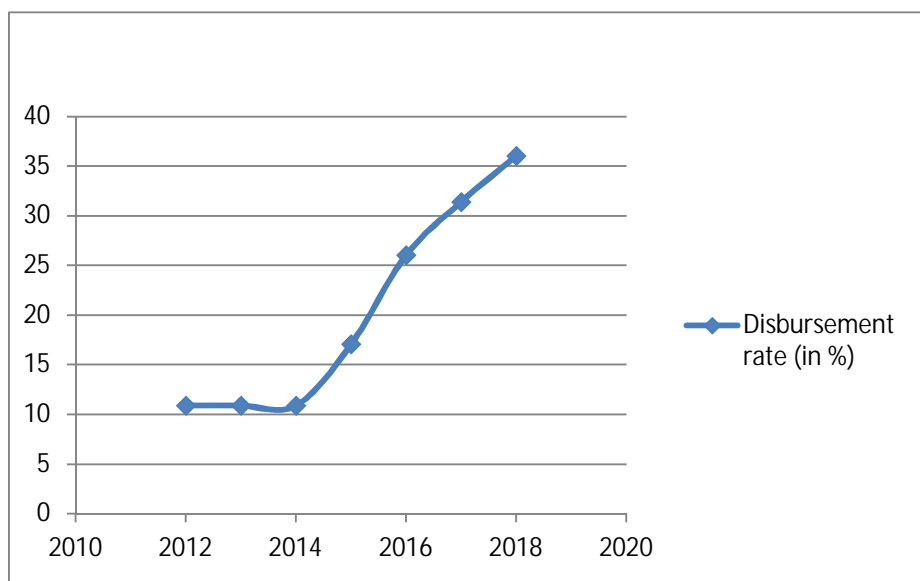
²⁸ This is as per the inputs of the extension staff themselves.

45. Only two of the planned fifteen agricultural service centres were operational at design. Outcome 2 was also to be achieved through the building and implementation of ASCs able to deliver a mix of services supporting the enhancement of the production capacity of the smallholder sector. The ASCs were to provide a scalable model for the government for extension services. Out of the fifteen ASCs foreseen by the project, only two are completed and operational, a third is almost completed and not yet operational, and a fourth is still under construction. A slow start to the project, unrealistic project design (very high number of centres), and recurrent problems in tendering procedures and implementation, among other factors, account for the reduced outputs delivery.
46. Both operational ASCs (Jwaneng and Tonota) were visited during the evaluation mission. One is operated by the parastatal BAMB and functions as a "one-stop shop" for all inputs, like other stores of BAMB elsewhere in the country. The second ASC is managed by a private firm through leasing, and shows some innovative initiatives. This ASC was found to be undertaking numerous activities, such as horticulture sapling production, tractor maintenance and sale of inputs. A farmer visiting the ASC told the evaluation team that he was able to get inputs that would otherwise have to be imported from South Africa. He also reported that training in various agriculture practices was well appreciated.
47. No policy-level work undertaken by ASSP. Outcome 2 was also to be achieved through the refocusing and strengthening of the core agricultural institutional framework that is synonymous with ISPAAD, in crop production. A comprehensive review to enable ISPAAD's revision and the design of an exit strategy was to be carried out during the project. A midterm review was initiated but interrupted because of administrative issues around procurement and lack of sufficient quality of the selected consultant. The process is now under judicial litigation as a result. In addition, the incomplete (and sub judice) review was undertaken by the ISPAAD secretariat and not by ASSP, as originally envisaged. This is also the result of the lack of integration between ASSP and ISPAAD.
48. In summary, the programme has barely met any of its outcomes. As part of the first outcome, the project failed to increase smallholder agricultural productivity. CA practices, through which productivity was to be increased, witnessed no uptake from target groups. The second outcome on a favourable enabling environment for smallholder agriculture development was also largely unachieved, as ISPAAD was not reformed as planned during implementation.
49. Given the non-achievement of project outcomes, the main project objective of a "viable and sustainable smallholder agriculture sector based on farming as a business and not reliant on subsidies or welfare measures" remained unachieved. As shown in the ToC, the pathway conducive to market-driven, smallholder agriculture needs substantial and multi-year surpluses and a profitable input market. This remains unfulfilled under the prevalent conditions – limitations of the smallholder sector, environmental conditions leading to very high crop failures, and the governance of the extension system.
50. Overall, project effectiveness is rated unsatisfactory (2).

Efficiency

51. Start-up and implementation delays. The programme had been approved in December 2010 and was effective in February 2012. There was a lag of 14.75 months between approval and effectiveness. This is more than the average 11.5 months effectiveness lag of all East and Southern Africa Region (ESA) projects approved until 2010 (the year of approval of ASSP). IFAD's first disbursement took place in 2012, followed by a gap of three years when no IFAD funds were disbursed. The project activities in the initial years were affected by long procurement processes (including human resources), project staff turnover and lack of clear understanding of the project design. As covered in the section on assessment of government performance as a partner later in the report, the project saw a change of three project managers until the midterm review in 2014. In addition, most of the key staff were not recruited in the first three years of the project. Thus, there was no progress in activities until such time. The project's activities only began picking up pace in 2015 when the full staff complement of the project management unit was recruited. This is reflected in the disbursement trends in chart 1 below.
52. In addition, the lack of disbursement of IFAD funding was also caused by the perceived cumbersome nature of procedures to be followed and, by contrast, the relative familiarity of project staff with government procedures and preference for utilization of government cofinancing. This explains the higher level of disbursement of government funding and lower level of disbursements for IFAD funds, which stood at 50 per cent and 42 per cent respectively (in BWP terms) at the end of the project.

Chart 1
Trends in disbursement



Source: IFAD Business Intelligence.

53. The implementation of the project was delayed due to issues around the start-up of project activities. Most of the CA demonstration sites were started only in 2016, the penultimate year before project completion. Similarly, only two of the fourteen constructed ASCs (planned construction of fifteen) could be completed and operational as of the completion of the project. The delays in implementation of these activities also led to a no-cost extension of the project by one year.
54. Project costs. The project-management costs at design were meant to be 14 per cent of the total costs. As at the end of the programme, 16 per cent of the

amount disbursed was towards programme-management costs.²⁹ These costs are around the IFAD recommended ceiling of 15 per cent. The programme-management structure was housed in the MoA, and structurally it was part of the MoA. However, one of the drivers of the costs was the countrywide focus of project activities and the spreading thin of project efforts over all 10 districts of Botswana. Given that the total project outreach is not provided in the PCR, it was not possible to calculate the cost per beneficiary.

55. The PCR did not have an internal rate of return (IRR) calculated. This is presumably because reliable data on outputs and outcomes was not available from the M&E system of the project. However, even a cursory look at the outputs earlier in the report indicate that most of the outputs were not achieved and assumptions were not fulfilled, as covered in Relevance. Hence the outcomes were not likely to be achieved, leading to a low IRR and cost-benefit ratio overall.
56. In light of the analysis above, the efficiency of the project is rated as unsatisfactory (2).

Rural poverty impact

57. ASSP did not implement any baseline survey as originally planned and, similarly, no qualitative analysis or case studies at household level were conducted. An "impact survey" was carried out towards the end of the project. However, the survey suffers from shortcomings that make it difficult to use the data. First, the survey does not have a baseline against which to compare any of the indicators. Second, the indicators that are measured are not necessarily measures of impact. For example, the survey only measures how many respondents in treatment and comparison groups report an increase, decrease or similar incomes in 2016 as compared to the previous year. Similarly, the survey also measures how many in the treatment and comparison groups were able to avail subsidies and from what sources agricultural services were availed. Such kinds of questions do not: (a) quantify the impact of the programme in terms of magnitude of increase of income or impact; or (b) establish attribution or even contribution of the project to such outcomes. An example of this lies in measuring the availing of subsidies and the sources of agricultural services in 2016. ASSP did not provide subsidies and none of the avenues envisaged for delivery of such services within ASSP (such as ASCs) was operational at that time. Third, the survey does not establish the statistical significance of the differences between comparison and treatment groups, notwithstanding lack of usefulness of the indicators measured, as covered before. Fourth, the survey follows purposive sampling, which has the potential to skew the results.

Household income and assets

58. As the impact survey of 2016 mentions, there has been no achievement in impact terms as the technology adoption (CA) was absent. The impact study reports that 40 per cent of treatment-group farmers have reported an increase in income in 2016 over 2015, while 42.5 per cent of the comparison group have reported no change in income levels. On the other hand, 34 per cent of the respondents in treatment groups and 47.5 per cent in comparison groups did report a decrease in income over the previous year. However, there is no evidence that the increase was because of ASSP's activities or if its activities mitigated the decrease in incomes resulting from droughts. As has been covered under Effectiveness, the preconditions for outcomes were not in place and no uptake of the pilot demonstration plots for CA took place. The discussions in the field repeatedly attributed this lack of uptake to drought and lack of suitable CA equipment. The wastewater irrigation scheme had very small outreach of 32 beneficiaries and, even there, only a few of them had started utilizing the scheme to grow vegetables. Hence, there cannot be said to be any impact on incomes and household assets.

²⁹ Project Completion Report

Hence, none of the results can be attributed to (or even contributed by) the project, notwithstanding the issues with quality of impact data highlighted earlier.

Human and social capital and empowerment

59. ASSP had little focus on building human and social capital in its design. Some demonstration groups were formed (numbers unavailable) and farmer field schools were constituted, wherein the project tried to mobilize communities to build their capacities, foster social capital and enhance the technical skills of farmers in conservation farming. However, during the field visits the evaluation team found the farmer field schools to be similar to the demonstration groups; there was no substantial capacity building for collective learning or iterative support from extension services in the process, as is the case with farmer field schools.³⁰ Training for CA was found to be ineffective in enhancing the skills of the target groups, which were subject to dropouts by individual beneficiaries as observed by the evaluation team in the field.

Food security and agricultural productivity

60. The project tried to increase the productivity of the farming sector in Botswana through the introduction of CA practices. The PCR states that 15 per cent of households reported increases in productivity, against a target of 20 per cent. However, it does not specify how much that is a proportion of (lack of baseline figure). The evaluation team noticed substantial dropouts from the demonstration groups pertaining to CA plots. It is also unlikely that any increases in the productivity or yield have happened because, as gathered from the field visits, most of the project activities were implemented in 2015/16 and two of the three years starting 2015/16 have been declared drought in Botswana.³¹ In the most recent instance, in 2018/19, it is estimated that Botswana produced only about 5,300 metric tons of cereals, which accounts for 2 per cent of the annual cereal requirement of the country.³² There was no data on the nutritional status of the target groups, except for a goal-level indicator where the PCR reported that child malnutrition level was 21 per cent against a target of 20 per cent. However, there is no elaboration on the source of this figure³³ or any attribution to the project.

