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PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF
US\$ 46.31 MILLION

TO THE

PEOPLE'S REPUBLIC OF BANGLADESH
FOR THE

INTEGRATED AGRICULTURAL PRODUCTIVITY PROJECT

June 24, 2011

LLP	Low Lift Pump	PMC	Project Management Committee
M&E	Monitoring & Evaluation		
MDG	Millennium Development Goal	PMIS	Project Management Information System
MIS	Management Information System	PMU	Project Management Unit
MOA	Ministry of Agriculture	PRA	Participatory Rural Appraisal
MOFL	Ministry of Fisheries and Livestock	PSC	Project Steering Committee
MOWR	Ministry of Water Resources	RAP	Resettlement Action Plan
MT	Metric Tonnes	RFP	Request for Proposals
NARS	National Agricultural Research System	RPC	Regional Project Coordinator
NSAPR	National Strategy for Accelerated Poverty Reduction	RPCC	Regional Project Coordination Committee
NWMP	National Water Management Plan	RPF	Resettlement Policy Framework
O&M	Operation and Maintenance	RPIU	Regional Project Implementation Unit
ORAF	Operational Risk Assessment Framework	RPM	Regional Project Manager
PC	Planning Commission	SAAO	Sub Assistant Agriculture Officer
PD	Project Director	SBD	Standard Bidding Document
PDO	Project Development Objective	SCA	Seed Certification Agency
PFP	Procurement Focal Point	SGA	Seed Growers' Association
PM	Project Manager	SMF	Social Management Framework
		SO	Strategic Objectives
		SRR	Social Rate of Return
		SPV	Seed Producing Village
		STW	Shallow Tube Well
		UAO	Upazila Agriculture Officer
		UFO	Upazila Fishery Officer
		ULO	Upazila Livestock Officer
		UPCC	Upazila Project Coordination Committee
		WARPO	Water Resources Planning Organization
		WUG	Water User Group

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Bangladesh
Integrated Agriculture Productivity Project

Table of Contents

I.	Strategic Context.....	1
A.	Country Context.....	1
B.	Sectoral and Institutional Context.....	1
B.	Higher Level Objectives to which the Project Contributes.....	4
II.	Project Development Objectives	4
III.	Project Description.....	5
A.	Project Components	5
B.	Project Financing.....	7
1.	Lending Instrument.....	7
2.	Project Costs and Financing.....	7
C.	Lessons Learned.....	7
IV.	Implementation	8
A.	Institutional and Implementation Arrangements.....	8
B.	Results Monitoring and Evaluation.....	10

PAD DATA SHEET

Bangladesh

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Project description: Component 1: Technology Generation and Adaptation (Base cost US\$ 7.58 million)

I. Strategic Context

A. Country Context

1. Bangladesh has made considerable progress in development, sustaining high rates of economic growth and reducing poverty incidence by 9% between 2000 and 2005 (from 49% to 40%). The country is on track to meet the Millennium Development Goals (MDGs) related to human development such as child mortality and combating HIV/AIDS, where it has outperformed other countries in the region. In addition between 2000 and 2007, Bangladesh was largely self-sufficient in terms of production of its staple food - rice.

attaining these goals, the sector faces several significant constraints: (iphiiphidese fcestni

B. Higher Level Objectives to which the Project Contributes

11. The Bank's Country Assistance Strategy for 2011-2014 aims to support GOB's objectives of attaining 6% or higher growth rate through focus on four Strategic Objectives (SOs). SO 2 aims to reduce environmental degradation and vulnerability to climate change and natural disasters. An outcome expected under this objective, through Bank-assisted interventions, is improved agriculture production and food security. This project directly aims to generate this outcome in the targeted districts. Further, in line with SO 2, it does so through introduction of technologies, agronomic practices and farm-level investments designed to reduce vulnerability of (agricultural production and rural livelihoods) to natural disasters and forecast climate change impacts.

II. Project Development Objectives

1. PDO

13. The proposed Project Development Objective (PDO) of the Integrated Agricultural Productivity Project is to enhance the productivity of agriculture (crops, livestock and fisheries) in pilot areas. These areas lie in Rangpur, Kurigram, Nilfamari and Lalmonirhat districts in the North and Barisal, Patuakhali, Barguna and Jhalokathi districts in the South.

14. The proposed project is based on grant proposal submitted by GOB for funding under the GAFSP. The proposal was approved by the Steering Committee of the GAFSP and awarded a grant amount of US\$ 50 million to be managed by the World Bank and the FAO as Supervising Entities (SEs). The World Bank was entrusted as the SE for the investment project of US\$ 63.81 million, funded partly by GAFSP grant (US\$ 46.31 million) and partly by GOB contribution (\$17.50 million). (The remaining US \$ 3.69 million will be used for a separate TA and Capacity Building Component of the project that will be supervised by the FAO. Therefore the overall project size therefore stands at US \$ 67.50 million)

2. Project Beneficiaries

15. The primary beneficiaries will be farmers, predominantly small and marginal, in the selected project districts (about 175,000 crop farmers, 60,000 livestock farmers and 60,000 fish farmers; and about 20% of beneficiaries being women farmers).

3. PDO Level Results Indicators

16. The key expected outcome indicators from the project are: (i) productivity of paddy (as representative of crops sub-sector); (ii) productivity of milk (as representative of livestock sub-sector); (iii) productivity of fish; and (iv) number of farmers whose productivity has increased in crops and/or livestock and/or fisheries.

III. Project Description

A. Project Components

17. The project aims to increase agricultural productivity and livelihoods in agro-ecologically constrained areas by strengthening integrating of key aspects impacting agricultural production: research-extension-farmer linkages in order to furnish relevant technologies and practices to farmers; technology promotion with enhanced availability of improved seed, to ensure sizable spread effects; introduction of improved crop and water management practices; and training and capacity building of farmers' groups along with promotion of key productive assets. Together these constitute a pilot approach to addressing the problem of low productivity growth. Success achieved in this regard can be scaled up nationally, especially in the context of the complementary, long-term National Agricultural Technology Program which is supported by the Bank.

Component 1: Technology Generation and Adaptation (Base cost US\$7.58 million)

18. This component will support the PDO by adapting and making available for project farmers' the technologies and management practices that will increase yields and production intensities of crops and fish. It will address one of the major constraints to agricultural growth in the project area which is insufficient "supply" of relevant technologies and practices. There are three sub-components: (i) technology generation/adaptation for rice; (ii) technology generation/adaptation for "other" crops (viz. wheat, maize, pulses and oilseeds); and (iii) technology generation/adaptation for fish. Activities to be financed under this component include: evaluation and release of new/improved crop variD()JTJ2(of3()3(vr)3(e)4(a)4(e)de4(:)42(i)-2(g)1

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related to seed certification and enhancement of seed distribution capacities. Community mobilization and extension will comprise activities relating to supporting farmers' groups in adopting project disseminated technologies and practices, and enabling them to further spread them through farmer-to-farmer interactions. Therefore, activities to be financed under this component include demonstrations, provision of seeds and inputs, community productive assets, mobilization and back-stopping of farmers' groups, trainings and exposure visits, and facilities for seed testing, processing and storage.

21. The expected outputs from this component are: adoption of improved varieties and production practices for rice and other main crops; greater availability of quality seed at farmers' level through community seed production; adoption of improved fish culture practices; adoption of improved livestock husbandry practices along with improved breed where feasible; and expansion of availability of certified seeds through formal channels in the project area and beyond.

Component 3: Water Management (US \$11.82 million)

22. This component will support the PDO by improving availability of irrigation water and efficiency of its use. It will thus enable farmers to increase cropping intensity, improve cropping patterns and reduce irrigation related risk/variability in crop production that can inhibit investments in other modern technologies/inputs. There are two sub-components: (a) conservation and utilization of surface water (including rain-water harvesting); and (b) enhancement of irrigation efficiency. Conservation and utilization of irrigation water will comprise: (i) rehabilitation of (existing) natural water bodies, canals and ponds for better conservation of surface water; (ii) rehabilitation of existing natural channels (in the south) to conserve tidal sweet water; (iii) harvesting rain-water in rehabilitated natural water bodies and creeks including clay lining to reduce seepage losses; and (iv) harvesting rain-water at homestead level for household consumption, livestock and kitchen garden use. Enhancement of irrigation efficiency will comprise (i) installation of buried pipe network connections to low lift pumps (LLPs) and deep tube wells (DTWs) in appropriate locations to enhance irrigation conveyance efficiency; and (ii) repair of selected DTWs in the Northern Region. In the context of these two sub-components, a variety of training activities will also be supported. The outputs of this component will be expansion in irrigated area and increase in irrigation efficiency.

