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BOTSWANA

PREPARATION OF IMPROVED WATER CONTROL AND MANAGEMENT SYSTEM FOR PANDAMATENGA AREA

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AFRICAN WATER FACILITY (AWF) MAY 2007

BOTSWANA
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ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
AWF	African Water Facility
CAADP	Comprehensive African Agricultural Development Program
DEA	Department of Environmental Affairs
EIA	Environmental Impact Assessment
ESMP	Environmental and Social Management Plans
EU	European Union
FAO	Food and Agriculture Organisation
GOB	Government of Botswana
ha	Hectare
MFDP	Ministry of Finance and Development Planning
MOA	Ministry of Agriculture
mt	Metric Tonne
MTR	Mid Term Review
MWT	Ministry of Works and Transport
NAMPAADD	National Master Plan for Agricultural and Dairy Development
NEPAD	New Partnership for African Development
PAIDP	Pandamatenga Agricultural Infrastructure Development Project
PPADB	Public Procurement and Asset Disposal Board
PY	Project Year
UA	Unit of Account
UNDP	United Nations Development Program
USAID	United States Agency for International Development

BOTSWANA
PREPARATION OF IMPROVED WATER CONTROL AND MANAGEMENT SYSTEM FOR PANDAMATENGA AREA
RESULTS BASED LOGICAL FRAMEWORK

HIERARCHY OF OBJECTIVES	EXPECTED RESULTS BY SECTOR AND THEME	REACH (TARGET POPULATION)	PERFORMANCE INDICATORS SOURCE AND METHODS	INDICATIVE TARGETS /TIMEFRAME	MAIN ASSUMPTIONS AND RISKS TO BE MONITORED
Sector Goal To contribute to the implementation of the water management component of the National Master Plan for Arable Agriculture and Dairy Development (NAMPAADD) Plan	Increased efficiency in use of natural resources for food security	Up to 150,000 households country wide	**Long-Term Indicators** Household income growth rate per annum reaches 5% by 2016	NAMPAADD Plan documents Central Statistics Office data	GOB maintains adherence to NAMPAADD Plan
Objectives Preparation of technical reports for an investment proposal	Water control and management system successfully carried out	266 farmer households (1,330 persons) in Pandamatenga	Investment in the Pandamatenga Agricultural Production project successfully determined by PY1	Project Progress Report and Surveys	GOB maintains adherence to NAMPAADD Plan
Outputs 1. Technical designs prepared 2. EIAs prepared 3. ESMPs prepared 4. ESMPs implemented 5. Soil Use mapping produced 6. Capacity built for farming community 7. Capacity built for MOA	1. Better water control and drainage of surface run-off 2. Maximization of ecosystem protection 3. Better flow of extension information to farmers 4. Increased agricultural production and better farm gate prices for produce in markets	266 farmer households (1,330 persons) in project area 20 staff of the Ministry of Agriculture	**Medium-Term Indicators** Pandamatenga Agricultural Production project operational by PY1 Capacity built for at least 90% of participants in project by PY2 All project staff trained by PY2	Project Progress Report and Surveys Periodic, Bi-annual, Annual and other M&E reports	

HIERARCHY OF OBJECTIVES	EXPECTED RESULTS BY SECTOR AND THEME	REACH (TARGET POPULATION)	PERFORMANCE INDICATORS SOURCE AND METHODS	INDICATIVE TARGETS /TIMEFRAME	MAIN ASSUMPTIONS AND RISKS TO BE MONITORED
Activities 1. Water Drainage System 2. Water Control & Mgt Initiatives 2. Ecosystem Conservation	1.1 Detailed design carried out 2.1 Training programme conducted for staff and farmers 2.2 Scientific equipment procured 3.1 EIAs and ESMPs produced 3.2 ESMPs implemented	266 farmer households (1,330 persons) in project area 20 MOA staff and 266 farmer households (1,330 persons) in project area MOA's Departments of Research and Extension		Project Progress Report and Surveys Periodic, Annual and other M&E reports	Support for agricultural production is sustained through proposed government development plan for project area Staff are motivated
PROJECT ACTIVITIES **1. Water Drainage System** **2. Water Control & Management Initiatives** **3. Ecosystem Conservation**	Inputs (Euros '000): 208.0 687.0 274.0 Total 1,169.0		1. Audit Reports 2. Disbursement Records 3. Progress reports 4. Supervision reports		

EXECUTIVE SUMMARY

In 1984, the Government of Botswana (GOB) allocated an area of 25,074 ha in Pandamatenga area (northeast of the country) to farmers, with the intention of boosting cereal production in a rain fed system. Soon thereafter, frequent flooding of the fields as a result of increased rain fall intensity and lack of water control systems became constraints to production and productivity.