Institutions and policies

61. As has been mentioned under Relevance, the second outcome of the project pertained to influencing the enabling environment of the agriculture sector by enabling changes in ISPAAD. However, as has been covered under Effectiveness, not much progress was made under outcome 2. There has been no movement on reviewing and reforming ISPAAD and the subsidy structure. This is mainly due to two major factors. First, as covered under relevance, ASSP and ISPAAD functioned as two separate projects and nearly no coordination took place at any level. Second, there has been a general hesitation in the Government to restructure ISPAAD beyond its current form. The extension system has not been capacitated to promote market-oriented agriculture. Some of the more immediate policy measures to promote CA, such as higher subsidy payout for conventional tillage, have also not been addressed.
62. Overall, the project did not make a substantial impact on any of the four impact domains. There cannot be said to be any intended or unintended positive impacts

³⁰ Covered in the learning note

³¹ Botswana Environment Statistics, Natural Disaster Digest, 2017: http://www.statsbots.org/bw/sites/default/files/publications/Botswana%20Environment%20Natural%20Disaster%20Digest_2017.pdf:

³² Summary report for the drought and household food security vulnerability assessment 2018/19, Ministry of Local Government and Rural Development: <https://reliefweb.int/sites/reliefweb.int/files/resources/DHFS%20Summary%20%20Report%20FINAL%209%20April%202019%20%28002%29.pdf>

³³ Not measured in the impact survey carried out by the project

on incomes, agricultural productivity, human capital or policies. Thus, rural poverty impact is rated unsatisfactory (2).

Sustainability of benefits

63. Sustainability of benefits assesses two aspects, as covered in the evaluation manual: (i) measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn; and (ii) assessing if benefits are environmentally as well as financially sustainable, i.e. the likelihood that actual and anticipated results will be resilient to risks beyond the project's life.
64. Likelihood of continuation of benefits streams. The project had three main strands of activities in its lifetime: (i) conservation agriculture; (ii) construction of ASCs for extending extension services; and (iii) completion and operationalization of a pilot irrigation scheme using wastewater.
65. The promotion of CA involved training extension workers, who in turn trained the farmers on demonstration plots. Farmers were expected to replicate these practices in their fields. The continuation and replication of the pilot demonstration plots has not taken place, as noted during the PPE field visits. In fact, to the contrary, the demonstration plots have witnessed dropouts from existing groups. The factors responsible for this have been covered under the Project and country context, Relevance and Effectiveness sections. These include shortage of labour in rural areas and lack of sufficiently powerful tilling equipment (tractors). Another factor that precluded any benefits and discouraged farmers from continuing and/or replicating conservation tillage methods was the drought-like conditions that prevailed through the farming years of 2017/18 and 2018/19. This alludes to the lack of resilience of CA to the vagaries of nature and climate change-related risks which are so innate to the Botswana context, as also covered under the Project and country context section.
66. The Government is financing the construction of new ASCs after ASSP's closure. However, a more important indicator of sustainability is the ASC's ability to provide the intended extension services and to do so profitably. Of the two functional ASCs in Jwaneng and Tonota, one is run by the BAMB as an outlet for selling inputs and buying farmer produce; it is not undertaking extension work through the service centre as originally envisaged. To that extent, there were no extension activities carried out by BAMB, and hence the question of sustainability does not arise. On the other hand, the activities of selling inputs and buying outputs from farmers is expected to be sustainable, given that BAMB is an established parastatal with sovereign backing. The ASC in Tonota is run by a private company which provides advisory services, sells inputs, services equipment and provides improved plants for horticulture. This ASC is extending the services originally intended and, as per the proprietor's own assessment, these activities are profitable.
67. As covered in Effectiveness, the pilot irrigation programme was found to be partially operational. The horticulture production was found to be a financially rewarding activity with selected target-group members reporting sales of over US\$5,000 per ha per year on average. The average cost of setting up the irrigation scheme is about US\$25,000 per ha, in addition to which another US\$3,000 of investment is required by beneficiaries to make the scheme operational on their lands. Economically, the scheme appears viable for the beneficiaries: the target groups have to invest only US\$3,000 and, even then, they are eligible for a 40 per cent subsidy under ISPAAD. Thus, the target groups are likely to break even within a year, although this might not be the case if the project's total expenditure is taken into account. In addition, the water for irrigation is not filtrated, as originally envisaged during design. It is merely de-sludged at the waste-water plant and sent to the irrigation scheme. Thus, there is a risk of contamination of vegetables, and thus a reputational risk at large for the farmers and the scheme.

68. Overall, the only intervention that showed any signs of sustainability was the wastewater irrigation scheme. However, this intervention was on a pilot scale with only 32 beneficiaries in total. These results are also fraught with risks, which are economic, environmental and reputational in nature. In light of this assessment, the sustainability of benefits is rated as unsatisfactory (2).

B. Other performance criteria

Innovation

69. The ASCs in themselves do not represent an innovation in Botswana. Since 1974, the BAMB has been operating countrywide to provide a market for locally grown, scheduled crops such as cereals, pulses/beans and oilseeds, and to ensure that adequate supplies exist at affordable prices. Thus, the ASC in Jwaneng does not qualify as an innovation *prima facie*, as it acts as a one-stop shop for BAMB. However, the ASC in Tonota has innovative elements, such as the production and sale of seedlings for horticulture, the soil pH analysis and subsequent modulation of fertilization and/or soil correction, in-centre and in-farm demonstration plots, and a workshop for tractor maintenance and repair. Tonota's ASC certainly shows interesting elements, matching the original concept of the centres, which was new to the Botswana context.
70. The use of treated urban wastewater for irrigation is a relatively recent innovation in Botswana and is of high interest to the country, due to its scarce water resources and the need to increase agriculture production. It is new to the Palapye area itself. The pilot irrigation scheme implemented by the project (around 30 ha) uses wastewater from the treatment plant of the municipality of Palapye, and is the second such scheme of considerable size in place and functional in the country. The first operating scheme started in 2003 in Glen Valley (Gaborone) over a potential area of around 100 ha.
71. CA was at the centre of ASSP's interventions. It is not new to the Botswana context, with some similar pilot-scale interventions undertaken by non-governmental organizations in the northern part of Botswana. However, the innovative aspect was to undertake CA on an extension system-wide basis in various agro-ecological zones and, following its success, to mainstream it into the ISPAAD programme.
72. In light of the analysis above, innovation is rated as moderately satisfactory (4).

Scaling up

73. One of the main innovations that the project undertook was CA tillage practices such as ripping and planting basins. However, this innovation was found to be unscalable within the current constraints. The reasons for lack of replication are covered under Relevance. The question therein remains around the viability of upscaling the CA interventions. As has been covered earlier, CA in ASSP has been unable to demonstrate its viability even at the pilot level. There is no evidence that government or any other development actor was willing to upscale the project.
74. A second innovative approach pertains to the wastewater irrigation scheme. This scheme involved using wastewater to irrigate horticulture plots of 29 ha. However, there are constraints that remain in upscaling the intervention. The fixed cost of erecting the scheme is US\$25,000 per ha. This is without the filtration plant that was foreseen at the inception stage. The evaluation team was informed that, with a filtration plant to ensure the quality of water, per ha costs were expected to double. Thus, the cost of installation of the scheme poses an impediment to its upscaling. Thus, not only are individual interventions not scaled up, they also lack scalability. However, the IOE team was informed that the Government of Botswana is looking for ways to scale up the wastewater irrigation scheme. No concrete initiatives were elaborated at the time of writing this report.

75. Based on the above, scaling up is rated as moderately unsatisfactory (3).

Gender equality and women's empowerment

76. Feminization of agriculture remains a reality of the agriculture sector in Botswana, as covered in the Project context section. Women undertake a lot of activities on the farm in terms of planting, spraying and harvesting. To that extent, women were identified as one of the four targeted groups and gender quotas were stipulated for some activities. However, the project design was not explicit and intentional about the gender equality and women's empowerment. The constraints faced by women, in terms of burden of household activities as well as farming, were not systematically considered to suggest programme interventions. For example, planting basins is not a suitable measure for women smallholders, as it requires intensive manual labour. In addition, there was no explicit focus on gender-sensitive livelihood activities at the design stage.
77. The PCR underscored that "any gender and social inclusion outcomes were achieved by default and not necessarily through any deliberated effort". This PPE validates such analysis against the backdrop of the important role played by women in planting and harvesting of crops, as noticed in the field. There was no gender-disaggregated data available in the PCR, which is part of a broader problem wherein the project outreach figures are not available either. The PCR states that the only activity where an established quota for women was implemented as planned (30 per cent of the beneficiaries) was the pilot wastewater irrigation scheme.
78. Overall, at the design stage ASSP's activities were found to give insufficient attention to gender issues. There was no analysis of the constraints that women face in agriculture in Botswana and how the project would address them. The project activities were gender blind too, with no particular emphasis on women or the realities of their livelihoods in term of their prime role in physical work on the farms. The PCR alludes to such a conclusion too when it says that the project activities were not "gender specific".
79. In light of the above analysis, gender equality and women's empowerment is rated as unsatisfactory (2).

Environment and natural resource management

80. Botswana has two main problems with natural resource management in the agriculture sector. First, there is a lack of availability of water, with rainfalls unevenly distributed and scarce. The second is the poor quality of soils, with no water-retention capacity. The project tried to address the first through wastewater irrigation. This was found to have worked satisfactorily, notwithstanding the high cost of installation per ha, which has been covered under Sustainability and Scaling up respectively. However, the quality of water being supplied is concerning, as it was de-sludged but not filtered. Thus, risks of contamination of horticulture produce remained high.
81. The second issue of soil quality was sought to be mitigated through CA. This would have involved minimum tillage and soil disturbance, which in turn would have increased moisture retention and nutrient-carrying capacity to some extent. However, CA methods could not be implemented. Thus, there was no substantial impact on natural resource management as a result of the project, with some results seen on a small scale as a result of the wastewater irrigation scheme.
82. In light of the analysis above, the performance on environment and natural resource is rated as moderately unsatisfactory (3).