Component 4: Project Management (US \$5.12 million)

23. This component will support the realization of the PDO by ensuring that (i) interventions undertaken under the project are appropriately planned, coordinated and aligned with project design and development objectives; (ii) implementation arrangements and activities are in line with relevant fiduciary and safeguards policies, procedures and standards; and (iii) there is due monitoring, oversight and reporting of project implementation and the resulting outputs and outcomes. This component will finance the establishment and operation of (i) a Project Management Unit (PMU) in Dhaka and (ii) two Regional Project Implementation Units (RPIUs) - in Rangpur (North) and Barisal (South). The PMU and RPIUs will coordinate, at their respective levels, the activities of various implementing agencies, including the research institutions, the line departments for extension, BADC (seeds and inputs supply), community

level service providers and any CSO/NGO. Activities to be financed under this component include: (i) establishing and supporting project units at the overall and regional levels; (ii) specialized support services relating to key activities such as independent external M&E, external audit, financial accounting and procurement; and (iii) training of staff involved in project implementation.

Technical Assistance and Capacity Building – FAO

24. The GAFSP-funded IAPP will contain an additional element on Technical Assistance and Capacity Building, which is being prepared and implemented under the Food and Agriculture Organization of the United Nations (FAO) as the Supervising Entity. This will be financed by \$3.69 million grant from GAFSP. This FAO supervised operation has been designed to support the proposed investment operation as well as serve the larger capacity building needs of the sector and the country in the focus areas. Although for fiduciary and accountability reasons it will be implemented as a separable operation, the task team for this project will be located within, and work in close cooperation with, the Project Management Unit of the IAPP.

B. Project Financing

1. Lending Instrument

25. The project will be financed by a grant provided under the Global Agriculture and Food Security Program.

2. Project Costs and Financing

Project Components	Project cost (US\$ million)	IBRD/IDA/ Grant Financing (US\$ million)	% Financing
1. Technology Generation & Adaptation	7.58		
2. Technology Adoption	35.35		
3. Water Management	11.82		
4. Project Management	5.12		
Total Baseline Costs	59.87		
Physical contingencies	0.35		
Price contingencies	3.59		
Total Project Costs	63.81		
Interest During Implementation	00		
Front-End Fees	00		
Total Financing Required	63.81	11.04	17.30

26. The design of this project incorporates lessons learned from on-going and previous projects in Bangladesh and in the Region more generally.

	Lesson	Key Design Feature
1.	Demonstrations, organized as one-off events; do not cause significant spread effects	<ul style="list-style-type: none"> - Demonstrations in this project are part of phased, multi-year engagement at any project site - The design and working of FGs is intended to facilitate demonstration-cum-adoption effects
2.	Lack of complementary inputs – especially seeds – restricts adoption of demonstrated crops/varieties (often, farmers have no access to the newer varieties demonstrated)	<ul style="list-style-type: none"> - Enhancement of seed availability at the farmer level has been given priority in the project -

27. *Project Management.* The project will be implemented over a period of five years. The project administration and implementation arrangements build on existing institutions and capacities, and reflect the technical characteristics as well geographic location of the project's activities. The Ministry of Agriculture (MoA) will be the lead ministry and will work jointly with the Ministry of Fisheries and Livestock (MOFL) to implement the project. Day-to-day project administration and management will be carried out by a central Project Management Unit (PMU)

32. *Procurement and Financial Management.* In view of the number of agencies involved and the assessment of their (varying) capacities, the PMU will play a central role in carrying out procurement and financial management functions. To mitigate risks, an action plan and a performance monitoring mechanism has been agreed, involving sufficient staff, systematic capacity building, monitoring and review, and a credible complaints handling mechanism.

33. *Fund Flow Arrangements.* GOB contributions would be channeled through MOA as per the Development Project Proposal (DPP). MOA will ensure that the cost of the approved programs is included in their respective ministries' budgets. For utilization of eligible project expenditure, the PMU will maintain one designated account (DA) where Grant funds will flow under agreed terms and conditions. The designated PD of PMU and, in his/her absence, the Deputy, will be the authorized persons for operating the DA. PMU will show fund transfer as Advances from Designated Account to the Operating Account, which will need to be accounted for, preferably within 30 days but in no case beyond 90 days. In case of RIUs, no separate operating accounts will be maintained. Expenditure relating to regional offices and components under its jurisdiction will be met out of the Designated Account maintained at the PMU level.

34. *Financial Reporting.* PMU would be responsible for consolidating financial information from executing agencies and PRIUs for preparing Financial Statements on a monthly basis. For preparing consolidated Interim Financial Reports (IFRs), the PMU would develop specific formats to be used by various agencies for their periodic submission to the PMU. A set of IFRs are being developed. This and will include: Financial Statements (Sources and Uses of Funds, Uses of funds by project component, Special Account Reconciliation Statement). The consolidated project financial Statements, to be prepared by the PMU, will be audited by the Comptroller and Auditor General (C&AG). The C&AG is considered an independent auditor, acceptable to the Bank. The audit report of the project would be submitted to the Bank within six months of the end of each fiscal year. The audit reports would be monitored in the Audit Report Compliance System (ARCS).

B. Results Monitoring and Evaluation

35. *M&E Arrangements.* PDO level and intermediate results indicators will be monitored and evaluated through the following methods and tools: (a) M&E strategy specifying priorities, information requirements, and tools and methodologies for data collection, analysis and

36. *Data.* Most of the data required for project M&E will, given its nature, arise – and hence be collectible – in the course of project implementation (e.g., adoption rate). As such, measuring project impact is not dependent upon external sources of data which may be beset by issues relating to reliability, comprehensiveness of coverage and capacities of the data collecting agencies. In conjunction with the project M&E system, the Community Facilitator (CF) will be responsible for the collection of M&E data, which will be input into the Project MIS – through a web-enabled interface or with mobile phones. Beyond this monitoring, “evaluation” will be carried out by a competent firm that will undertake the necessary baseline, mid-term and Impact Evaluation work. The PMU will also play an active role in ensuring that the project M&E is in line with the national M&E framework.

C. Sustainability

37. *GOB interest and commitment.* There is strong GOB commitment to this project. GOB was the first – and so far the only – country in South Asia to successfully apply for a grant under the Global Agriculture and Food Security Program (GAFSP), which is financing the project. Moreover, GOB is co-contributing about 27% of total project costs. Agriculture is very high on the development agenda of GOB, with allocations to this sector showing increase, especially after the food price crisis of 2008. Activities by development partners, including the Bank supported NATP, and donor partners’ supported Country Investment Plan for the agricultural sector, will maintain development focus on agriculture and productivity issues, which this project addresses.

38. *Sustainability.* *Sustainability of project outcomes is highly likely.* Sustainability is a core project principle and has been factored into project design through the following design features and/or expected measures.

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- Technical Sustainability: The project will undertake the following activities to enhance technical sustainability: (i) technical training provided to FGs with respect to livestock, crop and fisheries activities (e.g., vaccination training for poultry); (ii) technologies demonstrated to FGs will be relatively simple, and will not necessarily generate a post-project demand for technical back-stopping; and (iii) technology dissemination at the ground level will be done by farmer-led mechanisms rather than external service providers.
- Social and Environmental Sustainability: Socially, the project will target the marginal and poor farmers, thus avoiding elite capture and maintaining broad support for the project at the ground level. Safeguard action plans will reduce tension and help manage any potentially negative social and environmental impacts. The M&E system will track social development indicators.
- Monitoring and Evaluation: A strong monitoring system will assist in monitoring and assessing the sustainability of investments made under the project.

V. Key Risks and Mitigation Measures

39. *The risks to the PDO being achieved are rated Medium – I (Low Likelihood, High Impact). The main sources of risk assessed are (i) involvement of multiple agencies – each with limited staffing and capacities - in project implementation (this spills into fiduciary risks relating to financial management and procurement); (ii) weaknesses in training and working of FGs, which are central to project implementation; (iii) failure of farmers to adopt the disseminated*

VI. Appraisal Summary

A. Economic and Financial Analysis

FRR = 20.8%, NPV = USD 34.5 Million, ERR = 21.4%

41. *Benefits.* Cost-benefit analysis has quantified benefits from the following sources: (i) increase in the productivity of major crops (cereals, pulses, oilseeds and vegetables) by about 12 to 29% in 175,000 farms; (ii) increase in animal productivity by about 25 to 60% for milk and meat in 60,000 farms; (iii) increase in fish productivity by about 21% in 60,000 fish farms; and (iv) increase in irrigated area coverage with improved efficiency in 25,000 ha of 50,000 farms. These benefits are generated primarily through improved, tested agricultural technologies/practices and improved irrigation water management that will be intensively propagated through a network of 10,000 demonstrations, linked to adoption groups, in the project area. The project beneficiary profile includes women (20%), landless households (HHs) (7%), agricultural labor HHs (24%) and small farm holders (81%). The analysis conservatively estimates project-generated benefits in at least two respects: (i) for benefit calculation, it is assumed that only 80% of all the farmers directly impacted by the project – through demonstrations and adoption support – will sustainably increase their productivity; and (ii) benefits accruing to farmers outside project sites are not included. However, these benefits are expected to be sizable: the increase in the annual certified seed production of quality seed by 3500 MT is estimated, for instance,

(16%) and reduced production variability (4%). The financial rate of return (FRR) for the project as a whole is estimated at 20.8%.