Subsequently, the GOB commissioned a technical study to determine the most cost-effective and environmentally sound methods of resolving the flood water problems in the Pandamatenga area. The technical report highlighted water control and drainage works as long-term remedies that will enhance sustainability. Preliminary topographic surveys, geometric designs of both on-farm and main water control and drainage systems, as well as environmental impact assessments were conducted and various technical reports were produced.

In February 2007, the GOB submitted a request to the African Water Facility (AWF) to consider providing financial support to enable it update the geometric design and environmental impact assessment (EIA) for water control and management system. The general objective of the project is to improve water control systems on an area of 27,574 ha to ameliorate water logged conditions arising from the characteristics of the predominant black cotton soil of the area. This will lead to increased cereal production as a result of improved water control infrastructure and agricultural water management. It is envisaged that implementation of the activities will result in triggering investment in agricultural production infrastructure development from the Government through access to a lending of UA 37.20 million from the African Development Bank Group and other potential sources, thus fulfilling the core objective of the AWF support.

The project cost over the two-year period is estimated at Euros 1,169,000. AWF funds will be used to finance specific project preparatory and water management activities in Water Drainage Systems, Water Control and Management Initiatives and Ecosystem Conservation. The ultimate recipient of the AWF grant will be the MOA. The MOA will be responsible for the planning and programming and for mobilizing and soliciting the support and participation of all the stakeholders of the project.

Water resource management matters have been included in Botswana's National Master Plan for Agricultural and Dairy Development (NAMPAADD) that proposes to reduce uncertainties associated with natural conditions in Botswana through the adoption of water management techniques that can ensure higher productivity even under unfavourable conditions. The project fits well into the focal areas of the AWF as they relate to Integrated Water Resources Management; capacity building; knowledge, information building and dissemination; social analysis and environmental management; and investment attraction.

It is hereby recommended that the AWF approves the amount of Euros 1,169,000 to finance the project preparatory and capacity building activities as detailed in this document.

1. BACKGROUND

1.1 Origin of the Project

1.1.1 Botswana is a landlocked country and shares borders with Zimbabwe, South Africa, Namibia and Zambia (see map in Annex 1) and a total land area of 582,000 km^2 is covered by the Kalahari Desert sand. The country has a population of about 1.5 million, about half of whom live in rural areas and derive their subsistence from agriculture and other rural subsistence activities. Botswana is not well endowed with agricultural land as only 6% of its land area is suitable for arable agriculture.

1.1.2 In 1984, the Government of Botswana (GOB) allocated an area of 25,074 ha in Pandamatenga area (northeast of the country) to farmers, with the intention of boosting cereal production. The Pandamatenga plains have a relatively higher average rainfall of 600 mm per annum and considered to have the potential to significantly increase the production of cereals and crops with short maturity cycles. Soon thereafter, frequent flooding of the farms as a result of increased rain fall intensity and lack of water control system started affected productivity.

1.1.3 Subsequently, the GOB commissioned a technical study to determine the most cost-effective and environmentally sound methods of resolving the flood water problems in Pandamatenga area. A technical report was produced in 2003 and highlighted water control and drainage works as long-term remedies. Preliminary topographic surveys, geometric designs, water investigations and environmental impact assessments were elaborated. However, in order for an investment to be determined in the Pandamatenga Agricultural Infrastructure Development Project (PAIDP), currently estimated to cost UA 42.46 million, the geometric design and environmental impact assessment (EIA) report produced in 2003 for water control and management systems need to be updated and to include an additional 2,500 ha.

1.1.4 The GOB submitted a request in February 2007 to the AWF to consider funding the above mentioned activities in order to facilitate investment in the PAIDP. AWF funds would be used to update or prepare detailed geometric designs for water control and management systems; conduct environmental assessments; implement associated environmental and social management plans (ESMPs); and build capacity for Integrated Water Resources Management for staff of relevant institutions and beneficiary farmers in line with the focal objectives of the AWF.

