Development of Jute Seed Entrepreneurs through Regional Cooperation

Submitted to

Common Fund for Commodities (CFC)
The Netherlands

Submitted by

International Jute Study Group (IJSG)
Dhaka, Bangladesh

14 October 2011
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acronyms &amp; Abbreviations</td>
<td>iii</td>
</tr>
<tr>
<td>Project Location</td>
<td>iv</td>
</tr>
<tr>
<td>Preface</td>
<td>v</td>
</tr>
<tr>
<td>Logical Framework</td>
<td>vi</td>
</tr>
<tr>
<td>1. Project Summary</td>
<td>1</td>
</tr>
<tr>
<td>2. Project Background</td>
<td>7</td>
</tr>
<tr>
<td>2.1 Commodity Strategy/Overview</td>
<td>13</td>
</tr>
<tr>
<td>2.2 Challenges and Opportunities</td>
<td>14</td>
</tr>
<tr>
<td>2.3 Opportunities for the Farmers</td>
<td>14</td>
</tr>
<tr>
<td>2.4 Significance of the Project</td>
<td>15</td>
</tr>
<tr>
<td>3. Project Partners &amp; their Responsibilities</td>
<td>16</td>
</tr>
<tr>
<td>3.1 Supervisory Body</td>
<td>16</td>
</tr>
<tr>
<td>3.2 Project Executing Agency</td>
<td>17</td>
</tr>
<tr>
<td>3.3 Nodal Agencies of the participating countries</td>
<td>19</td>
</tr>
<tr>
<td>a) Nodal/Lead Agency in Bangladesh</td>
<td>17</td>
</tr>
<tr>
<td>b) Nodal/Lead Agency in India</td>
<td>17</td>
</tr>
<tr>
<td>c) Nodal/Lead Agency in Nepal</td>
<td>17</td>
</tr>
<tr>
<td>3.4 Project Implementing / Facilitating Agencies</td>
<td>22</td>
</tr>
<tr>
<td>a) Seed Certification Agency</td>
<td>21</td>
</tr>
<tr>
<td>4. Objectives &amp; Rationale</td>
<td>24</td>
</tr>
<tr>
<td>4.1 Rationale</td>
<td>24</td>
</tr>
<tr>
<td>4.2 Broad Objective</td>
<td>25</td>
</tr>
<tr>
<td>4.3 Immediate Objective</td>
<td>25</td>
</tr>
<tr>
<td>4.4 Methodologies</td>
<td>25</td>
</tr>
<tr>
<td>4.5 Economic Evaluation of HYV Jute Seed Cultivation</td>
<td>26</td>
</tr>
<tr>
<td>4.6 Deliverables</td>
<td>26</td>
</tr>
<tr>
<td>4.7 Impact</td>
<td>27</td>
</tr>
<tr>
<td>5. Existing system and other ongoing project</td>
<td>28</td>
</tr>
<tr>
<td>5.1 Scope for Present Study /Work</td>
<td>28</td>
</tr>
<tr>
<td>6. Project Components</td>
<td>30</td>
</tr>
<tr>
<td>6.1 A flowchart of the major project Activities</td>
<td>31</td>
</tr>
<tr>
<td>6.2 Brief Description of the Project Components</td>
<td>32</td>
</tr>
<tr>
<td>7. Project Cost and Financing</td>
<td>37</td>
</tr>
<tr>
<td>8. Expected outputs/results</td>
<td>38</td>
</tr>
<tr>
<td>9. Benefits &amp; Beneficiaries</td>
<td>38</td>
</tr>
<tr>
<td>9.1 Direct beneficiaries</td>
<td>38</td>
</tr>
<tr>
<td>9.2 Indirect beneficiaries</td>
<td>39</td>
</tr>
<tr>
<td>10. Environmental Aspects</td>
<td>39</td>
</tr>
<tr>
<td>11. Intellectual Property Rights</td>
<td>40</td>
</tr>
<tr>
<td>12. Work Plan</td>
<td>41</td>
</tr>
<tr>
<td>13. Monitoring, Supervision &amp; Evaluation</td>
<td>42</td>
</tr>
<tr>
<td>14. Risk Assessment</td>
<td>45</td>
</tr>
<tr>
<td>15. List of Annexes</td>
<td>46</td>
</tr>
</tbody>
</table>

Annex I: Project Implementation Schedule
Annex II: Jute Seed Production and Distribution System in Bangladesh
Annex III: Jute Seed Production and Distribution System in India
Annex IV: Jute Seed Production and Distribution System in Nepal
Annex V: Cost-Benefit Analysis of Adopting Newly Released HYV Jute Seed
Annex VI: Project Cost Table
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AINP</td>
<td>All India Network Project</td>
</tr>
<tr>
<td>BADC</td>
<td>Bangladesh Agricultural Development Council</td>
</tr>
<tr>
<td>BDT</td>
<td>Bangladesh Taka</td>
</tr>
<tr>
<td>BJMC</td>
<td>Bangladesh Jute Mills Corporation</td>
</tr>
<tr>
<td>BJRI</td>
<td>Bangladesh Jute Research Institute</td>
</tr>
<tr>
<td>CFC</td>
<td>Common Fund for Commodities</td>
</tr>
<tr>
<td>COP</td>
<td>Committee on Projects</td>
</tr>
<tr>
<td>CJRIAF</td>
<td>Central Research Institute for Jute and Allied Fibre</td>
</tr>
<tr>
<td>CSRSJAF</td>
<td>Central Seed Research Station for Jute &amp; Allied Fibers</td>
</tr>
<tr>
<td>DADO</td>
<td>District Agricultural Development Office</td>
</tr>
<tr>
<td>DAE</td>
<td>Department of Agricultural Extension</td>
</tr>
<tr>
<td>DOJ</td>
<td>Department of Jute</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross National Product</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse Gas</td>
</tr>
<tr>
<td>GOB</td>
<td>Government of Bangladesh</td>
</tr>
<tr>
<td>GOI</td>
<td>Government of India</td>
</tr>
<tr>
<td>ha</td>
<td>Hectare</td>
</tr>
<tr>
<td>HYV</td>
<td>High Yielding Variety</td>
</tr>
<tr>
<td>ICAR</td>
<td>Indian Council of Agriculture Research</td>
</tr>
<tr>
<td>ICB</td>
<td>International Commodity Body</td>
</tr>
<tr>
<td>IJIRA</td>
<td>Indian Jute Industries' Research Association</td>
</tr>
<tr>
<td>IJSG</td>
<td>International Jute Study Group</td>
</tr>
<tr>
<td>IJO</td>
<td>International Jute Organisation</td>
</tr>
<tr>
<td>INR</td>
<td>Indian Rupee</td>
</tr>
<tr>
<td>ITC</td>
<td>International Trade Centre</td>
</tr>
<tr>
<td>J&amp;AF</td>
<td>Jute and Allied Fibre</td>
</tr>
<tr>
<td>JRP</td>
<td>Jute Research Program</td>
</tr>
<tr>
<td>m</td>
<td>Million</td>
</tr>
<tr>
<td>MOA</td>
<td>Ministry of Agriculture</td>
</tr>
<tr>
<td>MOAC</td>
<td>Ministry of Agriculture and Cooperatives</td>
</tr>
<tr>
<td>MOTF</td>
<td>Ministry of Textiles and Jute</td>
</tr>
<tr>
<td>MT</td>
<td>Metric Tonne</td>
</tr>
<tr>
<td>NARC</td>
<td>Nepal Agricultural Research Council</td>
</tr>
<tr>
<td>NICDP</td>
<td>National Industrial Crop Development Program</td>
</tr>
<tr>
<td>NPR</td>
<td>Nepalese Rupee</td>
</tr>
<tr>
<td>PCR</td>
<td>Project Completion Report</td>
</tr>
<tr>
<td>PEA</td>
<td>Project Executing Agency</td>
</tr>
<tr>
<td>PVS</td>
<td>Participatory Variety Selection</td>
</tr>
<tr>
<td>PY</td>
<td>Project Year</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>RSTL</td>
<td>Regional Seed Testing Laboratory</td>
</tr>
<tr>
<td>TLS</td>
<td>Truthfully Labelled Seed</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
</tr>
<tr>
<td>WB</td>
<td>West Bengal</td>
</tr>
</tbody>
</table>
Project Location