43. *Poverty and Employment Impact.* Annual incremental farm financial income for the project beneficiaries is estimated to vary from USD 105 for livestock farms to USD 165 for crops and fish farms. Irrigated farmers will realize USD 208 as incremental farm financial income. Major projected farming systems, based on current evidence, are paddy-based (21%), livestock-based (5%), fish-based (18%) and mixed farming systems (56%), with a combination of crops, livestock and/or fisheries. Weighted by these shares, average annual financial income gains for the average project beneficiary HH is estimated at USD 210 at full development by end-project which is equivalent to lifting at least 20% of the project benefited HHs above *upper* poverty line of USD 195 at 2011 prices defined for the project districts. Total annual employment generated due to the project will be 7.1 million person days. On average the project will provide additional 20 man-days of farm employment annually for each of the 345,000 project HHs included in cost-benefit analysis.

44. *Sensitivity Analysis.*

47. The project relies heavily on community involvement, through a variety of farmers' groups, for implementation, building on the growing experience with community-driven

documents acceptable to the Bank. Details of procurement arrangements are provided as part of project implementation arrangements elaborated in Annex 3 of the PAD.

E. Social (including safeguards)

50. A comprehensive Social Assessment (SA) has been conducted by MoA, supported by stakeholder consultations. While the project is expected to benefit the communities, the implementation of specific project investments could lead to some adverse social impacts. Potential adverse social impacts during the implementation phase of investments include loss of land or structures, loss of access to areas for livelihood support, elite capture/ exclusion of vulnerable community, and public safety issues. The Social Management Framework (SMF) prepared for the project acknowledges these issues and integrates the measures for addressing them in the project implementation process. However, given the nature of interventions, the scale of adverse loss is likely to be small. The SMF includes Resettlement Policy Framework, which specifies the procedures, eligibility, grievance redress and other measures to be followed in the event that resettlement or land taking is required for any intervention; a Tribal Management Framework with the objective of improving the quality of life of tribal population, though tribal community is not likely to be adversely affected; and a Gender Development framework. The target beneficiaries of the project include the vulnerable sections namely, women, landless, small and marginal farmers, tribal and similar vulnerable community members to be identified through social mobilization exercise during implementation. The design of the project is rooted in community participation and social development goals include inclusion; equity; participation; transparency; and accountability. The project will help build and strengthen the existing local institutions in order to deliver the benefits and empower the community. The project will engage with local communities and key stakeholders to ensure their inclusion and participation in the planning, implementation and subsequent management of the investments especially the vulnerable.

51. A social accountability mechanism will be established for the project. The key

the concerns of all vulnerable groups through participation and informed consent, so it is anticipated that any tribal groups covered would be project beneficiaries.

F. Environment (including safeguards)

Annex I: Results Framework and Monitoring

**COUNTRY: BANGLADESH INTEGRATED AGRICULTURE PRODUCTIVITY PROJECT
RESULTS FRAMEWORK**

PROJECT OUTCOME INDICATORS

Cumulative Target Values

Data Collection

BANGLADESH: Integrated Agricultural Productivity Project (IAPP)

Annex 2: Detailed Project Description

1. The proposed Project Development Objective (PDO) of the Integrated Agricultural Productivity Project is to enhance the productivity of agriculture (crops, livestock and fisheries) in pilot areas. These areas lie in Rangpur, Kurigram, Nilfamari and Lalmonirhat districts in the North and Barisal, Patuakhali, Barguna and Jhalokathi districts in the South. These include the salt-affected tidal surge areas in the south and flash-flood prone and drought-prone areas in the north.

2. The main expected outcomes of the project are increased productivity in selected crops, fish and livestock; increased cropping/production intensity; and diversified production base for the targeted households. These outcomes are expected to be achieved through interventions that lead to release of improved varieties of crops, greater availability of quality “seed” (for crop,

5. The Bangladesh IAPP will have four components: (i) Technology Generation and Adaptation; (ii) Technology Adoption; (iii) Water Management and (iv) Project Management.

Component 1: Technology Generation and Adaptation (Base Cost US\$ 7.58 million)

Description

6. *Relation to PDO.* This component will support the PDO by adapting and making available for project farmers' technologies and management practices that will increase yields and production intensities of crops and fish. It will address one of the major constraints to agricultural growth in the project area which is insufficient "supply" of relevant technologies and practices. This insufficiency in supply of locally relevant and applicable production technologies and practices in the project area is due to resource limitations in research and weaknesses in research-extension-farmer linkages.

7. *Rationale.* By design, the project has targeted areas with significant environmental stress (seasonal droughts, cold snaps and flash flood submergence in the North; varying levels of salinity, tidal and saline submergence in the South). Furthering agricultural development in these areas requires suitable varieties, and location and problem specific technologies and production practices. There exist a set of mature (i.e., on-the-shelf or in the final stages of development) technologies within the research system that are generically relevant to these conditions. However these need to be refined and adapted to local soil-water-climate conditions and the resource base as well as the preferences of the farmers in the project areas.

8. The component will support the four areas needed to bridge the gap in applicable technologies for the project regions: (i) support to relevant research institutes – Bangladesh Rice Research Institute (BRRI), Bangladesh Agriculture Research Institute (BARI) and Bangladesh Fisheries Research Institute (BFRI) – to undertake validation and adaptation of mature technologies for dissemination to farmers; (ii) support for greater involvement of farmers and extension agencies in the trials and demonstrations to improve relevance and effectiveness (i.e., better research-extension-farmer linkages); (iii) enhance capacity of these research institutes to produce larger quantities of breeder seed and fish breeding stock so that the released varieties and technologies can be adopted at scale; and (iv) support training and capacity building to improve the process of technology development, refinement and transfer at various levels.

9. *Results.* The outputs of this component will be: (i) release of 23 new seed varieties and improved fish species and (ii) 22 packages of new cropping and fisheries production practices by the end of the project. It is also expected that there will be an increase in breeder seed production. Beyond these effects measurable during the project's lifetime, it is expected that this components investments will enhance the capacity of the research system to maintain a pipeline of relevant technologies and of the extension system to effectively disseminate them to the farmers.

Sub-Components and Activities to be Financed

feed (from growing poultry industry) and forage needs. Maize has a relatively higher stress tolerance capacity (with respect, drought and water-logging) and can be introduced in different cropping patterns in both winter and summer seasons. With respect to both oilseeds and pulses there is significant shortfall in domestic production in relation to demand, and currently these crops produce low yields due to poor varieties and management practices.

17. The following activities will be financed under this sub-component: (i) evaluation and release of new varieties; (ii) development and refinement of location and problem specific crop husbandry practices; (iii) strengthening breeder seed production capacity; and (iv) training.

18. *Evaluation and release of new varieties.* BARI has identified several promising lines of wheat and maize (high yield, short duration, with adaptation to drought, boron-deficiency and acid soils) which will target project districts mainly in the North. Similarly, it has identified promising lines of oilseeds and pulses (high yield, short duration, and adaptation to salinity, drought, boron-deficiency and acid soils) which will target project districts both in the North and the South. These varieties will be taken up for participatory evaluation and variety selection on the farmer fields in the project areas. If the performance in the adaptive and validation trails is found to be better than the existing varieties, then steps will be taken for the release of these varieties for general cultivation and promoted under Component 2.

19. The other three activities being financed will follow along the lines for rice above. The *development and refinement of location and problem specific crop husbandry practices* will involve agronomic management trails and demonstrations relating to salinity, drought, improved cropping patterns, inter-cropping, fertilizer management, soil health management, pest management, water harvesting and efficient water-use technology. The objective will be to develop/identify cost-effective practices, especially for resource poor farmers, which can lead to gains in productivity, cropping intensity and crop diversification. Similarly, to enhance *breeder seed production* the capacity of selected agricultural research stations will be augmented. Finally, *training and capacity building* will involve training for BARI resource persons as well as training given by BARI staff in technology transfer and seed production to extension agents, farmers and other relevant players in the rural areas.

(iii) Technology for Fish (BFRI)

20. Activities to be financed under this sub-component include (i) on-station pure line development; (ii) adaptive trials of aquaculture technologies at farmers' field conditions; (iii) takTJ /FO 1 7

also three types of activities: (i) refinement of *monoculture tilapia* fry nursery technique in farmers' ponds; (ii) refinement of *thai koi* fry production in farmers' ponds; and (iii) refinement of quality fingerling production of *pangas*

significant concurrent work responsibilities, and limited ongoing training means that the knowledge and technical skills of the extension staff need to be upgraded.