1.2 Sectoral Priorities

1.2.1 The agriculture sector in Botswana is an important source of food and provides income and investment opportunities for the majority of people in the rural areas. The many challenges that face the Land and Water Management pillar within the Comprehensive African Agricultural Development Program (CAADP) framework of the agriculture sector in Botswana include low and erratic rainfall and endemic drought. Strategies to improve water management and utilisation in agriculture must therefore be undertaken to ensure coherence of water utilisation policies and approaches. This implies a range of activities, which will build on, and support investments in water management.

1.2.2 Botswana has an irrigable area of about 13,000 ha in the Limpopo, Okavango and Chobe river basins, of which 1,400 ha are under partial irrigation. Water withdrawals from these basins were 194 million m^3 in 2000 including 80 million m^3 for irrigation, forestry,

livestock and wildlife. An increase in water utilisation for agriculture will inevitably reduce water resource availability to other users within the country and beyond national borders.

1.2.3 The Government of Botswana has responded to the challenge posed by freshwater resources by formulating the National Water Master Plan (NWMP), the first phase of which was completed in 1992. The main objective of the NWMP is to assess water requirements for all users, based on projected water demands for a period of 30 years between 1990 and 2020. The provision of water for agricultural purposes is carried out under the framework of the National Policy on Agriculture, which lays emphasis on providing adequate and secure livelihoods for those involved in agriculture and increasing food self-sufficiency. Water resource management matters have been included as part of the irrigation component in the National Master Plan for Agricultural and Dairy Development (NAMPAADD).

1.2.4 The NAMPAADD proposes to reduce uncertainty associated with natural conditions in Botswana through the adoption of water management techniques that can ensure higher productivity even under unfavourable conditions. In implementing the NAMPAADD irrigation component, the MOA is committed to establishing pilot and demonstration farms to demonstrate advanced water management technologies to farmers; improving infrastructure that will facilitate an increase in production including post harvesting and handling facilities; and improving extension services by placing extension officers close to production clusters. This impetus will benefit up to 150,000 households by 2016.

1.2.5 This project fits well into the focal areas of the AWF as they relate to Integrated Water Resources Management; capacity building; knowledge, information building and dissemination; social analysis and environmental management; and investment attraction.

1.3 Problem Definition

The update and consolidation of the EIAs for 27,574 ha, as well as the preparation of detailed geometric designs for water control and management in a supplementary area of 2,500 ha are activities that will trigger the investment proposal in the PAIDP. Furthermore, building the capacity of the MOA and training beneficiary farmers in water control and ecosystem management would enhance the sustainability of the investment.

1.4 Beneficiaries and Stakeholders

1.4.1 The direct beneficiaries of the project are farmers and Government institutions involved in the implementation and exploitation of the PAIDP. These include 266 farming households (including 33 female-headed households) in Pandamatenga, made up of 245 farming households classified as traditional; and 21 farming households classified as large scale that would all benefit from improved water control systems and better production management. The MOA will benefit from human resource development.

1.4.2 The partners consist of officials of the MOA; resident donors such as the European Union (EU), Food and Agriculture Organisation (FAO), United States Agency for International Aid (USAID) and United Nations Development Programme (UNDP); and beneficiary farmer associations. Resident development partners have not intervened in such activities before, but Bank Group’s experience from other Regional Member Countries show that investment delays were often associated with inadequate project preparation. The report

was discussed with all stakeholders and further reviewed at the AWF by peer, Internal and Interdepartmental Working Groups.

2. THE PROJECT

2.1 Impacts

The conclusion of the water control and management activities related to EIAs and detailed geometric designs will build on the prior feasibility and technical investigations carried out and enhance the finalisation of the investment in the PAIDP. Training of staff of the MOA and beneficiary farmers in water control initiatives and ecosystem conservation methods would ensure sustainable crop production. Furthermore, the provision of testing kits for soil properties and extensions fliers on water control measures to the Research and Extension departments of the MOA, respectively, will enable the MOA meet its mandate in providing appropriate advisory information to farmers.

2.2 Outcomes

The project will lead to the preparation of water control and management systems, as well as ecosystem conservation in Pandamatenga area. It would minimise the off take time of the PAIDP and enhance efficiency of project implementation and sustainability of production.