Bangladesh, India and Nepal are the locations of the project “Enhanced Jute Production through an Integrated and Self sustaining Model of High Yielding Variety (HYV) Jute Seed Production, Distribution and Marketing through Jute Farmers”. Other potential beneficiaries are the jute growing countries like Myanmar, China, Vietnam, Thailand etc.

The colours, boundaries, denominations and classifications in this map do not imply, on the part of the International Jute Study Group or its Members, any judgment on the legal status of any territory, or any endorsement or acceptance of any boundary. The projections used for maps may distort shape, distance and direction.
Preface

Jute sector is experiencing a comeback in major jute growing areas. Increasing awareness on environment protection, pave the way of revival of the jute sector. Production, price and trade of jute increased significantly in last few years. This positive trend of jute sector indicates long term sustainable growth of the sector. In addition to its traditional use, jute is now getting popularity for its diversified uses that include jute yarn, jute geotextile, jute composite, jute based pulp & paper, jute shopping bag and other diversified products. To meet the increasing demand for jute, it is necessary to increase production either by expanding jute areas or by increasing productivity.

Research institutes of major jute growing countries like Bangladesh and India have the races of High Yielding Varieties (HYV) of jute seed which are yet to get the popularity among the farmers. Appropriate farming practice with quality HYV seed can contribute to the increase in production of more than 25%. But current system of jute seed production, distribution, marketing and its usage failed to avail the opportunity of increased production.

Seed production of jute is facing competition from other crops like paddy and winter vegetable that need to be cultivated at the same period. As a result, opportunity cost of jute seed production is too high for the farmers to produce their own seed. Among the participating countries of this project Bangladesh, India and Nepal, only India has comparative advantage. Jute seed production of India is confined in Guntur district of Andhra Pradesh due to its unique characteristics of the region. Rain water, black soil, and inability of producing other crops provide a competitive edge to Guntur seed production system. Private sector seed companies, mostly of the non-jute growing areas are leading in India with 80% contribution to jute seed industry.

This type of private entrepreneurs is not available in Bangladesh and Nepal. Market size and profit margin were not lucrative for the entrepreneurs to produce jute seed commercially. But increasing acreage of jute cultivation and recent boom in export are attracting the private seed producer to rethink about jute seed market. It is high time to come up with a project that will replicate Guntur model of seed production in different areas of participating countries and develop jute seed entrepreneurs in order to make a systemic change in the jute seed market. This positive change will ensure production, promotion and usage of most appropriate HYV of jute seed in India, Bangladesh and Nepal.

With an innovative approach, the project attempts to evolve a regional development model of intervention between the participating countries instead of country specific approach and aims to achieve positive results out of existing dependency of Bangladesh, Nepal and other jute producing countries on supplies of jute seeds from India. The project also intends to make the best use of the outcome of CFC sponsored project International R&D Seminar on Jute, Kenaf & Allied fibers as a critical input for achieving coordination between research institutions of the participating countries in the proposed project.

The project will be a gateway for the future development of jute sector in other countries. Ghana, for its coffee industry, wants to produce jute. Myanmar also has shown their interest to increase production and usage of HYV jute seed. These countries will be benefited through the experience of this project.
Logical Framework

<table>
<thead>
<tr>
<th>Project Goal:</th>
<th>Measures of Goal Achievements:</th>
<th>Means of Verification:</th>
<th>Important Assumptions:</th>
</tr>
</thead>
</table>
| To establish an efficient system for commercial production, marketing and usage of HYV of jute seed in India, Bangladesh and Nepal. | Increased amount of certified seed of HYV jute produced and its usage at farm level. | • Replacement of obsolete seed varieties in favour of new released jute varieties of high yield potential.  
• More entrepreneurs are coming up for cultivation of jute seed crop and its commercial distribution.  
• Increased cultivation of jute of new HYVs.  
• Applications of the improved technologies of jute seed production, processing, preservation and distribution by the farmers.  
• Increased productivity of jute. | • Farmers are convinced of the benefits of cultivating HYV jute.  
• More growers become attracted to the production of HYV jute seed and its commercial distribution.  
• Improvement of National productivity average achieved by the end of the project. |

<table>
<thead>
<tr>
<th>Project Purpose:</th>
<th>Conditions that will indicate purpose has been achieved. End of Project Situation:</th>
<th>Affecting purpose/goal Link:</th>
</tr>
</thead>
</table>
| Establish regional cooperation to identify most appropriate race of HYV seed for each region.  
Produce adequate amount of breeder seed, foundation seeds, certified seeds/ TLS and link research institutes with the entrepreneurs and farmers directly.  
Develop an effective self sustaining seed production and marketing system / model through the project.  
Motivate entrepreneurs to produce jute seed commercially to meet the demand of HYV jute seed.  
Arrange propagation, demonstration and dissemination of information about production of HYV jute seeds for motivation and awareness of farmers and other stakeholders.  
Increase production of jute seed and jute fibre in the traditional and non-traditional areas. | 1. Suitable jute varieties with desired yield, yield-contributing and fibre qualities identified.  
2. Novel processing protocol proves to facilitate increased output, reduction of chemical/nutrient water and energy requirements as well as superior fibre quality.  
3. Varieties and processes found suitable for jute seed cultivation in jute growing countries.  
4. Performance evaluation of HYV jute seeds demonstrates technical and economic viability.  
5. Results disseminated by Operation Manual, Protocols, and dissemination workshops and made available to the participating countries. | 1. Jute fibre yield increased and stabilized.  
2. Cultivation time and production costs of seed crop decreased.  
3. Jute fibre quality of produced is of better or at least equal quality level than with existing jute variety.  
4. Jute fibres produced by newly developed varieties and processes provide technical or cost advantages for industrial users.  
5. Dissemination activities and materials comprehensive. |
Logical Framework