27. *Results.* This component is expected to result in 175,000 crop and horticulture farmers using improved varieties and technologies, 60,000 fish farmers using improved quality “seed” and better aquaculture practices, 60,000 livestock rearers benefiting from adoption of improved breed and/or husbandry management practices, and an additional 3,500 tons of certified seed being made available to the country’s farmers through the seed distribution system.

Sub-Components and Activities to be Financed

28. This component aims to address these problems and issues through the five following sub-components: (i) Crop Production; (ii) Fisheries Production; (iii) Livestock Production; (iv) Enhancement of Seed Availability; and (v) Community Mobilization and Extension.

(i) *Crop Production (DAE)*

32. **Community Seed Production.** Approximately 800 community seed “interventions” are expected to be organized during the lifetime of the project in a phased manner, mainly for rice production. The primary objective of this activity is to enhance availability of good quality seed at the farmers’ level. Availability of good quality seed is a critical constraint, especially for small and marginal farmers. Evidence suggests that use of improved variety seeds alone – with no other change in inputs/practices – increases yields by at least 15%. In the project context, however, demonstration of improved agronomic practices will be integrated into this activity. More importantly, seed production activities will target new/improved and/or locally adapted crop varieties which have been selected for widespread promotion/dissemination under the project, closely linked to Component 1. This is to ensure that adoption by farmers of project-supported crop varieties does not subsequently suffer due to lack of availability of suitable seed.

33. The activity of community seed production involves the following aspects that will be financed by the project: (i) training of farmers in seed production, drying and storage (as well as associated set of improved production practices for the crop being produced); (ii) support for storage in form of “seed cocoons” at the community level and secure, re-usable storage bags at

37. *Project Approach to Improved Productivity Practices for Field and Horticultural Crops and Community Seed Production.* The project approach to technology dissemination – in this case as well as in the others – is to use demonstrations as an entry point for enabling wider adoption of the technology by the community. Approximately 2800 “interventions” are expected to be organized during the lifetime on the project in a phased manner. Each intervention will target a village to be chosen according to specific criteria. Each intervention will have the following three-year structure design to widely spread the disseminated technology, using a farmer field school (FFS) approach:

- (i) In the first year, a small group (a set of three selected from a FG) of “demonstration farmers” will be targeted, on whose fields the “technology package” will be demonstrated under close technical supervision according to an agreed training/demonstration calendar. The project will provide these farmers with a de

(ii) ***Fisheries Production (DOF)***

44. *Cage and Pen Culture.* This activity will target the landless fishers living close to public water bodies. Cage and pen culture are promising technologies for areas where there is plenty of water, as in the project districts in the South. Sets of 10 cages will be located in public access water bodies close to the homes of demonstration group members. Since ownership of land is not a requirement for cage or pen culture, poor landless fishers will be selected as project participants. The project will provide demonstration inputs and technical support.

45. *Training and Capacity Building.* This will involve training for DOF resource persons as well as training given by DOF staff to a variety of stakeholders such as nursery operators, fry traders and farmers, and will include exposure visits for farmers. Further the project will support the renovation of DOF Fish Seed Multiplication Farms to improve capacity for brood management, quality seed production and rearing of hatchlings.

(iii) ***Livestock Production (DLS)***

46. The activities being financed under this sub-component are: (i) support for poultry production; (ii) support for goat/sheep production; (iii) support for dairy (cow/buffalo) production; (iv) health campaigns; and (v) training and capacity building.

47. Overall, the livestock sub-sector is closely interlinked with the integrated farming system in Bangladesh. Cattle, buffalo, goat, sheep and poultry are a source of cash income, nutrition and food security in the rural areas. Ample scope exists developing these activities further as part of a mixed farming system, which can contribute to poverty alleviation and sustainable livelihoods especially women and the rural poor. Currently the livestock sector exhibits the following constraints: (i) low productivity; (ii) lack of good husbandry practices; (iii) lack of organized farming system; (iv) shortage of fodder and forages; (v) lack of improve breeding practices; and (vii) lack of adequate animal health care and technical services.

48. *Support for Poultry Production.* Poultry is the most prominent livestock activity in the country and it is estimated that more than 80% of rural households keep some poultry, almost exclusively local unimproved breeds. There is a very significant, and rapidly growing, demand for poultry products, with indigenous birds commanding a premium price. Of the approximately 2.5 million poultry farming households (HH) in the project areas, the vast majority involves backyard production, with 2-10 birds per HH. Major limitations to productivity are the poor knowledge/practice of the traditional rearers, poor health/mortality, and inadequacies of shelter.

49. The project will support the development of backyard poultry through building the capacity of (women) rearers by imparting appropriate training on the importance of routine vaccinations and de-worming, well-ventilated night shelters, brood management and nutrition. These simple technologies can help significantly enhance production and reduce mortality within a short period of time. The project approach is to form demonstration groups (who will be linked to potential adopters that are expected to take up the demonstrated activities in the coming year, similar to the approach of the Crop Production sub component). Each demonstration will be provided the requisite training, partial inputs support for health care, nutrition and shelters. Further, in every group one rearer will be selected as “vaccinator” for taking care the routine

from the project area that can be distributed to other farmers in the country through public or private distribution channels. A direct benefit to seed producing groups (established under the Seed Production sub-component of Component 2) is that, following certification, the market value of their produce would be considerably enhanced.

59. *Seed Distribution.* Certified, quality seeds produced under the project may be distributed by private or public channels (with FGs/SGAs having the flexibility to enter into contractual/distributional arrangements of their choice). A reliable seed distribution system with outreach requires, however, facilities for cleaning, grading, drying, fumigation, controlled-condition storage, as well as an extensive distribution network. In general BADC plays a key role in this regard in Bangladesh in major “notified” crops (rice, wheat, maize, potatoes, jute and sugarcane) and non-notified crops (maize). Its existing facilities are, however, stretched and, in any event, are not present in the southern project districts. BADC will conduct activities under the project with the following objectives: (i) work with project community seed production groups where feasible, to make them contract out-growers of seed; (ii) BADC will use the expanded volume of quality certified seeds generated under the project to fulfill the seed needs of farmers over much larger regions in the north and the south. Towards this objective, the project will support the construction of seed processing and preservation centres in the south and relevant augmentation of BADC capacities to enable it to provide relevant support and coverage to project farmers in the north.

60. It is expected that, following the investments under this sub-component, an additional 3500 metric tonnes (Mt) of seed of different categories will be produced, which will directly benefit about 350,000 farmers. In the process, additional employment (for women) will be generated for cleaning, winnowing, grading, processing, tagging and other activities.

(v) ***Community Mobilization and Extension***

61. The project will adopt a group-based strategy to reach out to beneficiaries. In order to build on the social capital already achieved by the on-going programs, the project will assess the feasibility of using existing producer groups. Where necessary, new groups will be mobilized. To achieve the project objectives, the groups will need two kinds of facilitation: (i) technical support and (ii) social/operational support. Technical support involves providing specific guidance on production technologies, management practices, and other technical choices relating to pre-/post-production stages (for the relevant sub-sectors/themes, ranging from crop, livestock and fish to water management). The provision of the technical inputs will be organized and back-stopped by the relevant implementing agencies. (Their roles in this regard are discussed in Annex 3 on Implementation Arrangements.) Social/operational support for different categories of activities: (a) from a group point of view, helping with group identification, formation/mobilization, helping develop group norms and functions, evolution of group governance system, group asset ownership and use, and so on; (b) from an implementation point of view, helping groups to understand the nature and objectives of the project, assisting them to play a key role in design and implementation of the project interventions at a local level; (c) from a monitoring point of view, enabling groups to have a “voice” and ensuring that they have the opportunity and capacity to provide feedback; and (d) from the governance point of view, ensuring that project specific eligibility criteria and other selection methods are transparently followed, groups governance

arrangements work appropriately, and other risks relating to resource diversion or distortion of project-financed investments is minimized.

distribution channels are in-filled with sediments making it difficult for farmers to irrigate in the dry months of January to April.

67. *Results.* The outputs of this component are expansion in irrigated area and increase in irrigation efficiency.

Sub-Components and Activities to be Financed

68. There are three sub-components: (i) conservation and utilization of surface water (including rain-water harvesting); and (ii) enhancement of irrigation efficiency; and (iii) training and capacity building.