Adaptation to climate change

83. Adaptation to climate change involves strengthening the resilience of existing livelihood options and diversifying into other ones. At a conceptual level, ASSP was

to reduce the dependence of the agriculture sector on subsidies and to partly adapt the sector to low and erratic precipitation levels and poor soil conditions. The CA plots witnessed large dropout rates in light of the prevailing droughts, thus indicating a lack of resilience to climatic shocks. A marginal success on climate change adaptation is the wastewater irrigation facility. This pilot scheme has been able to decouple the agricultural production from levels of rainfall in Botswana, at least at the pilot level. No diversification of livelihood options was foreseen or undertaken under ASSP.

84. In light of the analysis above, climate change adaptation is rated moderately unsatisfactory (3).

C. Overall project achievement

85. Overall, the project had some achievement at the output level but very little at the outcome level. At the output level, there were only two substantive results that looked promising. The first was that pertaining to the wastewater irrigation scheme. It also looked promising in outcome terms, the full extent of which is yet to materialize. However, it was a pilot scheme and the evaluation team has reservations with regards to its replication on a large scale. This is due to teething problems and delays during implementation, and the high per capita cost of the scheme as covered under Scaling up. Second, the number of demonstration plots (621 against planned 108) and the number of people trained in CA (5,017 against planned 540) seem large. However, as has been mentioned in Relevance, there is no systematic uptake of CA and there are certainly no outcomes in terms of improved yields reported as a result of the adoption of CA. Thus, no progress was made beyond the output level. ASSP's attempts to reform the ISPAAD were unsuccessful, inter alia, due to the lack of integration between ISPAAD and ASSP and a general lack of ownership in the Government to coordinate and effect these changes.
86. In light of this analysis, overall project achievement is rated unsatisfactory (2).

D. Performance of partners

IFAD

87. Design. As covered under Relevance, IFAD designed the project based on unrealistic assumptions that the production could be increased fourfold to 1 ton/ha by relying on CA. This would still be insufficient for smallholders to break even, in the absence of subsidies. It made numerous assumptions, ranging from readiness and willingness of the Government for institutional reform, to the viability of CA in Botswana and weather conditions and drought. However, as covered under Relevance, most of the assumptions were unfulfilled and unrealistic.
88. The PPE also notes that the design report mentions that originally the Government of Botswana had asked for IFAD to only construct ASCs under the auspices of ISPAAD. However, the design report states that "ISPAAD objectives would be best achieved by a broader package of IFAD support including improved agronomic and mechanisation options supported by soft investments such as extension services, farmer training, adaptive research, technical assistance, knowledge management, and special initiatives for inclusion of disadvantaged and vulnerable groups". This indicates that the ambitious and, at times, unrealistic design comes from IFAD's end and not so much at the Government's request.
89. Supervision and oversight. Beyond the design itself, IFAD has fielded regular missions to support the project. The quality of supervision missions has been variable, centred on improving the execution rate of numerous activities. IFAD missions focused throughout on minute details, attempting to resolve problems in the start-up of activities, especially those pertaining to the wastewater irrigation scheme, and M&E. A midterm review contemplated closing down the project in the absence of any progress in implementation. However, none of the supervision

missions questioned the logic of the project or the assumptions of its design. IFAD approved a one-year, no-cost extension to facilitate a higher implementation rate of the programme, which helped to expedite output achievement to some extent. IFAD has also had three different country programme managers during the life of the programme, with one manager designing the programme and the other two having the responsibility of managing it for most of its life.

90. In light of the narrative above, the performance of IFAD is rated as moderately unsatisfactory (3).

Government

91. Programme management. The MoA was the implementing agency of the project, with responsibility for recruiting the project management team. However, as of the midterm review in 2014, significant PMT positions, even those leading major components of the project, had not been filled or had been filled on a part-time basis. As of 2014, only the project manager, deputy project manager and the irrigation and mechanization officer positions were filled on a full-time basis.³⁴ Most government staff were deputed from line ministries, maintaining their previous work duties and assuming new responsibilities. Even then, the project manager changed three times until the midterm review, which significantly disrupted the implementation of the project. The lack of staff capacity in the project management unit led to slow follow-up of mission recommendations and ultimately low degrees of execution. The project's M&E function was found to be missing, with data on outputs hard to find for the evaluation team. The M&E officer position was filled up only in the final three years of the project. M&E as a function was given little priority during implementation of the programme.
92. Fiduciary management and government financing. The implementation of the wastewater irrigation scheme went through multiple iterations of design and re-design, and pricing in the tender, until the procurement could be finalized. Procurement procedures were found to be one of the reasons for delay. The recruitment process (procurement from open market) for project staff also took time and thus delayed full staffing of the PMT. Government financing at design was envisaged at US\$19 million of the total US\$25 million, in comparison to IFAD's envisaged contribution of US\$4.6 million. As at completion, in US\$ terms, the Government paid over a third of its originally planned share (US\$6.5 million) against IFAD's disbursement of 31 per cent of its contribution. In fact, until the midterm review, the Government had contributed a significant share of the funds spent and IFAD's supervision missions had to actively encourage the project to use IFAD funding too. Thus, government financing has been forthcoming and made readily available. A major factor behind such utilization of government funding is the relative familiarity of project staff with government's fiduciary and financial procedures. On the other hand, project staff were unfamiliar with IFAD's withdrawal application procedures and found such procedures cumbersome to follow. Given the disparity in the volume of funding from IFAD and the Government, there was an expectation from the latter that the project should follow its financial-management procedures. The imbalance between disbursement of government funding and IFAD funds was addressed, starting from the midterm review, with IFAD agreeing to use the Government's system of financial disbursement and reporting.
93. Strategic coordination and reforms. The programme's activities lacked ownership on the ground at district level, with the authorities occupied with implemented ISPAAD. Even within the Ministry, ISPAAD lacked any coordination with ASSP programme and the Government did not ensure any coordination between the two. The Government's lack of action on amending the guidelines of

³⁴ Midterm review.

ISPAAD, to ensure a higher price for contractors for ripping, precluded any substantive testing and scaling up of CA.

94. In light of the narrative above, the performance of the Government is rated as moderately unsatisfactory (3).

E. Assessment of the quality of the project completion report

95. Scope. The PCR covers the core criteria of relevance, effectiveness, efficiency and sustainability, as prescribed under IFAD PCR guidelines. However, there is no narrative on impact domains such as household incomes and assets, food security and agricultural productivity, institutions and policies. In addition, other criteria such as gender equality and women's empowerment, access to markets and potential for scaling up are not covered in the PCR. Hence, the scope of the PCR is rated as unsatisfactory (2).
96. Quality (PCR methods, process and data quality). The quality of data presented in the PCR is found to be poor and unsubstantiated. The outputs provided in tables 2, 3, 4, 5 and 6 of the PCR are found to contain data that were largely unsubstantiated during field visits. Most of the output targets appear only in the PCR and not in the design, and hence the source of the baseline targets in such tables is unclear. Notwithstanding problems with the impact survey of 2017, as highlighted in the Rural poverty impact section earlier, the PCR does not make any mention of the survey or the data within. The PCR draft was based on stakeholder consultations within the country, and the same is documented in the PCR. In light of this assessment, the PCR is rated as moderately unsatisfactory (3) on quality and data.
97. Lessons. The quality of lessons is mixed. The PCR provides good lessons as pertains to the fiduciary aspects of the programme such as procurement and programme management. However, it wrongly quotes activities around CA as successful, as can be seen from the broader analysis in this PPE report. In addition, the lessons do not speak about substantive issues with design processes and lessons for the future in designing projects in Botswana. In light of this assessment, the lessons in the PCR are rated as moderately unsatisfactory (3).
98. Candour. The PCR is found to be largely frank and open in admitting the shortcomings of the project. However, at times, the ratings do not correspond to the narrative or are not supported by any evidence. The candour of the PCR is rated as moderately unsatisfactory (3).

IV. Findings, conclusions and recommendations

A. Conclusions

99. Overall, the project was designed without much consideration for the country context and the suitability of interventions within. Such contextual considerations include sufficient analysis of the institutional ownership for programmes such as ASSP, agro-ecological factors and the political will to undertake reforms. This lack of sufficient appreciation for the country context led to two particular outcomes. First, it led to a design that was not suitable for the project's objectives of increasing productivity and reducing subsidy burden; the design also had disparate components and sets of activities, none of which addressed the objectives suitably. Second, the project was implemented in isolation and without government ownership, instead of operating in tandem with the ongoing ISPAAD programme as was originally envisaged.
100. The overarching focus of the government on ISPAAD manifests itself in the form of an extension system, which is driven by input transfer. As covered in the learning note, the extension system exercises most of its effort and resources (42 per cent of the revenue budget of the MoA) in delivering the subsidies under ISPAAD and ensuring compliance with subsidy conditions. Such a system is not necessarily in consonance with the focus of IFAD programmes in general and with ASSP in particular in building human and social capital. The inability of the extension system to build such capacity is most visible in its inability to sustain and scale up the CA sites and farmer field schools. This has remained true since the start of ASSP, and the factors leading to the shortcomings covered above remain unchanged.
101. The lack of realism in design and lack of government ownership meant that programme interventions failed to show results on the ground, as in the case of CA sites. Isolated implementation meant that ASSP activities did not have necessary ownership among extension officers and workers at the district, subdistrict and extension area-levels either. Thus, lack of a realistic design and lack of ownership of the project at all levels led to slow implementation and overall failure of the project. The only exception to such failure is in niche intervention areas such as the wastewater irrigation scheme, wherein there was a high level of ownership of the Government.

B. Recommendations

102. In Botswana, IFAD is faced with serious environmental challenges, limited implementation capacity of the government, ample government fiscal capacity and a lack of allocation of IFAD funding for investment projects in the near future. Thus, any recommendations for future IFAD engagement in Botswana should take these factors into account in formulating recommendations.
103. Recommendation 1. IFAD should identify its strategic role in the context of Botswana, the value added of its operations. This may involve an in-depth and realistic analysis of the development challenges facing Botswana and the nature of interventions that IFAD can realistically undertake to address them. These selected areas of engagement should be codified in the form of a country strategy note or COSOP, as applicable. Some potential areas of engagement that IFAD could consider include backstopping and capacity building of existing flagship government programmes, testing of low-cost irrigation models and subsidy-rationalization models.
104. Recommendation 2. Make strategic use of the limited IFAD resources and instruments available in Botswana. In the absence of an allocation under the performance-based allocation system, IFAD can operate through regional and country-specific grants or reimbursable technical assistance. Any such instruments should be deployed towards interventions that can have a multiplier effect or those

that can be potentially scaled up by government using its own funding. To that extent, IFAD should confine its future interventions to a focused scope of activities and pilot initiatives, in line with government policy priorities and capacities and IFAD's strategic focus, without engaging in a wide range of activities as in the case of a conventional IFAD investment programme. As mentioned in the first recommendation, engagement with existing government programmes could be a potential starting point.