<table>
<thead>
<tr>
<th>Narrative Summary</th>
<th>Objectively Verifiable Indicators</th>
<th>Means of Verification</th>
<th>Important Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Goal:</strong></td>
<td>Measures of Goal Achievements:</td>
<td>• Replacement of obsolete seed varieties in favour of new released jute varieties of high yield potential.</td>
<td>Concerning long-term value of project:</td>
</tr>
<tr>
<td>To establish an efficient system for commercial production, marketing and usage of HYV of jute seed in India, Bangladesh and Nepal.</td>
<td>Increased amount of certified seed of HYV jute produced and its usage at farm level.</td>
<td>• More entrepreneurs are coming up for cultivation of jute seed crop and its commercial distribution.</td>
<td>• Farmers are convinced of the benefits of cultivating HYV jute.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increased cultivation of jute of new HYVs.</td>
<td>• More growers become attracted to the production of HYV jute seed and its commercial distribution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Applications of the improved technologies of jute seed production, processing, preservation and distribution by the farmers.</td>
<td>• Improvement of National productivity average achieved by the end of the project.</td>
</tr>
<tr>
<td>Project Purpose:</td>
<td>Conditions that will indicate purpose has been achieved, End of Project Situation:</td>
<td>1. Reports of R&amp;D/ concerned institutions</td>
<td>Affecting purpose/goal Link:</td>
</tr>
<tr>
<td>• Establish regional cooperation to identify most appropriate race of HYV seed for each region.</td>
<td>1. Suitable jute varieties with desired yield, yield-contributing and fibre qualities identified.</td>
<td>1. Jute fibre yield increased and stabilized.</td>
<td></td>
</tr>
<tr>
<td>• Produce adequate amount of breeder seed, foundation seeds, certified seeds/ TLS and link research institutes with the entrepreneurs and farmers directly.</td>
<td>2. Novel processing protocol proves to facilitate increased output, reduction of chemical/ nutrient water and energy requirements as well as superior fibre quality.</td>
<td>2. Cultivation time and production costs of seed crop decreased.</td>
<td></td>
</tr>
<tr>
<td>• Develop an effective self sustaining seed production and marketing system / model through the project.</td>
<td>3. Varieties and processes found suitable for jute seed cultivation in jute growing countries.</td>
<td>3. Jute fibre quality of produced is of better or at least equal quality level than with existing jute variety.</td>
<td></td>
</tr>
<tr>
<td>• Motivate entrepreneurs to produce jute seed commercially to meet the demand of HYV jute seed.</td>
<td>4. Performance evaluation of HYV jute seeds demonstrates technical and economic viability.</td>
<td>4. Jute fibres produced by newly developed varieties and processes provide technical or cost advantages for industrial users.</td>
<td></td>
</tr>
<tr>
<td>• Arrange propagation, demonstration and dissemination of information about production of HYV jute seeds for motivation and awareness of farmers and other stakeholders.</td>
<td>5. Results disseminated by Operation Manual, Protocols, and dissemination workshops and made available to the participating countries.</td>
<td>5. Dissemination activities and materials comprehensive.</td>
<td></td>
</tr>
<tr>
<td>• Increase production of jute seed and jute fibre in the traditional and non-traditional areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

vii
1. Project Summary

The International Jute Study Group declares that the project proposal is being supported by its members, and hereby submits the following proposal with its recommendations for financing by the Common Fund for Commodities (CFC). The Governments of Bangladesh, India and Nepal are also committed to support this very vital project for the jute agricultural sector. The proposal was approved by the Committee on Projects (COP) of IJSG at its Ninth meeting held on 27 – 28 August 2008 and re-approved in the modified form in Twelfth COP meeting dated 27 September 2011.

1.1 Project Title : Development of Jute Seed Entrepreneurs through Regional Cooperation

1.2 Duration : 5 years

1.3 Location : Bangladesh, India and Nepal

1.4 Nature of the Project :

The project will approach an alternative way to increase production and usage of High Yielding Variety (HYV) jute seed. The existing jute seed production system is not commercially viable for the farmers in most of traditional areas of jute due to high opportunity cost. Jute seed production needs 7-9 months to grow. Farmer can produce paddy and other winter crop during this time. So farmers are now reluctant to grow jute seed by their own and want to buy readily from the market. Instead of insisting farmers to produce seed, this project will try to develop entrepreneurship that can efficiently produce in suitable place and supply HYV seed of jute to farmers in time. The project will replicate the success of seed production in Guntur District of Andhra Pradesh of India. This district has the advantage to produce jute seed in a cost-effective way due the climatic condition, inability to produce other crops and availability of lands. The project will work directly with the private sector instead of the existing production and distribution where the public sector is playing the key role. In addition new improved technologies relating to HYV jute seed production e.g. enhancement of jute seed yield and quality by manipulation of agronomic factors and water, nutrient management will be targeted. In this process farmers, private sector seed producer, certifying agencies and scientists will be actively involved not only to ensure the availability of quality seed to the farmers at affordable price but also ensure inbuilt viability to the seed producing farmers and the growers.

1.5 Brief Description:

The scarcity or shortage of quality jute seed especially improved high yielding variety (HYV) jute seeds and absence of a modern jute seed production technology and system at the farmers’ level has been identified currently as a major impediment to the jute farmers of the major jute producing countries like India, Bangladesh and Nepal. Non-availability of required amount of certified/ truthfully labelled jute seeds, having high yield potential, to the farmers at appropriate time and the affordable price are the main constraint in jute increased cultivation, which is common to all these countries.
Aim of the project:
The project intends to develop jute seed producing entrepreneurs to increase availability of the HYV Seeds. The project will work in collaboration with private sector, public sector and research organizations to find out the suitable variety of seed and to identify suitable locations to produce HYV seed. After that the project will also work for the production and promotion of HYV where private sector will play the vital role by taking jute seed production as commercially viable business. Successful implementation of the project will increase the production of jute to around USD 48.68 Million in five years.

Immediate objective:
The immediate objective is to demonstrate to the entrepreneurs or lead farmers the modern/improved production, processing & preservation techniques of HYV jute seeds; and accelerate its adoption at farmers’ level. This project will help to strengthen the jute seed production base through enhanced private participation and a suitable seed production and distribution system/model. The project also intends to enhance the economic value of jute and socio-economic condition of a large number of jute growers in the three countries, and open up alternate employment opportunity in the rural areas based on activities related to jute seed production, processing, preservation, and commercial distribution.