69. *Conservation and Utilization of Surface Water.* The following activities will be undertaken: (i) rehabilitation of (existing) natural water bodies, canals and ponds for better conservation of surface water; (ii) rehabilitation of existing natural channels (in the south) to conserve tidal sweet water; (iii) harvesting rain-water in rehabilitated natural water bodies and creeks including clay lining to reduce seepage losses; and (iv) harvesting rain-water at homestead level for household consumption, livestock and kitchen garden use. The first three activities will be undertaken through Water User Groups (WUGs), formed according to specified eligibility conditions. The groups will be supported with capacities and inputs (where appropriate) to make efficient use of the water collected/harvested for supplementary irrigation.

Activities to be Financed

73. The project will finance the establishment and operation of (i) a *Project Management Unit* (PMU) in Dhaka and (ii) *Regional Project Implementation Units* (RPIUs) in Rangpur in the north and Barisal in the south.

74. *Project Management Unit.* The PMU will be headed by a Project Director. It will be supported by Technical Coordinators/Focal Points from each of the eight implementing agencies involved: BADC, BARI, BFRI, BRRI, DAE, DOF, DLS and SCA. It will also have expertise in Administration, Financial Management, Procurement, M&E and Communication, Database Management and Social and Environmental Safeguards as well as relevant support staff. It will also be responsible for (i) overseeing the implementation activities of the project; (ii) coordination of financial, procurement and administrative management (iii) development and implementation of a Management Information System (MIS) for the project to facilitate performance monitoring of all project activities, (iv) organization of evaluation and impact assessments of the project; (v) arranging for expert advice and input from consultants on any subject matter area related to project implementation, (vi) review and compilation of relevant reports and other materials, (vii) submitting biannual and annual progress reports to the World Bank and Project Steering Committees, within one month of the due date, (viii) submitting the audit reports within six months of the close of fiscal year, and (x) liaising with the World Bank concerning operation and management of the project, as and when required to support implementation of project activities.

75. *Regional Project Implementation Units.* The RPIUs will be headed by Regional Project Manager and supported by team of core technical and support staff. Operating under the overall guidance of the PMU, the RPIUs will be responsible for: (i) detailed planning and implementation of all project activities within their respective Regions, (ii) coordination with relevant implementing line departments and agencies, (iii) preparing annual regional plans, (iv) guiding District, Upazila and Union level staff of the project and from implementing agencies teams to work in accordance with the spirit and principles of the project, (v) monitoring and supervising the work being done in the field, (vi) maintaining appropriate records and accounts, (vii) ensuring due attention to safeguards issues, and (viii) ensuring appropriate governance and accountability, including through management of a suitable grievance redressal system.

BANGLADESH: Integrated Agricultural Productivity Project (IAPP)

Annex 3: Implementation Arrangements

1. The project will be implemented over a period of five years. The project administration and implementation arrangements build on existing institutions and capacities, and reflect the technical characteristics as well geographic location of the project's activities.

I. Project Management and Administration

A. Project Administration

2. *Project Management Units* (PMU). The Ministry of Agriculture (MoA) will be the lead ministry and will work jointly with the Ministry of Fisheries and Livestock (MOFL) to implement the project. Day-to-day project administration and management will be carried out by a central Project Management Unit (PMU) based in Dhaka. The PMU will be headed by a Project Director (PD) deputed from the Government of Bangladesh. He/she would be operationally and managerially in charge of the organization structure established at the central, regional and lower levels for implementing the project. The PD will have the authority to make decisions related to the project as well as financial management decisions with the financial powers that have been delegated to the PD under the "Delegation of Financial Powers for Development Projects" issued by the GOB. The PD will be supported by a Deputy Project Director (DPD) who will also be deputed from GOB. The PMU will also comprise of technical coordinators, one deputed from each of the implementing agencies as well as a complement of fiduciary, safeguards and M&E staff.

3. *Regional Project Implementation Units* (RPIU). There would be two RPIUs: one located at Rangpur and the other at Barisal district. Each RPIU will be headed by a Regional Project Manager who will be deputed by GOB. Operating under the overall direction of the PMU, each RPIU would have the responsibility for regional planning and coordination of project activities, ensuring compliance with fiduciary and safeguards standards and processes and overall M&E of project activities in the region.

4. The project has adopted the approach of two RPIUs in view of the fact that project activities will take place in two compact, geographic locations – one in the north and one in the south. Strong regional implementing units have been designed therefore to integrate more effectively the activities of various research institutes and line departments (see implementation arrangements below), project functionaries at District, Upazila and Union levels, CSOs and other stakeholders and target beneficiary groups. An important function of staff at the RPIUs will be to prepare annual plans and to backstop the activities being undertaken from Union level upwards in their respective regions.

B. Project Implementation

5. The approach of the project is to involve the farmer and the local community centrally in planning, implementing, and evaluation of project interventions so as to improve the design and relevance of activities, enhance adoption of new technologies and practices, and increase the sustainability of project outcomes. Farmer and community activities will be technically guided and backstopped primarily by two sources: (i) relevant research institutes and line departments of GOB involved in this project (“the implementing agencies”); and (ii) local community

additional gains, and will be pursued under the project). Third – and partly as a consequence –

group members/beneficiary farmers, roles and responsibilities of the specific group members who will receive any project support in kind, group management and governance arrangements (especially for handling group funds and community-owned assets) and arrangements for ensuring sustainability.

13. *Demonstration and Adoption in Groups.* A specific feature of this project is to go beyond the standard activities of demonstrations and trainings with a clear objective of widespread adoption of technologies by farmers. In view of the resource poor small and marginal farmers that are the primary target of the project, this involves providing technical and in-kind support, on a declining basis, to subsequent cohorts of farmers who are interested in adopting a technology or practice after it has been demonstrated. FGs will be internally organized in a way that enables this phased demonstration-to-adoption effect to occur. For instance, FGs for crop production will have the following internal structure: each demonstration group of approximately 25 farmers will consist of 3 (core) demonstration farmers and about 22 adoption farmers. In the first year of project intervention at that site (PY1), the demonstration farmers shall be trained in

17. *Project Management Committee (PMC)*. The management committee will be chaired by

27. **Risk Analysis and mitigation.** The FM risk for this operation is assessed as Medium-I. Given the current assessment and experience in managing Bank funded operation of various agencies, the PMU will need to be well equipped and assist other departments to address project fiduciary requirements, at least during early years of the project. In this regard, under Component 4 of the project, activities that are proposed to be financed are: (i) establishing and supporting project units at the central and regional levels; (ii) specialized support services relating to key activities such as independent external M&E, external/internal audit, financial accounting and procurement; and (iii) training of staff involved in project implementation. In order to mitigate the risks and to ensure sound FM arrangements throughout the implementation of the project, following FM arrangements have been agreed.

28. Further, the following FM arrangements have been agreed:

- Adequate financial staff will be provided from the very beginning so as to ensure that project implementation at the three tiers does not suffer. There will be a financial specialist/manager/officer and one Accounts Officer in PMU and one Accounts Officer in each of the RPIUs. In addition, an Accountant-cum-Cashier would be appointed in each of the research institutes (BRRI, BARI and BFRI) and implementing agencies (DOF, DLS, DAE, SCA and BADC). This arrangement will be maintained throughout the project period to ensure proper handling of finance functions.
- In most of the implementing agencies or spending units, the existing FM staff would be responsible for maintaining project accounts, complying with internal controls and for providing expenditure statements to PMU.
- All staff undertaking these functions on a full or part-time basis would be provided training and on-going back-up support by PMU to ensure compliance with fiduciary requirements of GOB and the project.
- Appropriate steps would be undertaken to hire FM personnel on a competitive basis with well-defined roles and responsibilities.

29. **Internal Controls**

- PMU, RPIUs and implementing agencies will follow GOB's existing financial power, authority and payment responsibility outlined in the Project Accounting Manual. The approval limit and authority will follow existing government policy and procedures.
- All the vouchers/records/files relating to IAPP expenditure will have to be kept in proper condition up to 3 years after completion of the project.
- The assets acquired with project funds will be maintained properly by making sure that these exist at the right locations and used for the intended purposes. Asset identification systems will be used and registers are to be maintained and updated with changes in assets positions and annual physical ver.15 TD 0.002 Tc ik4(s)-1u

Comptroller and Auditor General (C&AG). The C & AG is considered as independent auditor and acceptable to the Bank. The Audit report of the project would be submitted to the Bank within six months of the end of each fiscal year. The audit reports will be monitored in the Audit Report Compliance System (ARCS).

35. **Supervision Plan:** The initial supervision focus would be on a sampling basis for the review of expenditure below prior review threshold, payment process between PMU and other implementing agencies against defined milestones and monitoring progress of agreed actions during negotiations.