Basic project data

			Approval (US\$ m)		Actual (US\$ m)	
Region	East and Southern Africa	Total project costs	22.02		8.27	
Country	Botswana	IFAD loan and grant and % of total	5.64	22.5%	1.72	21%
Loan number	1546	Borrower	19.08	76.3%	6.55	79%
Type of project (subsector)		Beneficiaries	0.28	1.1%	-	
Financing type	Loan and Grant	Number of beneficiaries: (if appropriate, specify if direct or indirect)	10,000			-
Lending terms	Ordinary Terms					
Date of approval	05/12/2010	Loan closing date	30/09/2017		30/09/2018	
Date of loan signature	21/02/2012	Mid-term review			2014	
Date of effectiveness	21/02/2012	IFAD loan disbursement at project completion (%)	32.37% (Loan) 36.35% (Grant)			
Loan amendments	-	Date of project completion report	07/11/2018			
Loan closure extensions	1					
Country programme managers	Philipp Baumgartner Robson Mutandi Geoffrey Livingston					
Regional director(s)	Sara Mbago-Bhunu Sana A. Jatta Perin Saint Ange					
Lead evaluator for project performance evaluation	Prashanth Kotturi					
Project performance evaluation quality control panel	Johanna Pennarz Suppiramaniam Nanthikesan Fabrizio Felloni					

Source: IFAD Oracle Business Intelligence.

Definition and rating of the evaluation criteria used by IOE

Criteria	Definition *	Mandatory	To be rated
Rural poverty impact	Impact is defined as the changes that have occurred or are expected to occur in the lives of the rural poor (whether positive or negative, direct or indirect, intended or unintended) as a result of development interventions.	X	Yes
	<i>Four impact domains</i>		
	<ul style="list-style-type: none"> Household income and net assets: Household income provides a means of assessing the flow of economic benefits accruing to an individual or group, whereas assets relate to a stock of accumulated items of economic value. The analysis must include an assessment of trends in equality over time. 		No
	<ul style="list-style-type: none"> Human and social capital and empowerment: Human and social capital and empowerment include an assessment of the changes that have occurred in the empowerment of individuals, the quality of grass-roots organizations and institutions, the poor's individual and collective capacity, and in particular, the extent to which specific groups such as youth are included or excluded from the development process. 		No
	<ul style="list-style-type: none"> Food security and agricultural productivity: Changes in food security relate to availability, stability, affordability and access to food and stability of access, whereas changes in agricultural productivity are measured in terms of yields; nutrition relates to the nutritional value of food and child malnutrition. 		No
	<ul style="list-style-type: none"> Institutions and policies: The criterion relating to institutions and policies is designed to assess changes in the quality and performance of institutions, policies and the regulatory framework that influence the lives of the poor. 		No
Project performance	Project performance is an average of the ratings for relevance, effectiveness, efficiency and sustainability of benefits.	X	Yes
Relevance	The extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs, institutional priorities and partner and donor policies. It also entails an assessment of project design and coherence in achieving its objectives. An assessment should also be made of whether objectives and design address inequality, for example, by assessing the relevance of targeting strategies adopted.	X	Yes
Effectiveness	The extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance.	X	Yes
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted into results.	X	Yes
Sustainability of benefits	The likely continuation of net benefits from a development intervention beyond the phase of external funding support. It also includes an assessment of the likelihood that actual and anticipated results will be resilient to risks beyond the project's life.	X	Yes
Other performance criteria			
Gender equality and women's empowerment	The extent to which IFAD interventions have contributed to better gender equality and women's empowerment, for example, in terms of women's access to and ownership of assets, resources and services; participation in decision making; work load balance and impact on women's incomes, nutrition and livelihoods.	X	Yes
Innovation	The extent to which IFAD development interventions have introduced innovative approaches to rural poverty reduction.	X	Yes
Scaling up	The extent to which IFAD development interventions have been (or are likely to be) scaled up by government authorities, donor organizations, the private sector and others agencies.	X	Yes
Environment and natural resources management	The extent to which IFAD development interventions contribute to resilient livelihoods and ecosystems. The focus is on the use and management of the natural environment, including natural resources defined as raw materials used for socio-economic and cultural purposes, and ecosystems and biodiversity - with the goods and services they provide.	X	Yes

<i>Criteria</i>	<i>Definition</i> *	<i>Mandatory</i>	<i>To be rated</i>
Adaptation to climate change	The contribution of the project to reducing the negative impacts of climate change through dedicated adaptation or risk reduction measures.	X	Yes
Overall project achievement	This provides an overarching assessment of the intervention, drawing upon the analysis and ratings for rural poverty impact, relevance, effectiveness, efficiency, sustainability of benefits, gender equality and women's empowerment, innovation, scaling up, as well as environment and natural resources management, and adaptation to climate change.	X	Yes
Performance of partners			
• IFAD	This criterion assesses the contribution of partners to project design, execution, monitoring and reporting, supervision and implementation support, and evaluation. The performance of each partner will be assessed on an individual basis with a view to the partner's expected role and responsibility in the project life cycle.	X	Yes
• Government		X	Yes

* These definitions build on the Organisation for Economic Co-operation and Development/Development Assistance Committee (OECD/DAC) Glossary of Key Terms in Evaluation and Results-Based Management; the Methodological Framework for Project Evaluation agreed with the Evaluation Committee in September 2003; the first edition of the Evaluation Manual discussed with the Evaluation Committee in December 2008; and further discussions with the Evaluation Committee in November 2010 on IOE's evaluation criteria and key questions.

Rating comparison^a

<i>Criteria</i>	<i>Programme Management Department (PMD) rating</i>	<i>Project Performance Evaluation rating</i>	<i>Rating disconnect</i>
Rural poverty impact	2	2	0
Project performance			
Relevance	3	3	0
Effectiveness	2	2	0
Efficiency	3	2	-1
Sustainability of benefits	3	2	-1
Project performance	2.75	2.25	-0.5
Other performance criteria^b			
Gender equality and women's empowerment	3	2	-1
Innovation	3	4	+1
Scaling up	4	3	-1
Environment and natural resources management	4	3	-1
Adaptation to climate change	4	3	-1
Overall project achievement^c	3	2	-1
Performance of partners^d			
IFAD	3	3	0
Government	3	3	0
Average net disconnect			-0.41

^a Rating scale: 1 = highly unsatisfactory; 2 = unsatisfactory; 3 = moderately unsatisfactory; 4 = moderately satisfactory; 5 = satisfactory; 6 = highly satisfactory; n.p. = not provided; n.a. = not applicable.

^b Arithmetic average of ratings for relevance, effectiveness, efficiency and sustainability of benefits.

^c This is not an average of ratings of individual evaluation criteria but an overarching assessment of the project, drawing upon the rating for relevance, effectiveness, efficiency, sustainability of benefits, rural poverty impact, gender, innovation, scaling up, environment and natural resources management, and adaptation to climate change.

^d The rating for partners' performance is not a component of the overall project achievement rating.

Ratings of the project completion report quality

	<i>PMD rating</i>	<i>IOE rating</i>	<i>Net disconnect</i>
Scope		2	
Quality (methods, data, participatory process)		3	
Lessons		3	
Candour		3	
Overall rating of the project completion report		3	

Rating scale: 1 = highly unsatisfactory; 2 = unsatisfactory; 3 = moderately unsatisfactory; 4 = moderately satisfactory; 5 = satisfactory; 6 = highly satisfactory; n.a. = not applicable.

Approach paper

A. Background and country context

1. Background of the evaluation. For completed investment projects financed by IFAD, the Independent Office of Evaluation (IOE) undertakes project performance evaluations (PPEs) involving country visits for selected projects (about 8-10 in a given year).¹
2. A PPE is conducted after a desk review of the project completion report (PCR) and other available documents, with the aim of providing additional evidence on project achievements and validating the conclusions of the PCR. The main objectives of PPEs are to: (i) assess the results of the project; (ii) generate findings and recommendations for the design and implementation of ongoing and future operations in the country; and (iii) identify issues of corporate, operational or strategic interest that merit further evaluative work. The Agriculture Services Support Project (ASSP) in Botswana has been included in the 2019 IOE work programme and budget and will be undertaken between April and October 2019.
3. Country context. Botswana is a landlocked country in Southern Africa. It is bordered by South Africa to the south and south-east, Namibia to the west and north, and Zimbabwe to the north-east. It is a sparsely populated country with a population of 2 million. Over 581,000 sq km, Botswana is characterized by a stable political environment with a multiparty democratic tradition. General elections are held every five years. The ruling Botswana Democratic Party has been in power since 1966. Since gaining independence from the United Kingdom, Botswana has been one of the world's fastest growing economies, averaging 5 per cent per annum over the past decade.²
4. Botswana's main growth driver remains the extraction and processing of diamonds for export. It provided 88 per cent of the country's exports in 2016, even though the mining sector's contribution to GDP has fallen sharply, from 47 per cent in 1986 to about 20 per cent in 2017. As of 2017, agriculture contributed 2.2 per cent of GDP.³ Botswana is not well endowed with agricultural land. Most of the land is semi-arid and hence only 5 per cent is suitable for arable agriculture. Rainfall is also scanty and varies from over 650 mm/year in the north-east to less than 250 mm/year in the south-west.⁴ There are three categories of land tenure in Botswana: freehold land, state land and tribal land.⁵ As of 2013, freehold land makes up about 3 per cent of the total land in Botswana, while tribal lands and state land make up 71 per cent and 26 per cent of the land respectively.⁶

¹ The selection criteria for PPE include: (i) information gaps in PCRs; (ii) projects of strategic relevance that offer enhanced opportunities for learning; (iii) a need to build evidence for forthcoming corporate level evaluations, country strategy and programme evaluations or evaluation synthesis reports; and (iv) a regional balance of IOE's evaluation programme.

² World Bank Country Context: <https://www.worldbank.org/en/country/botswana/overview>. Accessed on 21st July 2019.