Project components:
The project has Five components consisting of a number of specific activities, objectives and outputs and has been briefly outlined below:

Component 1: Selection and optimisation of HYV jute genotypes through agronomic manipulation and nutrient & water management practices

About 4-5 HYV jute genotypes, 2 of each species capsularis and olitorius having the highest yield potential in each of the participating countries will be selected from performance evaluation and optimised through agronomic manipulation and appropriate nutrient & water management practices, and study the effect of growth regulators on the quality and yield of seed. The manipulation will be done on cross-country basis as well to explore all possibilities of getting best yield from both indigenous and imported varieties. This will also include preparation of a soil & seed mapping. Moreover, suitable place of jute seed production will be identified where jute seed production has commercial viability.

Component 2: Selection and Development of Entrepreneurs and lead farmers from the respective countries’ traditional/non-traditional jute growing areas to grow jute seed

From each of the selected administrative units under the traditional jute growing areas and non-traditional areas of the three countries required numbers of progressive entrepreneurs and lead farmers will be selected for the purpose of carrying out the activities of jute seed production as envisaged in the project. Determination of number of such entrepreneurs will depended on the targeted increase of the output divided by minimum viable output from each entrepreneur so as to make activity a viable
proposition on long term basis. Project will build up the capacity of the entrepreneurs and their farmers for the efficient production of jute seeds.

**Component 3: Multiplication/production of breeder seed, foundation seed and certified/TL seeds of the HYV jute.**

The activities for production of breeders' seeds, foundation seeds, certified / TL seeds of HYVs of jute will be conducted in the research fields of the concerned R&D organisations, the respective agencies of the countries, in the fields of the project entrepreneurs and lead farmers. Selected Entrepreneurs/lead farmers will also be trained in the production and marketing of breeder seeds. Seed certification agencies of the countries will be involved for certification of the produced seeds of the project. There will be provision to incorporate existing other seed producers to grow jute seed through contract farming method or custom seed production method.

**Component 4: Increasing demand for HYV seed by creating awareness on usage on HYV seed**

Seed produced by the project entrepreneurs will be demonstrated at field level so that other farmers can be familiar with the usage of HYV seed. The demonstration will be done through the seed project entrepreneurs/lead farmers for only two seasons with the support of the participating R&D institutes of the project. Later on it will be the responsibility of the entrepreneurs to uphold the momentum that they will achieve by the project activities. However, the R&D institutes will keep in touch with the entrepreneurs for follow up.

**Component 5: Dissemination & documentation**

The results obtained under different components esp. on the selected HYV jute and the recommended seed production, processing, preservation techniques etc. would be compiled for production of user friendly manuals and distribution/dissemination among the stakeholders of the relevant countries. National and also field level (District and Blocks level) workshops shall be organised for the jute growers, seed producers, traders/distributors, national certifying agencies etc. along with all the project partners.

**Methodology:**

The project will be executed / implemented by the Nodal Agencies of each country under the respective research stations/centres.

To achieve the above objectives, the following activities/ strategies will be adopted under this project:

i. Research organizations will conduct the research on cross country basis to find out the most appropriate varieties of HYV for each jute producing country under the project i.e. India, Nepal and Bangladesh.

ii. Strategy and all required inputs will be provided to increase productivity and to decrease duration of seed production in identified areas.

iii. Suitable areas for jute seed production will be selected according to the recommendations and suggestions of the research organizations. For example, CP
Bangladesh got success in producing maize in Char (riverian islands) and British American Tobacco got success in tobacco production in Hill tracts of Bangladesh.

iv. Potential Entrepreneurs and lead farmers will be selected to produce jute seed in commercial basis and their numbers will take account of the viability factor in the country and the area.

v. Seed produced by the entrepreneurs will be demonstrated at field level to increase awareness and usage of appropriate variety of HYV with appropriate production technique and required hand holding shall be ensured.

vi. For increasing awareness workshops, field days and other promotional activities will be done at field level where private sector will play the key role.

vii. For expending jute farming in potential or non-traditional areas, promotional activities will be conducted in collaboration with research organizations and private sector.

viii. The market linkages for the produced seed will be closely tied up in a self sustaining mutually beneficial supply chain with conscious attempt to integrate jute industry in sponsoring and supporting backward linkage development in under a contractual arrangement on the patterns of tobacco industry in Bangladesh and the sugarcane sector in India.

**Expected outcome:**

**Agriculture/cultivation level:**
Most Optimum varieties of HYV jute seeds, production and processing methods along with appropriate management of soil and water; use of existing and additional agricultural land for optimum period; and supply of adequate amount of good quality jute seed at appropriate time will be ensured through the private sector entrepreneurs or lead farmers in collaboration with the research organizations in a sustainable manner.

**Economic level:**
Inclusion of private sector seed producer in the jute seed market will ensure long term sustainability of efficient jute seed production and the marketing. Quality controlled operation methods for production of certified seeds will facilitate adoption of the newly released HYV seeds by the farmers; increase the overall production and availability of HYV seeds; increase transparency in the entire value chain; provide growers with better productivity and quality of jute; in turn better economic benefits / return.

**Market level:**
This project would provide growers with a better production and distribution system of good quality jute seeds and reduce the influence of the traders/middleman active in supplying uncertified jute seeds to the farmers. The biggest problem of timely availability of HYV seeds at reasonable price will be ensured.

**Environment & Health level:**
Reduced utilization of chemical fertilizers/inputs and increased production of good quality jute fibre thus helping in the growth of a healthy environment.

The project is based on experience and previous work by the participating countries/institutions and would increase the impact by bringing together complementary expertise and technologies and seed varieties available with each of them. The project aims to achieve optimal level of 'regional cooperation' through
present interdependence of the participating countries. The seed sector’s growth is not possible without this regional approach. Since India is the only major supplier of HYV seeds to all producing countries, key to the success of this project is the involvement of actual entrepreneurs of the participating countries even at the level of inter-country investment in the sector. The project has been met by a strong interest from the jute farmers, R&D institutes and various concerned organisations and the Governments of the participating countries.

Benefits and Beneficiaries:
Farming communities would be the main beneficiaries of the project through adoption of novel jute varieties (HYV) with improved agricultural and process techniques not common, popular and available for the farmers. Additional project benefits will be manifested at the following levels.

Economy of the jute producing countries will get a boost in view of the expected increased employment in agricultural sector; the farmers will be benefited in particular. Rural economy will get a push as a result.