2.3 Outputs

The geometric designs will lead to the development of better control and drainage of surface runoff that may otherwise flood the fields. The project will also produce EIAs and implement associated ESMPs to mitigate possible negative impacts. The farming community will be mobilized and their capacity built through the various training initiatives in the project. The capacity of the Departments of Research and Extension will be upgraded to enable them meet their mandates.

2.4 Activities

The project consists of three main activity components:

(i) Water Drainage Systems: Geometric design of water control and drainage system for an area of 2,500 ha. Detailed TOR for this activity is provided as Annex 3.

(ii) Water Control and Management Initiatives: This includes training of 20 Government staff and 266 farmers in water control techniques and water management; provision of scientific equipment related to soil testing and cartographical survey and enhancing capacities of the Research and Extension departments of the MOA to enable them characterize soils and produce cartographical maps for use by farmers in their business planning process

(iii) Ecosystem Conservation: Activities here include preparation of EIA for the supplementary 2,500 ha; updating the EIA for the 25,074 ha; as well as implementing associated ESMPs for the full development area of 27,574 ha. Detailed TOR for the EIA is provided as Annex 4.

2.5 Risks

The major risk that the project faces is related to Government policies and programs that may not elicit the desired results in terms of water control and management. This risk could be mitigated by increased engagement with Government to carry through its development strategies.

2.6 Costs and Financing Plan

The project cost over the two-year period is estimated at Euros 1,169,000. AWF funds will be used to finance specific project preparatory and water management activities in Water Drainage Systems, Water Control and Management Initiatives and Ecosystem Conservation. Details of project costs are presented in Tables 2.1 and 2.2, as well as Annex 2.

Table 2.1: Activity Component and Cost Estimates

	Activity Component	Euros ('000)
I	**Water Drainage Systems**	
	Detailed design of 2,500 ha	208.0
II	**Water Control and Management Initiatives**	
	Demonstration of water control techniques	146.0
	Training of staff in water management	126.0
	Training of farmers in water management	125.0
	Characterisation of soil properties	74.0
	Soil testing kits for water utilisation	105.0
	Survey/cartographical planning	74.0
	Production of extension brochures	37.0
III	**Ecosystem Conservation**	
	EIA for 2,500 ha	70.0
	Update of EIA for 25,074 ha	60.0
	Implementation of ESMP	144.0
	TOTAL	**1,169.0**

Table 2.2: Types of Costs

Source of Finance	Pula (000)			Euros ('000)			%
	Foreign Costs	Local Cost	Total Cost	Foreign Cost	Local Cost	Total Cost	Foreign Cost
AWF Grant	4,886.5	4,853.2	9,739.7	587.0	582.0	1,169.0	50.2
Total	**4,886.5**	**4,853.2**	**9,739.7**	**587.0**	**582.0**	**1,169.0**	

2.7 Justification for AWF Support

2.7.1 The general objective of the project is to improve water control systems on an area of 27,574 ha to ameliorate water logged conditions arising from the characteristics of the predominant black cotton soil of the area. This will lead to increased cereal production as a result of improved water control infrastructure and agricultural water management. It is envisaged that implementation of the activities will result in triggering investment in agricultural production infrastructure development from the government through access to a lending of UA 37.20 million for the PAIDP from the African Development Bank and other potential sources, thus fulfilling the core objective of the AWF support.

2.7.2 The key issues that need to be verified and mitigated prior to full investment consideration are related to geometric designs, assessment and updating of the EIA mainly in relation to the proposed excess water control measures and capacity building in agricultural water management to increase and sustain production. These activities fall within the operational focus and intervention areas of the Facility. The immediate impact of the AWF support is to enable full appraisal process and investment from the Bank Group and other donors for the implementation of the PAIDP.