³ Africa Economic Outlook, 2018: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/country_notes/Botswana_country_note.pdf

⁴ Botswana National Medium Term Investment Programme, 2005: <http://www.fao.org/3/af287e/af287e00.pdf>

⁵ Land under this category comprises only three per cent of Botswana's land mass, as indicated in Table 2.1. Freehold land tenure gives the owner perpetual ownership rights and the right to transfer the land parcel without any conditions attached, such as development of the land parcel and consent of the land board or another land authority. State land comprises 26 per cent of Botswana's land mass, as indicated in Table 2.1, and is governed by the State Land Act of 1966. This type of land tenure includes public areas in cities or towns, national parks, forest reserves and other land parcels used by the State. State land is administered by the Department of Lands. Tribal land is held under customary law, and different kinds of property rights exist for it. Under customary or tribal land tenure, while the owner has a right to perpetual use (which can be transferred and inherited), the land remains the property of the state.

⁶ Review of land tenure policy, institutional and administrative systems of Botswana, African Development Bank: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB_BotswanaLandReport_FA.pdf

B. Programme overview

5. Programme area. ASSP activities were implemented in rural areas across 27 subdistricts in all 10 districts of the country, targeting 20,000 smallholder farmers.

Programme objectives. The overarching goal of ASSP was to contribute towards economic diversification, reduction of rural poverty and food insecurity, and improved livelihoods of rural communities. The specific developmental objective of ASSP was the achievement of a viable and sustainable smallholder agricultural sector based on farming as a business, not reliant on subsidies or welfare measures.

Target group and targeting approach. According to the design report there were four main target groups: (i) smallholder households hiring tractors for land preparation and planting; (ii) households that continue to cultivate part of their land using draught animals; (iii) women-led farming households as well as women in married households; and (iv) youth currently engaged in farming and potential new entrants into agricultural sector.

6. Programme components. There were three components in the project with subcomponents under them.
7. Component 1: Sustainable agricultural production. This component aimed to achieve a sustainable increase in smallholder agricultural productivity by bridging the gap between current and potential rainfed crop yields, as well as demonstrating a viable model for the use of urban wastewater for smallholder irrigation. The component had three subcomponents:
- Subcomponent 1.1: Agricultural mechanization envisaged the formulation of a comprehensive agricultural mechanisation strategy, with particular attention to the role of the private sector and privatization of agricultural machinery for enhancing productivity.
 - Subcomponent 1.2: Improved rainfed agricultural practices envisaged adaptive research and demonstrations of new agricultural practices, including through farmer field schools, to promote CA.
 - Subcomponent 1.3: Pilot scheme for wastewater irrigation intended to establish and operate a 29 ha wastewater irrigation scheme attached to the Palapye wastewater treatment plant. It aimed to test and demonstrate a viable approach to smallholder irrigation, which could subsequently be used as a model for replication at other wastewater treatment sites around the country.
8. Component 2: Enabling environment for smallholder agriculture.
- Subcomponent 2.1: Improved delivery of extension services will focus on enhancing the capacity of extension-service providers so as to improve their effectiveness. It envisaged training and study tours, transport vehicles for extension workers and capacity building of agrodealers to improve the availability of agricultural inputs.
 - Subcomponent 2.2: Agriculture service centres were to be constructed and equipped. The service centers were to focus on provision of farm inputs, information, training/extension services, financial services and market linkages.
 - Subcomponent 2.3: Institutional strengthening envisaged a comprehensive review of ISPAAD, which provides free or heavily subsidized seed, fertilizers and tractor services to smallholder and commercial farmers. In addition, strengthening of M&E within the MoA was also envisaged.
9. Component 3: Project management. A PMT was envisaged to be located within the Crops Department of the MoA, to be specifically responsible for managing and monitoring implementation of ASSP. A project steering committee of concerned stakeholders was envisaged to provide overarching guidance.

10. Project financing. The project-financing tables, by source of funds, as well as the utilization by component, are given in the tables below. The disbursement rates of IFAD loan and grant were 31 per cent and 29 per cent respectively. The disbursement of the total envisaged funding of US\$25 million was 33 per cent as at closure of the project.

Table 1
Cost tables by financing

<i>Source of funds</i>	<i>Appraisal (in thousand US\$)</i>	<i>% of costs at approval</i>	<i>Actual (in thousand US\$)</i>	<i>% of actual costs</i>
Government of Botswana	19 082	76%	6 550.6	79%
IFAD Loan	4 040	16%	1 254.87	15%
IFAD Grant	1 611	7%	463	6%
Beneficiary contribution	289	1%	-	-
Total project costs	25 022		8 269	

Source: PCR.

Table 2
Project costs by component (BWP)*

<i>Component</i>	<i>Appraisal (in thousand BWP)</i>	<i>% of costs at approval</i>	<i>Actual (in thousand BWP)</i>	<i>% of actual costs</i>
Sustainable Agricultural Production	36 991	22%	14 548	18%
Enabling Environment for Smallholder Agriculture	104 873	64%	51 399	65%
Project Management	23 275	14%	13 318	17%
Total	165 140		79 266	

*The component actual figures of utilization are not available in the PCR.

Source: PCR.

11. Timeframe. The project was approved in December 2010. The scheduled project implementation duration was 60 months, effective 22 February 2012 and ending 31 March 2017. However, due to implementation delays, the project was extended by 18 months and closed on 30 September 2018.

C. PPE scope and methodology

12. The PPE exercise will be undertaken in accordance with IFAD's Evaluation Policy⁷ and the IFAD Evaluation Manual (second edition, 2015). Analysis in the PPE will be assisted by a review of a reconstructed ToC, as depicted in annex 1, to assess the extent to which ASSP's objectives were effectively achieved.
13. Scope. In view of the time and resources available, the PPE is generally not expected to undertake quantitative surveys or to examine the full spectrum of project activities, achievements and drawbacks. Rather, it will focus on selected key issues. The PPE will take account of the preliminary findings from a desk review of the PCR and other key project documents and interviews at IFAD headquarters. During the PPE mission, additional evidence and data will be collected to verify

⁷ <http://www.ifad.org/pub/policy/oe.pdf>

available information and reach an independent assessment of performance and results.

14. Evaluation criteria.⁸ In line with the second edition of IOE's Evaluation Manual (2015), the key evaluation criteria applied in PPEs in principle include the following:
- (i) Relevance, which is assessed both in terms of alignment of project objectives with country and IFAD policies for agriculture and rural development and the needs of the rural poor, and the project design features geared to the achievement of project objectives.
 - (ii) Effectiveness, which measures the extent to which the project's immediate objectives were achieved, or are expected to be achieved, taking into account their relative importance.
 - (iii) Efficiency, which indicates how economically resources/inputs (e.g. funds, expertise, time, etc.) are converted into results.
 - (iv) Rural poverty impact, which is defined as the changes that have occurred or are expected to occur in the lives of the rural poor (whether positive or negative, direct or indirect, intended or unintended) as a result of development interventions. Four impact domains are employed to generate a composite indication of rural poverty impact: (i) household income and assets; (ii) human and social capital and empowerment; (iii) food security and agricultural productivity; and (iv) institutions and policies. A composite rating will be provided for the criterion of "rural poverty impact" but not for each of the impact domains.
 - (v) Sustainability of benefits, indicating the likely continuation of net benefits from a development intervention beyond the phase of external funding support. It also includes an assessment of the likelihood that actual and anticipated results will be resilient to risks beyond the project's life.
 - (vi) Gender equality and women's empowerment, indicating the extent to which IFAD's interventions have contributed to better gender equality and women's empowerment, for example in terms of women's access to and ownership of assets, resources and services, their participation in decision making, their work loan balance and the impact on incomes, nutrition and livelihoods.
 - (vii) Innovation, assessing the extent to which IFAD development interventions have introduced innovative approaches to rural poverty reduction; and
 - (viii) Scaling up, assessing the extent to which IFAD development interventions have been (or are likely to be) scaled up by government authorities, donor organizations, the private sector and other agencies.
 - (ix) Environment and natural resource management, assessing the extent to which a project contributes to changes in the protection, rehabilitation or depletion of natural resource and the environment.
 - (x) Adaptation to climate change, assessing the contribution of the project to increasing climate resilience and increasing beneficiaries' capacity to manage short- and long-term climate risks.
 - (xi) Overall project achievement provides an overarching assessment of the intervention, drawing upon the analysis and ratings for all above-mentioned criteria.
 - (xii) Performance of partners, including the performance of IFAD and the Government, will be assessed on an individual basis, with a view to the partners' expected role and responsibility in the project life cycle.

⁸ The order presented below is the order in which the narrative will be presented. However, the rating on project performance will be calculated as the average of the ratings for relevance, effectiveness, efficiency and sustainability of benefits.

15. Rating system. In line with the practice adopted in many other international financial institutions and UN organizations, IOE uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 the lowest score (highly unsatisfactory).
16. Learning note. This PPE will also be piloting the preparation of a learning note on the topic of agricultural extension systems, which will be a part of the PPE report. The learning note will cover the lessons learnt in the course of implementation of ASSP, as pertains to extension systems. More specifically, the PPE will try to analyse the critical success factors in capacity building of extensions services, good practices (if any), ASCs, etc. In addition, as applicable, the note will try to bring in lessons from extension systems elsewhere in the region.
17. Data collection. The PPE will be built on the initial findings from a review of the PCR and other documents. In terms of M&E data, there are no baseline data and neither is there an end-of-project survey for assessing impact. Thus, in order to obtain further information, interviews will be conducted both at IFAD headquarters and in the country. Given that most of the project outputs pertain to training and capacity building of extension services and farmers, the PPE will depend extensively on interviews with farmers and extension workers. The findings from interviews will then be triangulated with the information in the project documents. It will also use the ToC, as elaborated later below.
18. Data collection methods will mostly include qualitative participatory techniques. The methods deployed will consist of individual and group interviews with project stakeholders, beneficiaries and other key informants and resource persons, along with direct observations. Triangulation will be applied to verify findings emerging from different information sources.
19. Stakeholder participation. In compliance with the IOE Evaluation Policy, the main project stakeholders will be involved throughout the PPE. This will ensure that the key concerns of stakeholders are taken into account, that the evaluators fully understand the context in which the programme was implemented, and that opportunities and constraints faced by the implementing institutions are identified. Regular interaction and communication will be established with the East and Southern Africa Division of IFAD and with the Government. Formal and informal opportunities to discuss findings, lessons and recommendations will be explored during the process.
20. Theory of change. The PPE team has reconstructed ASSP's preliminary ToC based on the original design, the logframe and a review of the project documentation. The ToC of the project depicts the causal pathways from project outputs (the goods and services that it delivers), through changes resulting from the use of those outputs made by target groups and other key stakeholders, (outcomes) towards achievement of the project objective. The ToC further defines assumptions which influence change along the major impact pathways. The ToC will be revised, as necessary, based on inputs from the field visits.
21. The systemic change envisioned by the development (project) objective ("A viable and sustainable smallholder agricultural sector based on farming as a business and not reliant on subsidies or welfare measures") is at the core of the ToC of the project. The two elements that characterize the change are expressed in the objective: "based on farming as a business" and "not reliant on subsidies or welfare measures".
22. The logical pathway conducing to the achievement of the project objective is twofold. One is focused on increased productivity of the smallholders' sector (outcome 1) and the second is based on the creation and strengthening of identified support services (notably the extension service and the ASCs) creating a more favourable institutional and operational context for the development of the sector (outcome 2).