1.6 Total estimated cost of the project : USD 2,222,300
1.7 Financing sought from the Fund : USD 1,272,300
1.8 Mode of financing : Grants
1.9 Counterpart contribution : 950,000 (in kind)
1.10 Project Executing Agency (PEA): Department of Jute (DOJ), Ministry of Textiles & Jute (MOTJ), Govt. of Bangladesh
1.11 Project Supervisory Body : International Jute Study Group (IJSG)
1.12 Lead Agencies in Bangladesh, India & Nepal:
- Bangladesh Jute Research Institute (BJRI), Dhaka
- Central Research Institute for Jute & Allied Fibres (CRIJAF), ICAR, MOA, Govt. of India
- Jute Research Program (JRP), NARC, Nepal
1.13 Project Implementing Agency:

**Bangladesh**
- Bangladesh Agriculture Development Corporation (BADC), MOA
- Department of Agricultural Extension (DAE), MOA
- Seed Certification Agency (SCA), MOA, Bangladesh

**India**
- Central Research Institute for Jute & Allied Fibres (CRIJAF), ICAR, MOA, Govt. of India
Central Seed Research Station for Jute & Allied Fibres (CSRSJAF),
Budbud, Burdwan, WB

Nepal
- National Industrial Crop Development Program (NICDP)
- Regional Seed Testing Laboratory (RSTL)

1.14 Estimated Starting date : Four weeks after placement of fund
2. Project Background

Recent Developments in Jute Sector:

Jute sector is experiencing a comeback in major jute producing countries of the world as reflected in the increasing demands for raw jute during last 3-4 years. Shortage of supply has been causing continuous increase in the raw jute price in major jute producing countries both Bangladesh and India.

Increasing awareness of environment issues and diversified use of jute have contributed to the recent development of jute sector for the last few years. Jute is bio-degradable natural fibre whose traditional use was confined in packaging industry. Today non-traditional or diversified use of Jute as Jute Yarn, Jute Geo Textile, Jute pulp & paper, Jute Composites and other Jute Diversified Products seems to be the main driving force for the future development of raw jute pushing demand and consequently increasing raw jute price.

![Price of Jute at Growers' Level in India and Bangladesh](image_url)

**Figure 1: Price of Jute at Grower level in India and Bangladesh**

Source: FAO and BJMC

The above graph shows how the raw jute price has increased sharply both in India and Bangladesh. These two countries together contribute more than 90% of world jute production. Jute price at growers' level reached around USD 20 per maund (around 40 kg) in 2009-10 which was around 10 USD in 2007-08. Due to increased demand at home, Bangladesh, the largest exporter of Jute in the world, was forced to impose a temporary ban on export of raw jute to feed her domestic jute mills in February 2010 which was lifted after one year in March 2011. The positive fallout of increased raw jute price has been in the form of better returns to
this growth is possible in the form of increased prices of jute goods thereby making the retail price prohibitive in comparison to synthetic alternatives. Both the scenarios establish the need to increase the raw jute production in tune with the rising demand to keep the price of raw jute and jute goods at reasonable and affordable levels for all the stakeholders. Following graph reveals that acreage of jute production increased both in Bangladesh and in India.

**Figure 2: Area under jute production in India and Bangladesh**

This sharp increment in price of jute and acreage under jute cultivation reflects the increased demand for jute products worldwide. Export of jute also experienced an average 10% growth in Bangladesh. But in the Fiscal Year 2010-2011, the country experienced outstanding 41% growth and crossed billion dollar benchmark for the first time in the history of the country. Within the first two month growth of jute export was 71% according to the Export Promotion Bureau of Bangladesh. This growth of export shows increasing demand of jute in the international market. Bangladesh Govt. has also taken steps to establish jute based paper mills to ensure that the farmer will get fair price for their produce. According to a study of Centre for Policy Dialogue (CPD, leading research institute of Bangladesh), domestic consumption of jute may increase by 500% due to the effective implementation of **Mandatory Packaging Act 2010** in Bangladesh alone. The domestic market of Bangladesh is projected to require 539,200 MT more Jute in coming five years. It is estimated that demand for jute may reach 650,000 MT outside the major jute growing areas whereas demand for jute will also likely to be 3,822,000 MT in jute growing areas in coming five years. Even if these projections are partially correct,
there cannot be an escape from the fact that a quantum jump in the raw jute production is essential.

How this demand can be met:

The increased demand for raw jute can be met by either increasing the area under cultivation and/or increasing productivity. Increasing production area is obviously a difficult proposition because jute will have to compete with food crops. Later is certainly an advisable objective. The average productivity in participating countries their usage of HYV seed is given in Table 1:

| Table 1: Productivity of jute in participating countries |
|---------------------------------------------|--------------|----------------------------------|
| Country          | Average Production per Hectare (in MT) | Average Usage of Certified HYV (% of total Farmer) | Annual Production (in ,000 MT) |
| Nepal            | 1.43                                     | 10%                                           | 17                              |
| Bangladesh       | 1.93                                     | 25%                                           | 1080                            |
| India            | 2.1                                      | 30%                                           | 1620                            |

Despite India having the largest usage of HYV seed (mainly JRO-524 and JRO-878), it has not achieved expected national average production. CRIJAF developed some new varieties like JRO 128, JRO 8432, S 19, and JBO 2003 which has high potential of producing 3-4 MT/Hectare. But the adoption rate is slow due the timely production and delivery of seeds at affordable price.

Strengthening backward linkage of jute sector is struggling in one area that is availability and usage of HYV seed. Though Bangladesh and India, the two major producers of Jute in the world, have developed number of High Yielding Varieties of jute seed, these have not yet reached the doorstep of all jute farmers. It is estimated that the introduction of HYV seed can increase the production of Jute by 25%. In Bangladesh, around 75 percent farmers are using uncertified or traditional seed. If all farmer start the use of HYV seed with proper farming techniques this could add approximately 100,000 bales (1 bale=180 kg) more jute to its overall production of 5,089,000 bale of jute in 2009. In that case it would not be necessary for Bangladesh to impose ban on exporting raw jute. At farmers level, per farmer income will be increased by Tk. 17,500 or INR 1,030 with effective adoption of HYV seeds.

Seed production scenario in India and Bangladesh:

Based on the study of viability of jute seed production from Guntur, Andhra Pradesh, India it was found that it has comparative advantage of jute seed production compared to other places of India and Bangladesh is depicted in following table:

| Table 2: Jute Seed Production Comparison in India and Bangladesh |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Name of the Area | Total Input cost/Ha | Total Production/Ha | Value of the Product | Return of Investment Ratio |
| Mankiganj, Bangladesh | BDT 29,010 | 800 kg | BDT 54,000 | 1.86 |
| Guntur, AP, India | Rs 75,000 | 2500 kg | Rs 175,000 | 2.33 |
The inbuilt profitability of Guntur Model, however, presumes existence of assured market, timely supply of foundation seed, minimum support price assured by the trader with built in viability for farmers vis-à-vis the other crop options in the areas for him, facilitating seed stock, insecticides and other inputs through easy flow of credit as and when required and other necessary knowledge inputs. These attributes should be an integral part of the model for replication which will be ensured under the proposed project. In order to make the system inherently viable, this project will ensure that only an optimal number of seed producing entrepreneurs shall be selected so that they can cater to present and projected demand and the system competitiveness is not jeopardised by large number of such players in the market.