III. Disbursements

36. The preliminary total project cost has been estimated to be US\$63.81 million. Out of this, GAFSP will provide US\$46.31 million and the remaining US\$17.50 will be provided by the government. It is expected that the funds would be disbursed over a period of five years. Report based disbursement procedures would be applicable for withdrawal of funds from the grant. Direct payment and reimbursement shall, when required, be supported by records of such expenditure and/or evidence of payments made by implementing agencies. All documentation showing expenditure shall be retained by the implementing agencies and shall be made available to auditors for audit and to the Bank, if requested. Finally, expenditures incurred during project preparation can be reimbursed under project retroactive financing agreement as long as they are within the standard limits, i.e.: (i) not more than 20% of the amount of the grant; and (ii) not more than twelve months prior to the expected date of signing of the grant agreement. To facilitate payment for project eligible expenditures and in consideration of contributions from GOB and GAFSP respectively, disbursement of the Grant would be made as the table below, showing financing percentage and allocation for various categories to cover expenditures under specific components or sub-components of the project.

Table 1: Allocation of Credit Proceeds

Category	Amount of the Grant Allocated (expressed in USD)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) (a) Goods and works under Parts 2(e), 3(b)(i), 3(b)(ii), and 4 of the Project, including goods for trials, demonstrations and production support ^[NA5]	6,080,000	100%
(b) Vehicles for Project implementation and monitoring	1,630,000	
(2) Consultants' services, Training, and Incremental Operating Costs ⁵	35,990,000	100%

and Incremental Operating Costs ⁵		
(3) Unallocated	2,610,000	
TOTAL AMOUNT	46,310,000	

IV. Procurement

37. **Findings of Procurement Assessment.** The Bank conducted preliminary capacity assessments of seven entities of Ministry of Agriculture (MoA) and Ministry of Fisheries and Livestock (MoFL). In MoA, till date there are about 65 officers who have completed the national procurement training and in MoFL, there are 82 officers trained on the same, over the last seven years. Three of these trained officers from MoA and MoFL were involved during the capacity assessment exercise for this project. The MoA agencies assessed are DAE, BADC, BRRI, BARI, BFRI and the MOFL agencies assessed are DLS and DOF for such a project with a limited funding, procurement through each individual agency may result in a complex implementation arrangement and disoriented procurement processing. Furthermore, the key areas identified for strengthening in the procuring entities under the project are as follows:

- (i) Appointment of a dedicated procurement staff within the PMU at least for first 2 years of the project;
- (ii) Capacity building in administering large contracts or handling procurement activities following Bank Guidelines, particularly for DOF, BIRI, BARI and BFRI;
- (iii) Appropriate application of a credible complaint handling mechanism;
- (iv) Information dissemination, delivery follow up, and payments system.

38. The lack of procurement capacity may result in mismanagement in procurement operations which may lead to significant delay in project implementation and increased cost for the client. Under the ongoing Bank-funded NATP and AIPRP, it is observed by IDA that the major loopholes in procurement lay with improper technical specification, faulty bidding documents, inappropriate packaging of contracts, improper evaluation and many complaints to handle, internal and external or probable political interventions all of which may have resulted in delays in the procurement operations. However, with the interventions of IDA and recurrent hands on job experience, procurement progress in NATP in particular had been satisfactory. Considering all the facts and the experience from the ongoing projects, the project is rated as “**Substantial** (ORAF rating **Medium-I**)” from procurement operation and contract administration viewpoint subject to adoption of certain risk mitigation measures, with procurement activities to be conducted by the PMU formed from representatives of all implementing agencies and research institutes under the project. Several measures to mitigate the associated risks are either in place or being put in place and are described below.

39. **Measures to be completed during project preparation:** (a) Designation of one officer of the PMU as the procurement focal point (PFP) for the project and another officer as back-up;

(b) Finalization of Procurement Plan of each entity covering first 18 months of implementation by negotiation; (c) Agree on the use of PROMIS or equivalent procurement performance monitoring and reporting and agreement on adherence to the regular submission to IDA; (d) Developed TOR for the procurement consultant to be part of the PMU.

40. **Measures to be completed before commencement of procurement of goods, works and non-consultancy services under the project:** (a) confirm the provision of technical support through individual procurement and technical consultants [NA6]to the PMU; (b) confirm that the PFP and procurement consultant to be mandatory members of bid and/or proposal evaluation committees for all procurement under the project; (c) have provisions in the project for a systematic capacity building plan of all agencies in the project through national three-week procurement training provided by CPTU and Bank resource persons; and (d) ensure that staff trained in procurement are retained in the project for at least two years after receipt of such training.

41. **Measures to be taken during project implementation:** (a) In addition to national procurement training, the PFP and his/her back-up would undergo training on international procurement (either through Bank-arranged programs or accredited training outside Bangladesh). The PFP would also be responsible for implementation of the capacity building plan; (b) the PMU will submit quarterly procurement performance monitoring reports (PPMR) based on the indicators of PROMIS starting from three months after the grant effectiveness; (c) for contracts requiring repeated procurement, the bidding documents will be standardized for each type of procurement, cleared by IDA and the same document will be used for similar types of contracts with customized technical specification for the duration of the Project and The Bank's standard format for evaluation report should be used; (d) PMU, with support from the procurement consultant, will explore framework contracts for off the shelf goods instead of launching repeated procurement process; (e) the Bank will arrange procurement orientation or training workshops as and when required to enhance the procurement capacity of the entities; (f) the procurement plan will be updated once semi-annually or more frequently if required;[NA7] (g) The PMU, during project implementation, will try to arrange budget provisions for conducting independent procurement audits annually or bi-annually and share the report with IDA[NA8]; (h) IDA will conduct reviews of about 20% of the post review contracts on an annual basis to check the compliance with the World Bank's Procurement/Consultant Guidelines and procedure in accordance with the financing agreement.

42. **Additional Procurement Risk Mitigation Measures:** In addition, the following will be included as part of procurement and implementation arrangements: (a) ensure entities' officials and staff are informed about fraud & corruption issues; (b) make bidders generally aware about fraud & corruption issues; (c) multiple dropping of bids will not be permissible for all procurement under the Bank financed project; (d) contracts to be awarded within the initial bid validity period, and closely monitor the timing; (e) action to be taken against corrupt bidders in accordance with Section I of the Bank's Procurement/Consultant Guidelines; (f) records and all documents regarding public procurement to be preserved in accordance with the Bank Guidelines; (g) publish contract award information in UNDB online, The Bank's external website and procuring entities' website within two weeks of contract award (for prior review contracts) as well as in CPTU website for all contracts above thresholds specified in the PPR;

and (h) timely payments to the suppliers/contractors/consultants to be ensured and impose liquidated damages for delayed completion. The PROMIS and its reporting format (PPMR) will cover all these steps and this report will also function as a useful monitoring tool for the PMU, representing MoA and MoFL for implementing the project.

43. Procurement financed under the Project will be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated January 2011 and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated

<u>Procurement Methods</u>
(a) National Competitive Bidding
(b) Shopping
(c) Direct Contracting

47. **Methods of Procurement of Consultants' Services:** Selection of Consultants will follow the Bank Consultant Guidelines. Shortlist of consultants for services estimated to cost less than US\$200,000 equivalent per contract may be composed entirely of national consultants. For the selection of these national consultants, the request for proposal (RFP) prepared on the basis of The Bank's standard RFP and acceptable to the Bank may be used. The Procurement Plan will specify the circumstances and threshold under which specific methods will be applicable.

<u>Selection Method</u>
(a) Quality-based Selection (QBS)
(b) Fixed Budget Selection (FBS)
(c) Consultants' Qualifications (CQ)
(d) Least-Cost Selection (LCS)
(e) Single-Source Selection (SSS)
(f) Individual Consultants (IC)

48. **Operating Costs:** The eligible operating costs will be defined in the financing agreement of this project.

49. **Prior review Thresholds:** The Procurement Plan shall set forth those contracts which shall be subject to the Bank's prior review. All other contracts shall be subject to Post Review by the Association. Initial Procurement plan agreed with the borrower for the first eighteen months indicates the following prior review thresholds which will be updated annually based on the review of the capacity and performance of the PMU and will be reflected in the updated procurement plan as appropriate:

Sl. no.	Description	IDA (Prior Review)

Sl. no.	Description	IDA (Prior Review)
	US\$2,000,000 equivalent or more, regardless of the procurement method applied;	
d.	Each contract for consultants' services provided by a firm, estimated to cost the equivalent of US\$200,000 or more;	US\$200,000 equivalent or more
e.	Each contract for services of individual consultants, estimated to cost the equivalent of \$100,000 or more.	US\$100,000 equivalent or more
f.	All contracts for goods/works procured through Direct Contracting, individual procurement consultant/s, individual legal consultant/s (if any) and all contracts for consultants' services procured under single source selection.	