23. The PPE will test the validity of the causal pathways and the underlying assumptions that the project envisaged at the time of design. In light of lack of evidence, the PPE will place the available evidence against the relevant stages of ToC to conclude whether corresponding outcomes or the objective were achieved.

D. Evaluation process

24. Following a desk review of PCR and other key project documents, the PPE will involve the following steps:
- (i) Country work. The PPE mission is scheduled for 5 August to 16 August 2019. The evaluation team will interact with representatives from the Government and other institutions, beneficiaries and key informants, in Gaborone and in the field. The preliminary ToC of the project will be developed further and validated during the field mission, through interaction with project stakeholders. At the end of the mission, a wrap-up meeting will be held in Gaborone to summarize the preliminary findings and discuss key strategic and operational issues.
 - (ii) Analysis, report drafting and peer review. After the field visit and the analysis of collected data, a draft PPE report will be prepared and submitted to IOE internal peer reviewer for quality assurance.
 - (iii) Comments by East and Southern Africa division of IFAD and the Government. The draft PPE report will be shared simultaneously with ESA and the Government for their review and comments. IOE will finalize the report following receipt of comments by ESA and the Government and prepare the audit trail.
 - (iv) Management response by ESA. A written management response on the final PPE report will be prepared by the Programme Management Department. This will be included in the PPE report when published.
 - (v) Communication and dissemination. The final report will be disseminated among key stakeholders and the evaluation report will be published by IOE both in online and print format.
25. Tentative timetable for the PPE process is as follows:

<i>Date</i>	<i>Activities</i>
June - July 2019	Desk review
5 August - 16 August 2019	Mission to Botswana
September - October 2019	Preparation of draft report
October 2019	IOE internal peer review
November 2019	Draft PPE report sent to ESA and Government for comments
December 2019	Finalization of the report
February 2019	Publication and dissemination

E. Specific issues for this PPE

26. Key issues for PPE investigation. Key selected issues to be reviewed, closely identified based on the initial desk review, are presented below. These may be fine-tuned based on further considerations or information availability, in consultation with ESA and the Government.
- (i) Design and implementation capacity. The project design was multifaceted and contemplated working in different key aspects of the agricultural sector and a range of target groups. It envisaged working on mechanization, irrigation and market-oriented agriculture, rainfed/subsistence agriculture, CA, farmer

field school methodology, a training and extension system, women and youth, private sector, agrodealers and tractor-service providers, land tenure, and new land allocation. The country context is characterized by government programmes which deliver input subsidies to farmers (refer to point ii). The evaluation team will assess if the design took sufficient cognizance of the country context, policy environment and implementation capacities for the multifaceted design, and a realistic view of the design.

- (ii) Coordination and complementarity with ISPAAD. ISPAAD is a government programme to support an increase in production and productivity through the provision of a range of input subsidies for fencing, seeds, fertilizer, land preparation and planting, as well as the purchase of tractors and establishment of ASCs. ASSP was "directed towards helping ISPAAD become a more effective instrument of rural poverty reduction and food self-sufficiency", as the design report put it. Thus, the basic idea was to dovetail the ISPAAD's own efforts in improving agricultural productivity and production. The evaluation team will assess if the rationale for such envisaged complementarity is sound. Even more importantly, the evaluation team will attempt to assess the actual coordination to capitalize on such complementarity.
- (iii) Extension services. The project envisaged working with the extension services in Botswana, both as a means to reach end beneficiaries as well as a target for capacity building by the project. This included training and capacity building of district extension workers on CA methods, of private contractors on mechanization services, and of farmers through demonstrations of CA practices. As proposed earlier, the PPE intends to prepare a learning note on the extension systems for agricultural development. The PPE will try to analyse the critical success factors in capacity building of extensions services, good practices (if any), ASCs etc. In addition, the note will try to bring in applicable lessons from extension systems elsewhere in the region.
- (iv) Innovative interventions. ASSP undertook an innovative wastewater pilot project scheme: mahibitswane irrigation scheme located at Palapye. The scheme was envisaged as a pilot for addressing the water shortage in Botswana. However, it could not be completed and operationalized during the duration of the project. Hence, the evaluation team will look at the mahibitswane irrigation scheme to understand if it is operating sustainably and providing the results that were expected at design.

F. Evaluation team

- 27. The team will consist of Prashanth Kotturi, IOE Evaluation Analyst, and Camillo Risoli (IOE evaluation consultant). The team will be responsible for the final delivery of the report. Emanuela Bacchetta, IOE Evaluation Assistant, will provide administrative support.

G. Background documents

- 28. The key background documents for the exercise will include the following:

ASSP project-specific documents

- Design report (2011)
- Supervision report (October 2012)
- Implementation Support Mission report (May 2013)
- Midterm review (2014)
- Implementation support mission report (April 2015)
- Supervision report (March 2015)
- Supervision report (August 2015)
- Financial Management Support Mission (April 2016)
- Supervision and Implementation Support Mission (October 2016)
- Supervision report (December 2017)

- Supervision report (August 2018)
- Project completion report (November 2018)

General and others

- IFAD (2011). IFAD Evaluation Policy
- IOE (2012). Guidelines for the Project Completion Report Validation (PCR) and Project Performance Assessment
- IFAD (2015). Evaluation Manual – Second Edition
- Various IFAD Policies and Strategies

Theory of change of the Agricultural Services Support Project

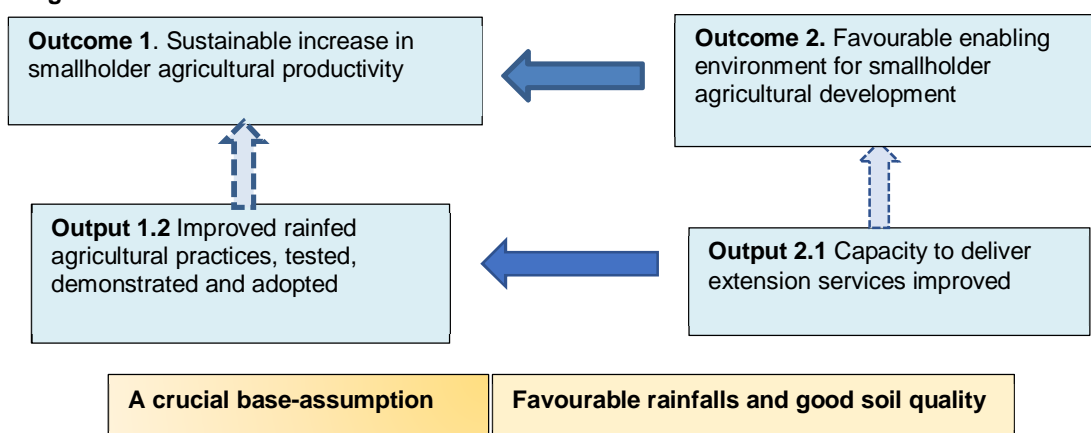
Process of reconstruction of the ToC of ASSP

1. The project design did not contemplate the ToC of the project, since it was not requested when the project was formulated. The ToC has therefore been reconstructed by the evaluation team when preparing the approach paper for the evaluation; it was designed to serve as an instrument to be used during the evaluation exercise for better understanding the logical sequence of activities and results, the reasons for achievements and failures, and the main driving forces and assumptions underpinning the logical pathway of results.
2. The preliminary ToC reconstructed in the approach paper was essentially based on the original design of the project, namely its logical framework that was found to be logically coherent, though with a number of underlying assumptions that were not made clear. The reconstructed ToC was then used during the field visits, and drivers and assumptions were made explicit and discussed with the main stakeholders at different levels. Cause-effect pathways were also discussed, leading to the progressive revision and completion of the initial ToC and eventually to the current version presented in this document.

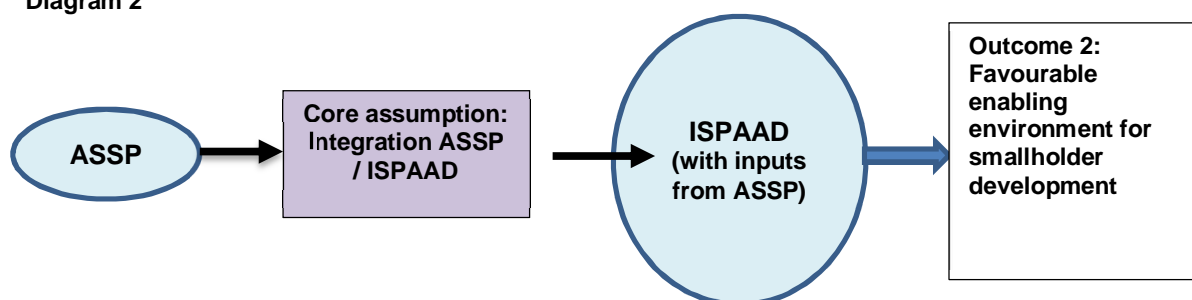
Pathways to project results: main aspects and assumptions

3. The pathway to project results is essentially twofold and reflects the two main components of ASSP: a first “field component” focusing on an increase in productivity among the smallholders sector (related to outcome 1); and a second “institutional component” laying the foundation for a favourable environment for the development of the sector (related to outcome 2). In the reconstructed ToC, the second pathway converges into the first one, leading to the project objective as visualized in the overall diagram 1 of the ToC.
4. Although the interaction between the two components/pathways is not evident from the logframe and not discussed in the project design, it has appeared evident during the evaluation that the second pathway (the “institutional”) had a strong influence on the performance of the first one (“field”). This is particularly true for the improvement of the extension services capacity (output 2.1), which appears to be a key output not only for outcome 2 (see diagram 1 below) but also for the delivery of the outputs of the “field component” (particularly key output 1.2). Outcome 2 also emerged as a key driver for the achievement of outcome 1.