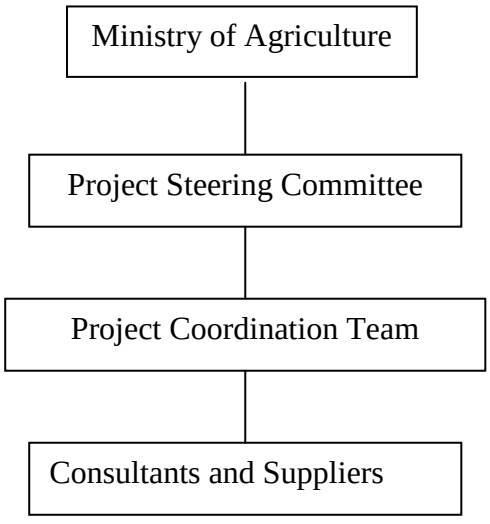
3. IMPLEMENTATION

3.1 Recipient

The ultimate recipient of the AWF grant will be the MOA. The finance section of the MOA has been evaluated as having the capacity to keep financial information records for the project. It has previous experience in keeping financial records for similar projects implemented by the MOA.

3.2 Implementation Arrangement and Capacity

3.2.1 A Project Steering Committee (PSC) will be established to provide policy guidance to the project. The PSC will be chaired by the Permanent Secretary of MOA and will comprise a representative each from the Ministry of Finance and Development Planning; Ministry of Works and Transport (MWT); Ministry of Labor and Home Affairs, Ministry of Energy and Water Resources; Ministry of Environment, Wildlife and Tourism; and Department of Environmental Affairs (DEA) (see details of the Implementation Structure below). A Project Coordination Team (PCT) will be established comprising appropriate specialists such as Water Engineer, Agronomist and Accountant from the MOA; Civil Engineer from the Roads Department; Natural Resource Specialist from the DEA; and District Agricultural Officer, Research Officer and Extension Specialist at the Pandamatenga District Office. The Principal Land Resource Specialist of the MOA, presently in charge of Pandamatenga will be the Project Coordinator. These specialists are all serving Government officers and will continue to draw their emoluments from the Government of Botswana.



3.2.2 The MOA will be responsible for the planning and programming and for mobilizing and soliciting the support and participation of all the stakeholders of the project. The MWT

will be responsible for the civil aspects of the project and lead in the selection of contractors and consultants and supervision of the execution of technical work. The DEA will take the lead in supervising the implementation of the ESMPs.

3.3 Performance Plan

A set of critical and measurable indicators are summarized below for activities of the project.

Result	Critical Measurable Indicators	Targets	Time Frame
Outcomes			
1. Environmental Impact Assessments reports produced	No. of EIA reports produced	1. An update of EIA for 25,074 ha completed in a timely manner in PY 1 2. New EIA for 2,500 ha completed in a timely manner in PY1	Every 3 months after start of work
2. Detailed design produced	No. of detailed design produced	Detailed design for 2,500 ha completed in a timely manner by PY1	Every 3 months after start of work
3. ESMPs produced and implemented	Adequacy of ESMP to meet environmental impact assessment regulations	1. ESMP produced in PY1 2. ESMP fully implemented by PY2	Every 3 months after start of work
4. Farming community mobilized and capacity built	No. of households trained in water control and ecosystem protection	At least 90% of 263 farmer households adopt improved water control and ecosystem management practices by PY2 as a result of new knowledge	Every 6 months after commencement of project
5. Capacity of Depts of Research, and Extension built	No of staff Preparedness to meet the requirements of training and information generation and dissemination	Acceptable level of preparedness in Govt staff observed by certification from training institutions as from PY1	Every 6 months from reports
Immediate Outputs			
1. Detailed design produced	Technical data input for investment ready	Technical design for 2,500 ha produced within 2 months of start of works	Monthly from reports
2. EIAs and ESMPs produced	Processing of larger investment commenced	EIAs for 27,574 ha produced within 2 months of start of assignment ESMPs implemented as from PY1	Monthly from reports
3. Improved management of water and ecosystems	High understanding of water control, management and conservation	At least 20 Govt staff trained by PY2. At least 90% of farmer households apply appropriate water control methods	Bi-annually from reports

3.4 Implementation Schedule

The implementation of activities is shown in Table 3.1.