50. **Post Review:** For compliance with the IDA's procurement procedures, IDA will carry out sample post review of contracts that are below the prior review threshold. Such review (ex-post and procurement audit) of contracts below the threshold will constitute a sample of about **20% (Twenty percent)** of the post-review contracts in the project. Procurement post-reviews will be done on annual or semi-annual basis depending on the number of post-review contracts.

51. **Procurement Plan:** The procurement plan for the project is being prepared by the project preparation team and will be finalized before negotiation. This plan will be the basis for selecting methods for procurement as agreed by the World Bank, updated semi-annually or as required to reflect the latest circumstances. As per the initial procurement plan indicated in the table below, the total procurement to be prior reviewed by The Bank under the project is 38% of project cost, comprising Goods of around US\$ 14 million, followed by Works US\$ 8.4 million and Consultancy Services US\$ 1.9 million.^[NA11]

V. Environmental and Social (including safeguards)

Environment

52. Project activities with environmental implications include: promotion of increased production of selected annual crops and livestock with likely associated pesticide use and waste management issues, water management activities and construction. The most important project environmental impacts may include soil and water quality changes from agrochemicals and production. Other minor impacts are possible such as changes to aquatic ecosystems from re-excavation/desiltation activities, increased usage of surface water; conversion of land to agricultural usage; loss of native biodiversity; and minor construction impacts, among others. The project is classified as Category B because its activities are not expected to cause any significant negative or irreversible changes in the environment. The Project triggers

Environmental Assessment (EA) 4.01, Natural Habitats 4.04 and Pest Management 4.09 Operational Safeguard Policies.

53. Environmental Assessment Policy 4.01: The Environmental Assessment Policy 4.01 is triggered because the project proposes activities with potential environmental impacts including crop, livestock and fisheries production as well as water management activities such as irrigation infrastructure, de-siltation and conservation of existing canals and ponds. These impacts are not expected to be significantly negative or irreversible. The Environmental Management Framework (EMF) contains measures to manage these impacts first by prevention, second by minimization and finally by mitigation as necessary. Subprojects will not be identified during preparation and so the EA and Environmental Management Plan (EMP) are prepared as a framework identifying potential impacts and potential mitigation measures as well as mechanisms (procedures and institutional responsibilities) for ensuring sustainable environmental management of the project. A few small buildings may be constructed under the project and these will abide by the *General Environment, Health and Safety (EHS) Guidelines for Construction*. The Project has also taken into consideration the EHS Guidelines for Aquaculture, Annual Crops, Mammalian Livestock and Poultry Production in the development of its EMF.

rehabilitation of existing irrigation works or rainwater harvesting alterations to water bodies already being used, therefore in accordance with the exemption, project activities are “minor additions or alterations to the ongoing scheme; it does not cover works and activities that would exceed the original scheme, change its nature, or so alter or expand its scope and extent so as to make it appear a new or different scheme.”

63. The Environmental Management Framework monitoring and evaluation system will identify and reject or manage interventions that could significantly negatively impact the Bay of Bengal or any aquifers known to be shared.

Social

64. **Stakeholder Consultations and Participation.** A detailed social assessment (SA) conducted by Ministry of Agriculture (MoA) included specific stakeholder consultation during the design and finalization of the assessment report and preparation of social management framework (SMF). The SMF has been disclosed in country on May 26, 2011 and in Bank’s Infoshop on May 31, 2011. The executive summary of SMF has been translated in Bangla and disclosed in country. The local consultations focused on specific issues related to the interventions and potential social issues associated with the interventions.

65. The community consultations were carried out in all the sample villages and primarily focused on (i) mechanism to select beneficiaries; (ii) positive and potential adverse social impacts; (iii) role of existing community based organizations in the project; (iv) role of NGOs working in the project districts and sample villages; and (v) need of the community and their expectations from the project. The potential adverse social impacts as identified in SA include (i) encroachment of the canal land proposed for rehabilitation; (ii) elite capture of project benefits; (iii) poor consultation and lack of involvement of vulnerable groups (landless, women, marginal and small farmers, minorities, tribes) resulting in exclusion of vulnerable; (iv) conflicts on water use; and (v) loss of access to individual or common property during implementation which may result in loss of livelihood.

66. The Resettlement Action Plans (RAPs) if required will also be disclosed as per the principles and procedures as described in SMF, followed by discussion with the affected community (including any individual adversely impacted by such intervention). The executive summary of RAP translated in local language and will be placed in the office of local self-

marginal and small farmers, women, tribes), who constitute an overwhelming proportion of the project communities, will have easy access to the opportunities under the project and benefit the most from the project. The core principles in the implementation of the project are that (i)

appropriate information, communication, and inclusion measures targeted at the tribes and other vulnerable sections of the communities.

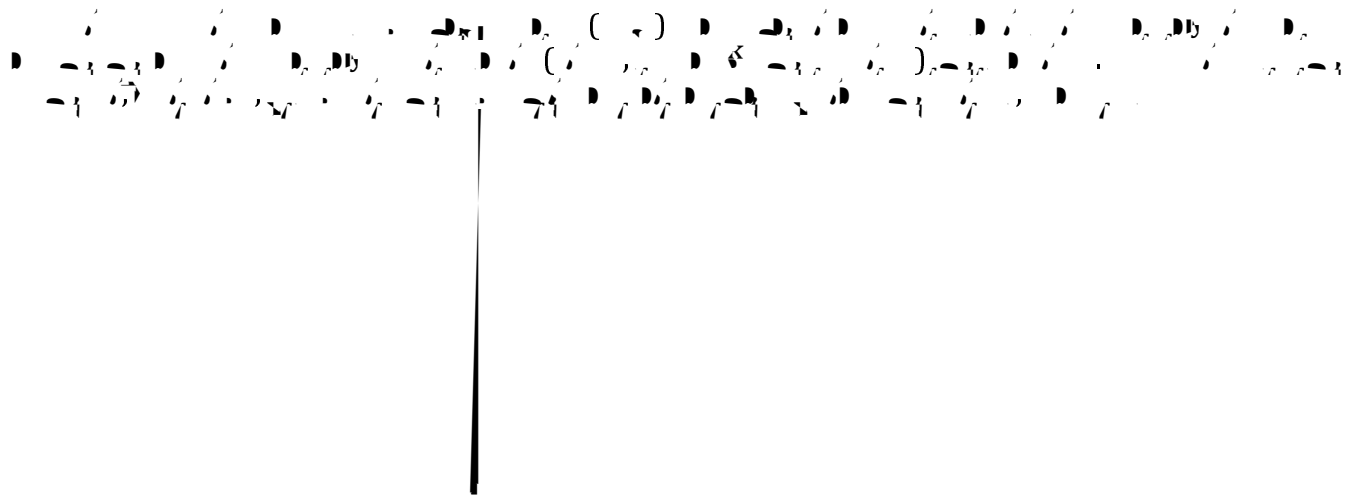
72. ***Mainstreaming gender equity and empowerment.*** This is a focus area in the project. As part of Social Assessment, specific gender analysis was carried out to help analyze gender issues during the implementation. The gender analysis is based on primary data and available secondary data. During the implementation, the social screening will identify issues related to gender disparity, needs, constraints, priorities, benefits and opportunities of women. Based on the analysis of screening results, specific interventions will be designed. The social monitoring plan for the project will have relevant indicators for measuring impacts on participation of women in the project.

73. ***Social accountability and grievance redress mechanism.*** The social accountability mechanism for the Project will cover all interventions. The key processes for ensuring social accountability would be any or a combination of participatory processes such as social audit, citizen scorecards or community report-cards that would acquire feedback on performance of the interventions and of the agencies involved in planning and execution. To address the sub project

Annex 4 Operational Risk Assessment Framework (ORAF)

BANGLADESH Integrated Agricultural Productivity Project

Project Development Objective(s)



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Overall Risk Rating at Preparation	Overall Risk Rating During Implementation	Comments

BANGLADESH: Integrated Agricultural Productivity Project (IAPP)

Annex 5: Implementation Support Plan

Strategy and approach for Implementation Support

1. The strategy and approach for implementation support will focus on the risk factors to achievement of the PDO identified in the ORAF, and in particular on: (i) multiple agencies involved in implementation; (ii) identified institutional weaknesses of those agencies, including with respect to implementing Bank projects; (iii) the need to interact intensively with project beneficiaries at the local level to ensure the adoption of new seed varieties and technologies that will effectively address existing production constraints; and (iv) the need to ensure that project inputs are targeted effectively and transparently.

2. *Multiple agencies involved in implementation:* A relatively large share of project resources will be devoted to management and coordination of the activities of the participating implementation agencies. There will include both a central PMU as well as separate regional RPIUs for both the southern and northern areas included in the project. In addition, there will be

Western countries) level. Farmers and other project implementing entities will be trained or informed as necessary on environmental safeguards related aspects of the project. Annual reviews of safeguard performance will be conducted and changes instituted as necessary. The overall project monitoring information system (MIS) will also capture information on safeguards implementation.