**Why farmers are not using HYV seeds:**

The obvious question coming to mind at this stage is why the farmers are not adopting HYV seed if it is really profitable to them. An in-depth analysis of this issue has indicated following reasons for its non-adoption at larger scale:

a) Non availability of HYV seeds in adequate quantities in time because of the weakness of the existing production and distribution mechanism.

b) Lack of awareness about the net benefits of HYV seed in spite of a little extra cost of HYV seeds. This problem originates from the lack of demonstration at farmers’ level.

c) Farmers are used to with some common varieties of seed (JRO 524 and JRO 878). Therefore they are not willing to take the risk of trying new variety with high potential productivity and better quality.

The reason requires increasing the availability which is a long term process and needs a radical change from the existing approach which has failed to deliver. The present production, shortfall and the future dependent model of HYV field production system in these countries is as follows:

**Table 3: Jute Seed Requirements in Participating Countries:**

<table>
<thead>
<tr>
<th>Country</th>
<th>Requirement</th>
<th>Indigenous Production</th>
<th>How shortfall is met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>4,000-4,500 MT</td>
<td>1,000-1,200 MT</td>
<td>Imported (50%) and unofficially collected (25%) from India mainly Truthfully levelled (TL) seed.</td>
</tr>
<tr>
<td>India</td>
<td>5,000-5,500 MT</td>
<td>8,500-9,000 MT</td>
<td>Export to other countries TL seed produced in private sector</td>
</tr>
<tr>
<td>Nepal</td>
<td>60-70 MT</td>
<td>10-20 MT</td>
<td>Imported from India (90%)</td>
</tr>
</tbody>
</table>

The increase of HYV seeds coverage in these countries from existing level of average 25 % to 100 % requires 7,500 MT of additional jute seed. Since regional interdependence of HYV
seeds, is a historical phenomenon and going to continue, there is need to recognise the fact and evolve a solution where this interdependence can be used for maximisation of regional benefits. This issue can be addressed through a dedicated extension and demonstration related intervention in this model.

**Behind the Success of Guntur Jute Seed Production:**

In the existing system about 70% (around 7,000 MT) of HYV seeds is being supplied by the private commercial seed producers' through a contract system of farming while Govt sector is providing only 30% of the total supply (around 3,000 MT). In this system, private sector contribution is dominated by Indian seed suppliers from Andhra Pradesh while the jute growing area is in West Bengal. Close study of the Andhra Pradesh model of seed production reveals following attributes:

a) Seed is produced through contract farmers on the land which is not very fertile therefore not suitable to produce other crops.

b) The seed companies are providing necessary knowledge and expertise of seed production developed by R&D institutions and their extension mechanism is much better than the Government system.

c) The farmers are offered 100% buyback assurance apart from extension of other benefits like facility of easy loan, credit based supply of parent seed and also fertilizer, pesticides, etc.

The above model is based on the commercial production of other crop seeds like paddy, cotton, sugarcane etc. This system is self sustaining and is running without any Govt. Intervention or involvement and has proved its utility and indispensability. Bangladesh has very few such seed producers in the private sector and their areas and scope of operation is very limited while in Nepal it is nonexistent.

In order to increase the adoption of HYV seeds among the farmers to 100% level, as mentioned earlier, there is need to be replicated this model in all three countries. In India, the model needs to be replicated in West Bengal, Bihar, Assam which is major jute producing states. The soil, climate and weather conditions of Andhra Pradesh are available in various pockets of these three States. There is need to follow the approach practiced in Andhra Pradesh (Guntur and other district of Andhra Pradesh of India).

The above background made it clear that we need to adopt a private sector centred self sustaining model of seed production where all the stakeholders like commercial seed producer/ the seed company, and the seed trader are linked in a common value chain with optimal profit sharing environment.

**Why Jute Seed Production is Struggling in Bangladesh, Nepal and partially in India:**

Participating countries' national governments have implemented different programs to increase production and usage of HYV seeds. However, these programs have had following limitations which restricted the success of these programs:
a) Production of jute seed is a lengthy process which takes around 9 months. Eventually opportunity cost is high for these farmers who produce seeds. Farmers get more return by cultivating other crops like paddy, vegetable etc. for this long period.

b) Productivity of the jute seed is also low around 800 kg/hectare as a result return on investment is also low. This return is not lucrative for the farmers.

c) There is lack of technical knowledge among the farmers about producing quality jute seed. Farmer’s production of jute seed vary in terms of production and quality.

d) Usage of newly released HYV seed is not that much popular among the farmers of the region so lack of assured market.

e) Both Bangladesh and India possess a number of varieties of HYV seeds. But it was not explored which seed is the most appropriate for which specific region.

How the Project will contribute in Production, Distribution and Marketing of Jute Seed?

This project envisages in adopting the successful model of jute seed production and replicate by creating few models in participating countries in a long term self sustaining system. Following steps will be taken under this project:

a) The project will work for the identification of 4-5 most suitable seeds for the participating countries which will be selected from existing HYV races developed by the research organizations in the participating countries from field trials in different climatic conditions. The project will also identify suitable location for producing jute seed in different locations of participating countries.

b) The project will work for the development of entrepreneurs who have spare land or who can hire land to produce jute seed on commercial scales. The progressive lead farmers will be identified to produce and market certified or truthfully levelled HYV jute seed. Their risk bearing capacity will also be examined before selection.

c) In each participating country there are entrepreneurs who are producing, importing and selling other seeds to the farmer but not jute seed. These important market players will be given motivation to produce and sell jute seed. As jute farming is expanding both in Bangladesh and India, the seed market of jute is becoming lucrative for the other seed producers.

d) The project will also try to introduce contract farming system. This system may not be formal contract between seed companies/ jute industries and producer rather it will be an informal commitment where seed companies or traders will provide all required inputs along with better knowledge of agriculture practices to the farmers. In south Asia tobacco, sugar, maize, spice and cotton sector have established a linkage between industry and the farmers’. This project will try to replicate the model of these sectors by providing some progressive jute mills to enter into a seed trading business which will go beyond trading and involve farmers with buy back assurance to ensure supply of raw jute at agreed price.

e) To popularize usage of HYV jute, demonstration, field days and workshops will be arranged. In addition, effort will be given to reach farmer using mass media to create
awareness on usage of HYV jute seed. The project will also work to promote jute farming in potential and non-traditional jute growing areas through the HYV jute seed traders who has the business incentive to promote jute. This will help in demonstrating the fact that jute seeds could be profitable in non jute growing areas.

f) The project will work to utilise the synergy that can be made through a regional cooperation among the jute producing countries. The project will conduct a cross country research to find out the suitable variety for each region in collaboration with the research institutions.

g) The project will also initiate and create a platform for investment for Indian jute seed companies in Bangladesh and Nepal through a mutually beneficial arrangement with the involvement of Government machinery and Foreign Direct Investment (FDI) incentives for Bangladesh and Nepal.