Diagram 1



5. There is a crucial underlying assumption (not discussed in the project design) at the base of the project ToC: environmental conditions (favourable rainfalls and good soil quality) should allow the “sustainable increase of rainfed smallholder agriculture productivity” (outcome 1), eventually leading to “farming as a business” (Project Objective).
6. Statistical data made available to the evaluation, and open discussions with national stakeholders (MoA officers and directors, national experts and researchers), as well as meetings with groups of small farmers, strongly challenge that crucial assumption, as also discussed in the chapter on Relevance and Effectiveness (outcome 1) of the report. It is recalled here that total crop failures (zero production) happened in 45 per cent of the years between 1979 and 2017 (in other words, every two years on average), as mentioned under Relevance.
7. This wrong base-assumption undermined progress along the first pathway, particularly the delivery of its crucial output 1.2 (improved rainfed practices), the subsequent attainment of outcome 1 (sustainable increase of productivity) and of the project objective (a viable and sustainable smallholder agricultural sector based on farming as a business and not reliant on subsidies or welfare measures).
8. As a response to the unfavourable environmental conditions, the MoA has implemented several programmes over a number of years, such as ISPAAD which basically consists of a package of subsidies to smallholders for seeds, fencing (only in clusters), land preparation (ploughing and planting), mineral fertilization (with tractors) and weed control (with tractors and herbicide).
9. It can be gleaned from the project design that ASSP, particularly the second component (the second pathway “institutional”), would be fully integrated within ISPAAD “to ensure better penetration of services to targeted beneficiaries including a range of services to be provided through the agriculture service centres (ASC) and the extension system”. This is, in fact, the core assumption for the development of the second pathway and the achievement of outcome 2, as visualized below:

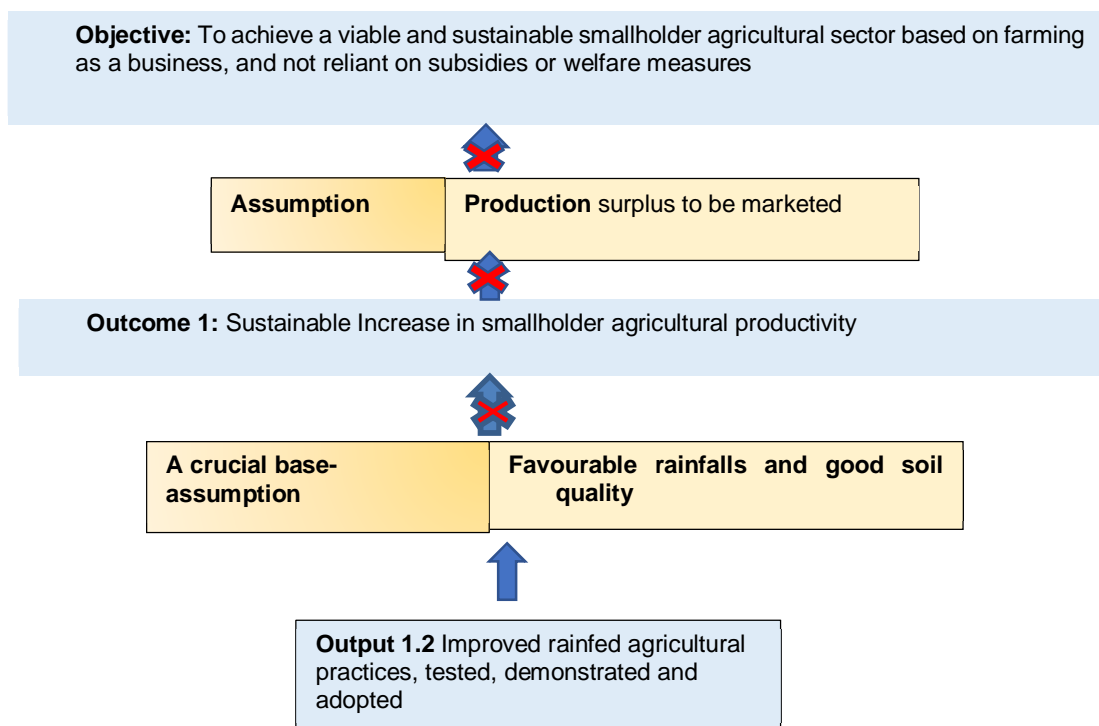
Diagram 2

10. There may be different reasons for the weak integration visualized above, and the evaluation could not objectively and thoroughly explore and triangulate them. The project ASSP failed in delivering two of the three “institutional” outputs (2.1 and 2.3), and the lack of integration has surely played a major role on that.

Pathway to outcomes and project objective

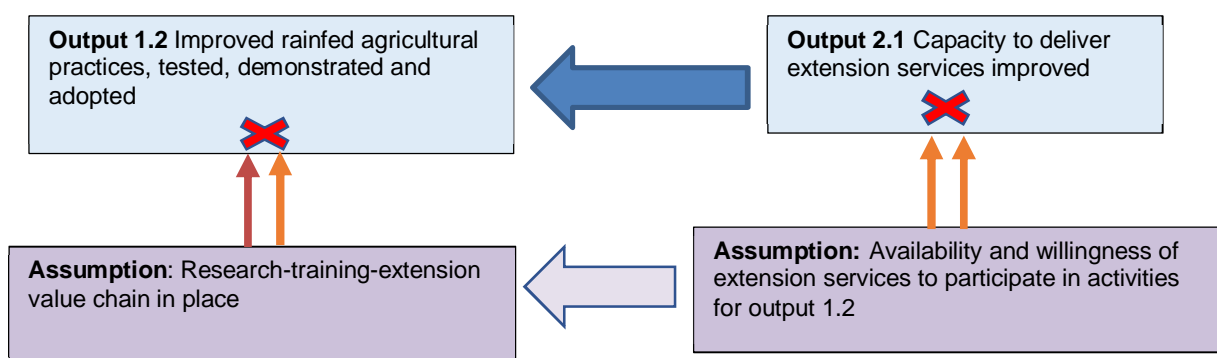
11. In our ToC analysis, output 1.2 (Improved rainfed agricultural practices, tested, demonstrated and adopted) is key for ideally progressing towards outcome 1 and to project objective, as visualized below. However, as previously discussed, a crucial base-assumption undermined the pathway to outcome 1.

Diagram 3



12. There are two main assumptions for the delivery of key output 1.2 (see diagram below). The first assumption is that an effective two-way linkage exists among “Adaptive Research > Training (of matter specialists, extension officers and ext. workers) > Extension with small farmers”. Unfortunately, this value chain was not structured at a suitable level in the case of the Project (as also discussed in the learning note).
13. The second assumption is that output 2.1 (capacity to deliver extension services improved) is in place, so as to allow the extension services to effectively participate in the value chain mentioned above as a central, key player. That did not happen in the case of the project, as discussed in the chapter on Effectiveness, because the extension workers in the field allocated 80 per cent of their time to running and managing the subsidies of the ISPAAD programme and were not available for other extension work. These two assumptions are visualized here below:

Diagram 4

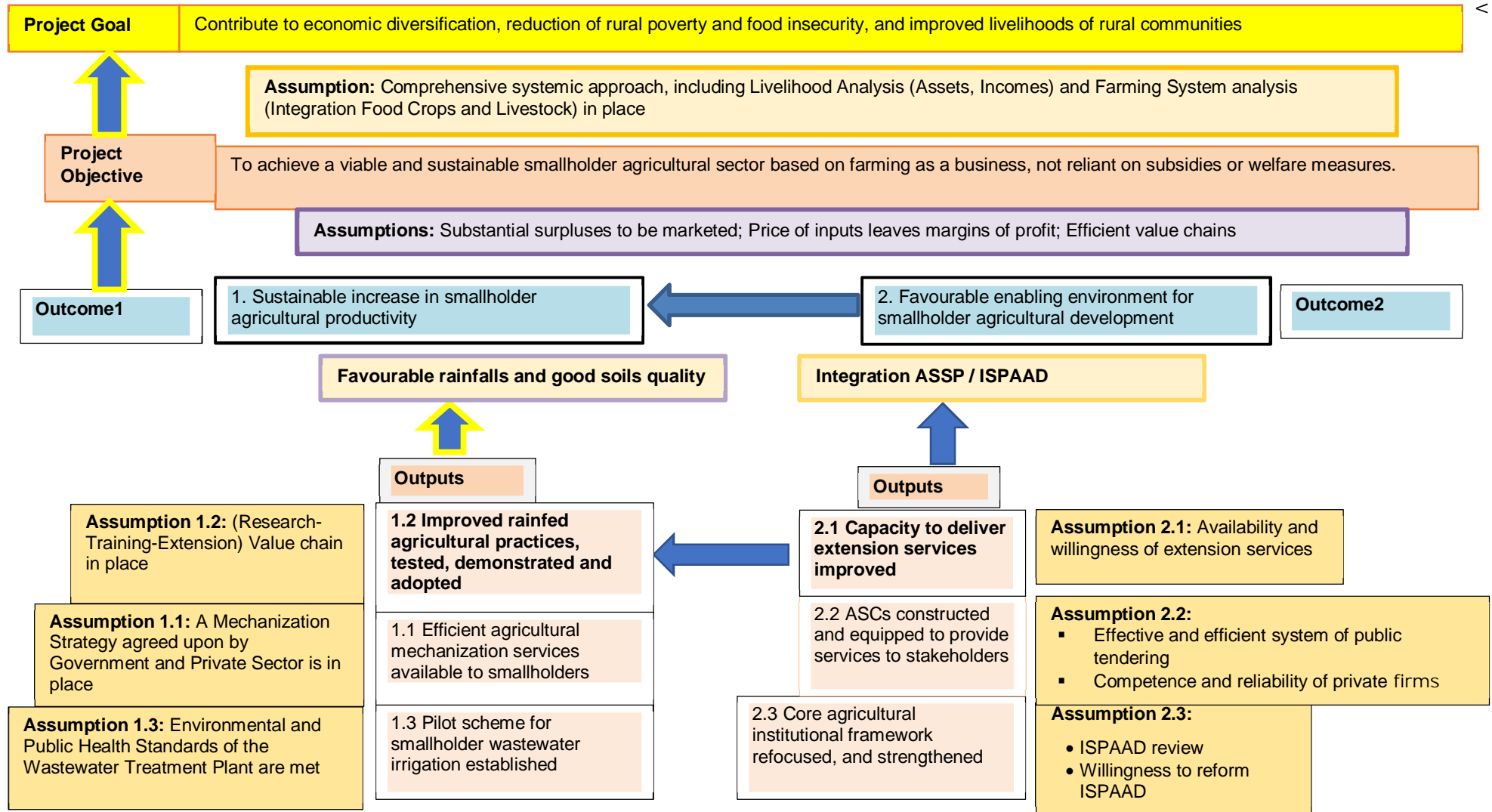


14. Besides the main assumptions discussed above, other assumptions are listed below:

Diagram 5

Outputs	Underlying assumptions not fulfilled
Output 1.1 Efficient agric. mechanization services available to smallholders	A mechanization strategy agreed upon by Government and private sector is in place
Output 1.3 Pilot scheme for smallholder wastewater irrigation established	Environmental and Public Health Standards of the Wastewater Treatment Plant are met
Output 2.1 Capacity to deliver extension services improved	Adequate means of work (transport, computers, didactic material) in place, effective M&E operational
Output 2.2 Agric. Service Centres constructed and equipped to provide services to stakeholders	Effective and efficient system of public tendering Competence and reliability of private firms
Output 2.3 Core agricultural institutional framework refocused and strengthened	ISPAAD review