Table 3.1: Implementation Schedule

	Activity Component	Project Year 1 Quarters				Project Year 2 Quarters			
		1	2	3	4	1	2	3	4
I	**Water Drainage Systems**								
	Detailed design of 2,500 ha		■	■	■				
II	**Water Control and Mgt Initiatives**								
	Demonstration of water control techniques			■		■		■	
	Training of staff in water management	■	■	■	■				
	Provision of soil testing kits for water utilisation		■						
	Survey/cartographical planning		■	■		■	■		
	Production of extension brochures		■				■		
	Training of farmers in water management		■		■		■		■
	Characterisation of soil properties			■	■	■	■		
III	**Ecosystem Conservation**								
	EIA for 2,500 ha	■							
	Update of EIA for 25,074 ha	■							
	Implementation of ESMPs		■	■	■	■	■	■	■

3.5 Procurement and Execution

3.5.1 Procurement arrangements for goods and services are summarized in Table 3.2.

Table 3.2: Procurement Arrangements

Category	Euros ('000)			
	International Shopping	Force Account	Direct Contracting	Total
1. Goods				
- Soil testing kits	0.105			0.105
2. Services				
- Detailed design of 2,500 ha			0.208	0.208
- EIA for 2,500 ha			0.070	0.070
- Update of EIA for 25,074 ha			0.060	0.060
- Implementation of ESMP			0.144	0.144
- Demo of water control techniques			0.146	0.146
- Training of staff in water management			0.126	0.126
- Training of farmers in water mgt			0.125	0.125
- Characterisation of soil properties		0.074		0.074
- Survey/cartographical planning		0.074		0.074
- Production of extension brochures		0.037		0.037
Total	**0.105**	**0.185**	**0.879**	**1,169**

Amounts shown represent net AWF's financing. The GOB will finance the taxes and duties associated with the activities or provide a waiver as tenable by the laws of Botswana.

3.5.2 Procurement will be in accordance with Government procedures. The MOA has a tender committee, which handles tenders for individual contracts of up to Euros 125,000,

while the Public Procurement and Asset Disposal Board (PPADB) takes care of any tenders above that amount. The PPADB functions as a full time regulator and auditor of government procurement. The PPADB has 58 inter-disciplinary staff, with overall functions of adjudication and awarding of tenders by line ministries. The functioning of strict accounting, auditing and control systems, accompanied by the public procurement and asset disposal system mean that in practice, there is quite effective, accountable and proper utilization of public resources.

3.5.3 Goods: Procurement of scientific equipment valued at Euros 105,000 will be procured through International Shopping (IS) using Government procedures.

3.5.4 Services: The procurement of consulting services for detailed geometric design for 2,500 ha amounting to Euros 208,000 as well as updating and performing a new EIA for 2,500 ha amounting to Euros 70,000 will be undertaken in two separate consultancy contracts. The update of the EIA for 25,074 ha amounting to Euros 60,000 as well as implementation of the associated ESMP amounting to Euros 144,000 for 27,574 ha will be undertaken in two separate consultancy contracts. Procurement of these services will be undertaken in accordance with Government guidelines on the basis of direct contracting without using limited competition bearing in mind the considerations of timeliness and efficiency. It has been found desirable to use the previous competitively selected consultants who carried out the detailed design for the 25,074 ha and the previous competitively selected consultants that undertook the current EIA to continue with the relevant activities. A new consultant would have to start from scratch, particularly with regard to the dynamics of the area and current information contained in the EIA report, ESMP as well as the geometric design drawings. This would save time, human and financial resources as a new consultant would have to spend more time gathering data and consulting previous reports.

3.5.5 The procurement of consulting services for staff and farmer training, totalling Euros 397,000 will also be undertaken in accordance with Government guidelines on the basis of a direct negotiation with the Botswana College of Agriculture (BCA). It has become necessary to directly contract the BCA to provide part of the training services without using limited competition because of considerations of economy and efficiency. The assignment is in small modules over two years and might not attract interest from outside especially as a source of expertise has been identified in Botswana. The BCA was established in 1991 as an associate institution of the University of Botswana to produce high quality graduates, generate suitable technologies and provide advisory services to improve agricultural productivity. The Center for In-service and Continuing Education (CICE) is the outreach department responsible for promoting, coordinating and delivering short-term courses in agriculture, rural development and related fields. The CICE has carried out similar training programs in the past and is presently assessed as competent to provide the relevant training services as identified in the support from the AWF.

3.5.6 Finally, the characterisation of soil properties, carrying out of survey/cartographical planning and production of extension brochures amounting to Euros 185,000 will be carried out by MOA itself in accordance with Government procedures. The Research and Extension departments of the MOA have technical personnel that are experienced in delivering on activities of this nature. Apart from its headquarters in Gaborone, the MOA has regional agricultural officers and relevant support staff in Pandamatenga. The MOA is better placed to adapt the fallouts from the activities for the benefit of the project.