2.1 Commodity Strategy/Overview:

A Commodity Strategy was developed for the growth and promotion of the jute sector in line with the goals of the organisation through discussions in the IJSG Council Sessions, held between April 2002 and June 2003 and subsequently updated in recent years. The broad elements of this Commodity Strategy are:

a) Establishment of an appropriate framework for controlled seed production, certification and distribution with specific focus on improvement of fibre quality and yield.

b) Exchange and share results of R&D between various institutions involved in natural fibre related research and set up a suitable network to share such information.

A series of strategic actions are prescribed /targeted in the Road Map for Jute developed in 2005 by IJSG and updated in "jute matters" in 2011, with the support of CFC and ITC, to improve the jute situation such as:

- Replace obsolete seed varieties in favour of new released varieties of high yielding types including varieties capable of producing higher fibre grades, which are in increasingly short supply.
- Encourage the rapid uptake and widespread dissemination of the selected new varieties by giving price premiums or other incentives to encourage more farmers to take up jute seed cultivation.
- Encourage the jute agricultural R&D institutions in Bangladesh and India to play a proactive role in getting new varieties speedily out and into commercial use.
- Strengthen the said R&D institutions to play an important part in training and demonstrating the advantages of new varieties to farmers.
- Take measures to ensure adequate supply of suitable seeds and thus improve the supply chain so that better seeds are developed, multiplied, certified and distributed.
2.2 Challenges and Opportunities

To increase the demand of jute and jute products, the International Jute Study Group (IJSG) has a strategy focused on promotion of productivity, product quality, development of standards and specifications, new product development, identification of viable diversified end-uses, promotion of demand and sustainable production. In this overall strategy, the promotion of existing jute products for diversified uses and the development of new diversified products are the key components.

In line with the activities focused on increasing demand for jute products, it is necessary to increase production of jute. Therefore any effort given to increase production, access and usage of HYV of jute seed will accelerate the production of jute in major jute growing areas. The balance between increasing production and increasing supply will be a major challenge for the future growth of jute sector. However, it is expected that increasing trend of demand for biodegradable product and diversified usage of jute will offset the incremental production.

One crucial question would rise in this point that increase in production does not necessarily mean more income to the farmers. Sometimes it may lead to the classic case of paradox of bumper harvest where farmer experience a sharp decline in price. Diversified use and increased demand for jute are likely to consume incremental production that the project wants to achieve. Bangladesh Govt. has taken a decision to reopen one paper mill and establish three other jute based pulp and paper mill. In addition to that Mandatory packaging law 2010 will also increase domestic use of jute in Bangladesh. As Bangladesh is the largest exporter, domestic increase of demand of jute in Bangladesh is likely to create shortage of jute for international market.

2.3 Opportunities for the Farmers

Jute provides ample opportunities for the jute farmers for its sustenance and growth.

a) Effective implementation of the project will increase the per farmer income by Tk. 17,500 or INR 1,030 in India and Bangladesh. In Nepal the benefit of adopting HYV will be higher. The project has a target to reach around 300,000 farmers through this project.

b) The socio-economic condition of jute producers (farmers) will be improved with the expected expansion of the jute seed production-base after implementation of the project. Employment opportunities in the jute sector, particularly for women will open up with a tangible impact on socio-economic conditions of the developing jute-producing countries.

Various studies conducted by IJO/IJSG from time to time have indicated that jute-diversified products like home textiles, jute geotextiles, agro-textiles, composites, pulp & paper, technical textiles, etc. have the potential to clinch a larger share of the global market, which would require huge volume of jute fibre in future. Due to increasing pressure on land jute has to be cultivated in less land area. Thus it is imperative that newer varieties of jute with higher yield potential and better quality are taken to the farmers, speedily, with required technologies.
2.4 Significance of the Project

The current project proposal is unique in that it integrates the selection of potential high yielding jute varieties, optimisation of its production techniques and inputs, production of certified seed under entrepreneurs' participatory seed production programme, maintenance, preservation and their distribution /marketing. It aims at establishing an appropriate, self sustaining supply chain under a contractual arrangement between all the stakeholders of the sector form farmers to the industry.

Due to very low profit margin in jute cultivation and processing, its area has been confined to marginal land. National average productivity of jute fibre in Bangladesh is 1.93 t/ha, which is higher than that in India (2.1 t/ha) and Nepal (1.43 t/ha). It can be attributed to uncertainty of raw jute price, low options of high yielding jute genotypes, use of low quality jute seed, low soil fertility, intrusion of low quality jute seed from traders/ market / unreliable sources at cheaper rate, lack of motivation & knowledge about modern jute seed production technology, lack of knowledge about grading of jute and weed management factors, etc.

To increase profit margin in jute cultivation and processing, production cost needs to be cut down. To reduce the cost of cultivation high yielding jute varieties need to be developed/identified for increased productivity. Such genotypes should be promoted to jute growing areas in collaboration with concerned stakeholders: researchers, extension personnel, traders, and farmers. Resource conservation technologies identified/ verified also need to be disseminated. Profit margin per unit area in jute cultivation will be increased with higher productivity and more growers will become attracted in jute cultivation. Increased production will also help to meet the demand of jute mills of some countries.

Though West Bengal, Orissa, Bihar and Assam are the only jute fibre growing area in India but jute seed is not produced in these states. The weather, particularly rainfall, and soil in Vidarbha, Maharashtra and parts of Andhra Pradesh, Gujarat and Karnataka is ideal for jute seed production. Jute in these areas is grown on land where no other crop can be grown as efficient as jute for seed production.

Jute seed production at present is concentrated in Andhra Pradesh but recently farmers of that region started cultivation of maize to meet the growing demand of animal and fish feed industries. Thus jute seed production in fibre producing states is utmost necessary to combat unforeseen situation which can be solved if jute seed is produced locally in suitable areas. This will eliminate the unscrupulous means of creating artificial crisis with consequent price rise. Therefore, jute seed production in cultivable fallows of drier tract of West Bengal, non-traditional area can be explored with immense possibilities.
3. Project Partners & their Responsibilities

3.1 Supervisory Body

Name: International Jute Study Group (IJSG)

Address: 145, Monipuripara, Near Farmgate, Tejgaon, Dhaka - 1215, Bangladesh

Phone: (880-2) 9125581-5 (5 Lines)
Fax: (880-2) 9125248-9 (2 Lines)
E-mail: projects@jute.org, info@jute.org
Website: http://www.jute.org

Core activities: The International Jute Study Group (IJSG) is an Inter-governmental body set up under the aegis of UNCTAD to function as the International Commodity Body (ICB) for jute, kenaf and other allied fibres.