Overall theory of change of ASSP



Output achievement table

<i>Indicator</i>	<i>Target</i>	<i>Final achievement</i>
Outcome 1 – Sustainable Agriculture Production		
Government-owned tractors/implements sold or leased to private machinery contractors	62	0 (0%)
Private machinery contractors trained (person)	100	129 (129%)
Farmers trained in conservation agriculture techniques	540	5017 (929%)
Demonstrations with improved mechanized agricultural equipment	100	621 (621%)
Demonstrations with improved animal-drawn agricultural implements	108	79 (73%)
Mechanization officers trained on agricultural equipment and farm operations (person)	10	15 (150%)
Smallholder farmers to whom land in the pilot scheme has been allocated	29	32 (110%)
Outcome 2 - Enabling Environment for Smallholder Agriculture		
Extension workers trained in extension methodologies	270	90 (33%)
Agriculture service centres established	15	4 (27%)
Enterprises servicing smallholder farmers operating from ASCs	15	2 (13%)
Changes made to ISPAAD operations/services as a result of the ASSP supported comprehensive review	1	0 (0%)

Source: PCR.

List of key people met

Government

John Cassius Moreki, Deputy Permanent Secretary, Technical Services, Ministry of Agricultural Development and Food Security, Botswana

Galeitsiwe Ramokapane, Director, Department of Crop Production, Ministry of Agricultural Development and Food Security, Botswana

Kelebonye Tshepong, Director, Department of Agribusiness Promotion, Ministry of Agricultural Development and Food Security, Botswana

Gaanwe Mogotsi, Ministry of Finance and Economic Development, Botswana

Boniface Mphetlhe, Deputy Secretary, Ministry of Finance and Economic Development, Botswana

Mmoloki Khukhutha, Principal Agriculture Scientific Officer, Ministry of Agricultural Development and Food Security, Botswana

Zibani Doreen Philime, Coordinator, Integrated Support Programme for Arable Agricultural Development, Ministry of Agricultural Development and Food Security, Botswana

Roy Orman, Programme Manager, Agricultural Services Support Programme, Ministry of Agricultural Development and Food Security, Botswana

Dipuo Koka, Assistant Programme Manager, Agricultural Services Support Programme, Ministry of Agricultural Development and Food Security, Botswana

Maduo Judy Kesetse, Monitoring and Evaluation Officer, Agricultural Services Support Programme, Ministry of Agricultural Development and Food Security, Botswana

Tebogo Modisenyane, Procurement Officer, Agricultural Services Support Programme, Ministry of Agricultural Development and Food Security, Botswana

International and donor institutions

Rene Czudek, Resident Representative, Botswana, Food and Agriculture Organization of the United Nations

Innocent Lefatshe Magole, Programme Analyst, Environment and Climate Change, United Nations Development Programme

Research and training institutions

Tebogo Seleka, Executive Director, Botswana Institute of Development Policy Analysis

Patrick Malope, Senior Research Fellow, Environment, Agriculture and Natural Resources

Nnyaladzi Batisani, Lead Researcher, Climate Change and Earth Systems, Botswana Institute for Technology Research and Innovation.

Bibliography

Strategic / background documents

Evaluation

International Fund for Agricultural Development (IFAD). 2011. Evaluation Policy.

_____. 2015. Evaluation Manual – Second Edition.

_____. 2012. IOE Guidelines for the Project Completion Report Validation (PCRVR) and Project Performance Assessment.

Policies and strategies

_____. 2002. Strategic Framework 2002-2006.

_____. 2009. Rural Finance Policy.

_____. 2004 Rural Enterprise Policy.

_____. 2008 Targeting Policy.

_____. 2012. IFAD Gender Equality and Women's Empowerment Policy.

_____. 2016. Gender mainstreaming in IFAD10.

Project documentation

_____. 2011. Republic of Botswana: Agricultural Services Support Project. Project Design Report.

_____. 2012. Republic of Botswana: Agricultural Services Support Project. Supervision Report. October 2012.

_____. 2013. Republic of Botswana: Agricultural Services Support Project. Implementation Support Mission Report. May 2013.

_____. 2014. Republic of Botswana: Agricultural Services Support Project. Mid-term Review.

_____. 2015. Republic of Botswana: Agricultural Services Support Project. Implementation Support Mission Report. April 2015.

_____. 2015. Republic of Botswana: Agricultural Services Support Project. Supervision Report. March 2015.

_____. 2015. Republic of Botswana: Agricultural Services Support Project. Supervision Report. August 2015.

_____. 2016. Republic of Botswana: Agricultural Services Support Project. Financial Management Support Mission Report. April 2016.

_____. 2016. Republic of Botswana: Agricultural Services Support Project. Supervision and Implementation Support Mission Report. October 2016.

_____. 2017. Republic of Botswana: Agricultural Services Support Project. Supervision Report. December 2017.

_____. 2018. Republic of Botswana: Agricultural Services Support Project. Supervision Report. August 2018.

_____. Republic of Botswana: Agricultural Services Support Project. Project Completion Report. November 2018.

Background documentation on the country

General

- Statistics Botswana. 2018. Botswana Demographic Survey Report, 2017.
- _____. 2018. Formal Sector Employment Stats Brief, 2018.
- _____. 2015. Botswana Agriculture Census Report, Final, 2015.
- _____. 2015. Botswana Agricultural Census, Analytical Papers, 2015.
- _____. 2017. Botswana Environment Statistics, 2017.
- _____. 2018. Multi-topic household survey 2015-16 – Poverty Stats Brief, Statistics of Botswana, 2018.
- Food and Agriculture Organization of the United Nations. 2018. FAOSTAT Botswana, 2018.
- World Bank Group. 2015. Botswana Poverty Assessment 2015.
- Government of Botswana. Tenth National Development Plan (2009-2016).
- _____. Eleventh National Development Plan (2017-2023).

Specific

- African Development Bank. 2016. Review of land tenure policy, institutional and administrative systems of Botswana -Case Study, African Natural Resources Center.
- UNDP-UNEP Poverty-Environment Initiative (PEI). 2014. "Poverty and Social Impact Analysis of the Integrated Support Programme for Arable Agriculture Development in Botswana".
- Africa Social Safety Net and Social Protection Assessment Series. 2013. Botswana Social Protection – discussion paper.
- FAO Gender and Land Rights Database. [http://www.fao.org/gender-landrights-database/en/Country Profiles, Botswana](http://www.fao.org/gender-landrights-database/en/Country%20Profiles/Botswana) <http://www.fao.org/gender-landrights-database/country->
- Flora Modiane Tladi-Sekgwama, University of Botswana. 2019. An overview of agricultural extension in Botswana and needed reforms: <http://www.academicjournals.org/JAERD>
- Journal of Agriculture and Environment for International Development. 2009. SWOT Analysis of Extension Systems in Southern African Countries. O.I. Oladele, J. Lepetu, S.K. Subair, J.Obuh, <https://www.researchgate.net/publication/268409105>
- Botswana Country-page in "Global Forum for Rural Advisory Services/GFRAS", 2013. <https://www.g-fras.org/en/world-wide-extension-study/africa/southern-africa/botswana.html>
- K. Nthomang, University of Botswana. 2018. Botswana's Ipelegeng Programme Design and Implementation: Reduction or Perpetuation / Entrenchment of Poverty?
- ISPAAD Final guidelines: <http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>
- Government of Botswana. Climate Smart Agriculture Program 2015 – 2025.
- Botswana Institute for Technology Research and Innovation. 2019. Climate Smart Agriculture Insights from Practice.

Other references

Zimbabwe Conservation Agriculture Task Force. 2009. Farming for the Future - A Guide to Conservation Agriculture in Zimbabwe.

Corbeels M, Sakyi RK, Kühne RF and Whitbread A. 2014. Meta-analysis of crop responses to conservation agriculture in sub-Saharan Africa. CCAFS Report No. 12. Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CAAFS). Available online at: www.ccafs.cgiar.org

Stevenson J.R et al. "Evaluating conservation agriculture for small-scale farmers in Sub-Saharan Africa and South Asia". 2014. In Agriculture, Ecosystems and Environment (2014), <http://dx.doi.org/10.1016/j.agee.2014.01.018>

Food and Agriculture Organization of the United Nations. 1973. A.H. Maunder. Agricultural Extension: a Reference Manual, FAO, Rome, 1973.

_____. B. Swanson. 1984. "Agricultural Extension – a reference manual", FAO, 1984.

_____. B. Swanson. 2008. "Global Review of Good Agricultural Extension and Advisory Services Practices", FAO, 2008.



Independent Office
of Evaluation



Investing in rural people

Independent Office of Evaluation
International Fund for Agricultural Development
Via Paolo di Dono, 44 - 00142 Rome, Italy
Tel: +39 06 54591 - Fax: +39 06 5043463
E-mail: evaluation@ifad.org
www.ifad.org/evaluation
 www.twitter.com/IFADeVal
 www.youtube.com/IFADevaluation



IFAD internal printing services