3.6 Disbursement Arrangements and Expenditure Schedule

The Special Account method of disbursement will be utilised in the project. The initial disbursement into the Special Account will be guided by estimates for activities approved for each biannual (six months' period). Replenishments of the Special Account will be made for subsequent work programs for each six months and upon utilisation of at least 50% of the previous replenishment. A disbursement schedule based on the activity implementation schedule is presented in Table 3.3.

Table 3.3: Disbursement Schedule

Cash Flow	1st Biannual	2nd Biannual	3rd Biannual	4th Biannual	Total
Euros ('000)	473.0	397.0	164.0	135.0	1,169.0

3.7 Accounting and Audit Arrangements

The Accounts office of the MOA will handle all the accounts for the project. The MOA has 18 trained Accountants, three Economists and a Principal Finance Officer in charge of monitoring their activities. The MOA has managed five national projects in the last 10 years. The financial statements will be prepared under the supervision of the Principal Finance Officer of the MOA. The AWF will conduct a quarterly monitoring of the use of project funds and perform an annual audit of the financial statements of the project at the end of each financial year. The audit report will include the opinion of the auditors on the project financial statements.

3.8 Monitoring, Evaluation and Reporting Arrangements

3.8.1 The foundation for the overall project monitoring (and evaluation) systems will be the logical framework and a series of key performance indicators. The monitoring indicators will compare performance each year with the targets set for that year. The MOA will monitor overall operations for planning and facilitation purposes for the activities of the project.

3.8.2 Monitoring and supervision will include regular correspondence with the Recipient, and review of the Recipient's Progress Reports. AWF will verify whether the outputs of the project have been delivered with the required quality and are in line with the Agreement's budget and schedule. A mid-term review (MTR) will be undertaken at the end of project year one to review the project's achievements and constraints. Similarly, at the end of project year two, the MOA prepare a project completion report (PCR). The AWF will consider assistance from the Operations Complex in undertaking monitoring and field supervision missions on behalf of the AWF.

4. PROJECT BENEFITS

4.1 Effectiveness and Efficiency

4.1.1 Water is of critical and strategic importance in the development of the agriculture sector in Botswana. The prevailingly flat topography in crop production areas limits new opportunities for dams, hence control and utilisation of run-off water is increasingly seen as an alternative to improved crop productivity. The project will provide the initial technical

reports and advice that will trigger the investment in the PAIDP, and ultimately lead to improved institutional capacity in management of water for production.

4.1.2 The project will significantly contribute to an efficient construction of water control and management system; build capacity in ecosystem conservation and ultimately lead to better income for the beneficiaries in the PAIDP.

4.2 Sustainability

The project will be sustained by Government's strong commitment to the process of development reforms, and beneficiary participation. The building of effective linkages with agricultural extension and research support services suggests that water and ecosystem management and conservation technology adoption which, in combination with improved access to ancillary services and existing infrastructure will increase crop productivity and hence incomes of farmers.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The Government of Botswana places high priority in the development of water control and management system as well as providing farmers with knowledge and technical support to modernise their production enterprises. The development of water control and management systems as contained in this document has been anticipated to lead to trigger an investment in Botswana. The proposed conservation approach to agricultural production to manage water, soil and ecosystem in a holistic manner would ensure environmental integrity of Pandamatenga area.

5.2 Recommendations

5.2.1 Based upon a critical assessment of the relevance, effectiveness, and sustainability of the project, as well as the capacity of the Recipient, it is recommended that the AWF approves the amount of Euros 1,169,000 to finance the water control and management activities as detailed in Section 2.4 of this report.

5.2.2 Following AWF's approval of the grant request, a Grant Agreement will be signed between Botswana's Ministry of Finance and Development Planning and AWF. The condition for grant effectiveness and first disbursement shall be the opening of a Special Account in a bank acceptable to the AWF. The depository bank shall issue a confirmation in a form acceptable to the AWF that the funds in the Special Account will be segregated for the specific purposes for which the Grant is granted, and consequently shall not be subject to setoff, seizure, or attachment.