5. **Ensuring adoption of effective varieties and technologies.** It will be very important to ensure effective communication between farmers and the technical agencies participating in project implementation. The information flow needs to be two way to ensure that farmers fully understand the nature, requirements, and implications of proposed changes in production methods, and that the ground realities at the local level in turn can be incorporated into the further development and evolution of these changes. The project is investing heavily in community facilitation and will aim to utilize existing producer/interest groups to the extent possible to organize project beneficiaries early in project implementation. The project is also investing in increased technical presence at the local level to improve the exchange of information.

6. **Targeting of project inputs:** Criteria for identification of project beneficiaries will be finalized at appraisal. Specific criteria will be established for demonstration farmers and primary

ii. **Staffing and skill requirements**

special emphasis on sites identified as having grievances or where slow implementation is being reported;

- d. Information obtained from visits to specific sites by Bank missions will be supplemented, at the regional and district levels, with feedback obtained from a larger set of project beneficiaries through meetings/workshops convened with a cross-

BANGLADESH: Integrated Agricultural Productivity Project (IAPP)

Annex 6: Team Composition

Name	Title	Unit
Animesh Shrivastava	Sr Agriculture Economist Task Team Leader	SASDA
Ousmane Seck	Sr Rural Development Specialist	SASDA
Paul Singh Sidhu	Sr Agriculture Specialist	SASDA
Parthapriya Ghosh	Social Development Specialist	SASDS
Suraiya Zannath	Sr Financial Mgmt Specialist	SARFM
Yuka Makino	Sr Natural Resources Mgmt Specialist	SASDI
Jose Ramon R. Pascual	Legal Counsel	LEGES
Chau-Ching Shen	Sr Finance Officer	CTRLC
Nina Masako Eejima	Sr Counsel, International Waterways	LEGEN
Krishna Pidatala	Sr Operations Officer	TWICT
Mohammad Mahbubur Rahman	Financial Mgmt Specialist	SARFM
Marghoob Bin Hussein	Sr Procurement Specialist	SARPS
Toufiq Ahmed	Procurement Specialist	SARPS
Jacqueline Julian	Operations Analyst, Cost-tab	SASDA
Sugata Talukder	Operations Analyst	SASDA
Naila Ahmed	Consultant, Rural Development	SASDA
Nicole Andrea Maywah	Extended Term Consultant	SASDI
Mohinder S. Mudahar	Consultant, Advisor	SASDA
Pramod Agrawal	Consultant, Seed Specialist	SASDA
S. Selvarajan	Consultant, M&E Specialist	FAO
Mohammand Maniruzzaman	Consultant	
G.M. Akram Hossain	Consultant, Water Management	SASDA
Bill Collis	Consultant, Fisheries Specialist	World Fish
Md. Aminul Islam Khandaker	Consultant	SASDA
Noor Mohammad Sheikh	Consultant	
Benjamin O'Brien	Agriculture Extension Specialist	FAO
Mohammad S Alam	Program Assistant	SASDA
Venkatakrishnan Ramachandran	Program Assistant	SASDA
Lilac Thomas	Program Assistant	SASDA

BANGLADESH: Integrated Agricultural Productivity Project (IAPP)

Annex 7: Community Level Implementation

1. Involvement of the beneficiary community in project planning and implementation is the heart of project design, and the key to reaching an estimated 290,000 farmers during the lifetime of the project. This annex describes the project's implementation approach in this regard, the main design principles, the community level groups that will be formed, and the phasing of project activities.

I. Implementation Approach

2. The project will adopt a group-based approach for the implementation of agriculture development interventions. The project will be anchored at the Union and village levels by farmer groups supported by a Community Facilitator (CF). The premise behind organizing farmers is to provide them with the ability to achieve scale and aggregate in terms of access to services or farm inputs and markets. It also allows the project to benefit more farmers, enhance equity, ownership, accountability and sustainability of interventions.

3. Rather than forming new groups the project will first identify existing groups or programs that have already built social-capital amongst producer groups such as under the SIPP and NATP projects. If no such group exists or an existing group does not match the eligibility criteria (i.e. be inclusive, transparent, have adequate female representation, have participatory decision making processes in place, etc.) then IAPP will form a new group for the purpose of this project

4. A cadre of para-professionals such as community book keepers or resource persons will be identified from the community and developed by the CF to provide ongoing support services and be accountable and, over time, be paid by the farmers for their services. For example for livestock interventions a vaccinator will be identified, for taking care of the routine vaccination program in his/her group as well as provide these services to the wider community (for a fee). A similar resource person may be identified for routine maintenance of machinery or for water management.

II. Key Guiding Principles

5. The project embraces the following key principles:

- (i) *Simple design.* Given the Government and research institutes limited experience in implementing agriculture projects that have a heavy emphasis on adoption by farmers, IAPP will adopt a “phased approach”, starting with a realistic number of interventions in the eight selected districts, and gradually scaling up to cover approximately two-thirds of the unions in the eight project districts, while continuously incorporating learning into the project.

12. ***Livestock Groups:*** For groups organized around livestock (poultry, goats and dairy), the project approach is to form demonstration groups where inputs will be provided to Lead Farmers (selected by the group) who will be linked to potential adopters that are expected to take up the demonstrated activities in the coming year.

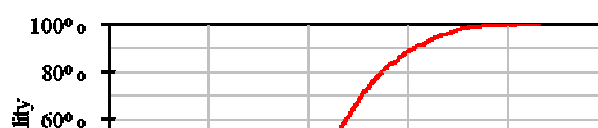
13. For poultry interventions each demonstration group will be provided the requisite training, partial inputs support as well as vaccination and de-worming. For goat production the

good record keeping, accounting and have^[NA14] registration for legal entity (See Annex 2 for

support targeting 60000 livestock farmers in the project area, will result in enhanced milk productivity by 60% and meat (poultry and goat) productivity by 45% due to the project for the benefited HH. Increased productivity is due to better feeding, reduced mortality and breed improvement in the project benefited livestock HHs. Due to large scale adoption of the demonstrated technologies, productivity increase is modestly projected with 80% adopters. At least 48,000 farmers exposed to improved management practices will continue to adopt it and realize the increased productivity through the project life. On an average, livestock beneficiary farmers in the project area are projected to gain USD 105 per farm.

7. *Water Management:* The project will improve irrigation coverage and irrigation efficiency to increase crop productivity and farm income for 50,000 farmers covering 25,000 ha land are in the project districts. Major interventions are: (i) improving irrigation efficiency through buried pipe network connections to LLPs and DTWs and maintain them through WUGs and (ii) rainwater harvesting and tidal sweet water management to promote conjunctive water

13. Sensitivity analysis underlined the significant impact of escalation in project costs by 20%, adoption levels falling by 20%, and project benefits delayed by two years due to increased time lag since the exposure of technology to the adopters. In all the cases ERR respectively came down to 17.8%, 17.1% and 15.1% (T-3). The NPVs also came down by 30 to 67% from the base level. Therefore, risk analysis considered up to 20% escalation in costs, up to 20% fall in adoption levels and up to two year delays in the realization of technology benefits and evaluated their joint impact on ERR. Simulated ERRs, based on multiple runs, ranged from 10.8 to 18.6% with a coefficient of variation of 8.7%. Expected ERR, estimated by the risk model at 14.5% is considered reasonably stable, since the probability of ERR exceeding 13% level is 88% as predicted by the risk model (T-4 and Fig.1).



Income, Employment and Poverty Reduction Impacts

14. Annual incremental farm financial income for the project beneficiaries will vary from USD 105 for livestock farms to USD 165 for crops and fish farms. Irrigated farmers will realize USD 208 as incremental farm financial income. Major projected farming systems, based on available evidences, are paddy based (21%), livestock based (5%), fish based (18%) and the rest are mixed farming systems (56%) with a combination of crops, livestock and/or fisheries. Weighted by these shares, average annual financial income gains for the project beneficiary HH at full development in PY-5 is estimated at USD 210 by end-project. Potentially, at full project development in PY-10, incremental farm income due to project will be able to lift at least 20% of the project benefited HHs above upper poverty lineⁱⁱ of USD 190 at 2011 prices defined for the project districts. Annually 7.1 million man days of on-farm employment equivalent to 23,500 additional farm jobs will be created by the adoption of demonstrated agricultural technologies by the project HHs. This will provide at least 80 man days of employment for each HH in the agricultural-labor category, which accounts for 24% of the project HHs. More importantly, such new farm employments will be sustained over the years.

Equity Impacts

15. The projected beneficiary profile covering women (20%), landless households (HHs) (7%), agricultural labor HHs (24%) and small farm holders (81%) in the project area will