IJSG as the recognized International Commodity Body will be the supervisory body for the proposed project, as is customary with CFC supported projects. The IJSG came into force with effect from 27 April, 2002 as the successor organization to the erstwhile International Jute Organization (IJO). The UNCTAD Agreement establishing the Terms of Reference of the International Jute Study Group (2001) recognizes the importance of jute and jute products to the national economies of a number of countries. The Agreement identifies the need for projects and activities designed to increase jute-derived earnings in developing jute-producing countries, thereby contributing to the alleviation of poverty in these countries. The Agreement also supports strengthening international co-operation between jute producing and jute importing countries. The IJSG is mindful of these aims and objectives, and the present project proposal has been carefully designed to demonstrate feasible, practical strategies to achieve these desirable goals.

Responsibility of Supervisory Body

The responsibilities of the supervisory body, IJSG, will be broadly as follows:

- To ensure that the project meets the objectives set out in Chapter 4.
- To work in close liaison with the PEA and CFC to ensure successful execution of the proposed project.
- To ensure submission of six monthly progress reports to CFC through the PEA, as a means of monitoring and evaluating progress to date, as well as identifying potential hindrances to project completion.
• To conduct overall supervision of the project by examining all the information submitted to it by the PEA on project implementation, actions taken, expenditures made, results achieved and financial management.

• To submit regular supervisory reports to the Fund during the project’s lifetime in accordance with the Project Agreement.

• To monitor progress through the review of periodic progress reports, review meetings and visits to the project sites as deemed necessary, to decide on on-course modifications of the project, if deemed necessary and to assist/advise the PEA in overcoming unforeseeable hindrances if any.

• To provide a short assessment of the project, including achievement of the set objectives, the continuing relevance of those objectives, lessons of experience and suggestions for improving future projects concerned with the jute industry.

3.2 Project Executing Agency (PEA)

Name : Department of Jute, Ministry of Textiles & Jute, Govt. of Bangladesh

Address : Karim Chamber (1st & 2nd floor)
99 Motijheel Commercial Area
Dhaka 1000, Bangladesh
Phone : +88 02 9561546; 9566714
Fax : +88 02 9561535
E-mail: dojute@agnionline.com
Website: doj.gov.bd

Constitution & Core Activities:

The Department of Jute is relatively a new establishment which was reorganized in 1992 through merger of the then Directorate of Jute and the Directorate of Inspection of Jute & Jute Goods, under the administrative control of the Ministry of Textiles & Jute, Government of Bangladesh.

It undertakes control measures in accordance with the jute growers (border areas) Act, 1974; application and implementation of jute ordinance, 1962; application and implementation of jute (licensing and enforcement) rules 1964; taking legal action against the jute traders who do not export raw jute or jute goods as per the trade deal with the expatriate importers and or violate trade deals executed with them; collecting, disseminating, information and statistics relating to sowing, export, production, internal use and storage of jute and jute goods; supervising standard testing methods of jute mills; assisting the jute mills in the inspection and maintaining quality control aspects. The department is also implementing a project entitled “Integrated HYV Jute and Jute Seed Production Project” for the development of the jute sector.

DOJ serves the interest of jute growers, traders and all persons and Institutions involved in the production of jute goods and marketing; expands and controls domestic and cross border
business of jute and jute goods; collects, compiles and preserves all sorts of statistics relating to production, use & marketing of jute & jute goods; keeps watch over various types of crimes, corruptions, misuses and irregularities in matters relating to jute and jute goods trades; gives strategic counsel to government in formulating jute policy; imparts training to jute growers in producing jute in improved way, rating and marketing jute; and tests and inspects the standard of jute goods.

About 500 highly technical personnel are working on the development of technologies for production in national level. The personnel have experiences in the production, technical evaluation and application of different technology based information to the farm level.

Responsibility of DOJ as PEA

The overall management of the project is to be entrusted to the Department of jute (DOJ) in the capacity of Project Executive Agency (PEA).

The PEA will be responsible for implementation and day-to-day management of the project as a whole in accordance with the Project Agreement and as required by the Supervisory Body and the Common Fund for Commodities. PEA is the key institution, which will be accountable for implementation of the project in detail in a disciplined and integrated manner.

A professional with appropriate academic, technical & practical experience will be appointed by the PEA to lead the project in the capacity of a Project Manager. The Project Manager will work in close cooperation with the designated persons/focal points of the nodal agencies of the participating countries and all parties involved in the project. The PEA will sign Implementation Agreements, consistent with the Project Agreement among CFC, IJSG and PEA, with the implementing institutions/agencies before the commencement of the activities under the project and disbursements of funds.

Among the several components of the projects the PEA will be directly responsible for selecting the entrepreneurs/traders/lead farmers for the project; providing training to and motivation programme for them; establishing linkage with research institutes and project seed entrepreneurs production of foundation seeds of the selected HYV jute; ensuring the required amount of foundation seeds in time. DoJ will also monitor the activities of distribution and marketing of the certificated so that the seeds can reach to the farmer in time.

More specifically the responsibility of the PEA will be as follows:

- Formulation of detailed programs and monitoring of progress through a special cell.
- Hiring services of consultancy organizations/ experts for different activities of the project and coordinating / streamlining their activities.
- Regular interaction with IJSG/CFC and nodal and concerned agencies of the Govts. of Bangladesh, India & Nepal for execution of the project.
- Reviewing and updating the progress of the project regularly.
- Arranging seminars / conferences / workshop at appropriate time.
- Financial management and budget control.
- Operation of an effective seed production, certification and distribution system.
- Preparation of training & user-friendly manuals.
- Overall coordination among all the components of the project.
• Production of Interim/ Annual and Project Completion Reports.

3.3 Nodal Agencies of the Participating Countries

a) Nodal/Lead Agency in Bangladesh

Bangladesh Jute Research Institute (BJRI), Dhaka:

Address : Manik Mia Avenue, Dhaka-1207
           Bangladesh
           Phone: +880 2 911 0868/ 9110953
           Fax: +880 2 911 8415
           E-mail: biriinfo@yahoo.com; dq@bjri.gov.bd;
                  islammahbul@yahoo.com
           Website: http://www.bangladeshgov.org/bjri

Core Activities : Undertaking a wide range of research activities on the improvement of jute and allied fibres including Variety development and modern technologies on Jute Seed Production.

BJRI is the oldest mono-crop research institute of Bangladesh on jute and allied fibres. It has both Agricultural and Technological Research Wings undertaking a wide range of research activities. About 200 scientists and technical personnel are working in the Institute on different aspects of jute and allied fibres from breeding to product development. BJRI houses the Gene bank, the Centralised Germplasm Repository of jute and allied fibres. The Gene Bank established in 1982, has about 6000 germplasm of jute and allied fibres, out of which a large number of germplasm was collected through the then DDO and is maintained and available in the BJRI Gene Bank. This gene bank is also functioning as the global repository for the genetic conservation of the JAF germplasm.

Responsibility of BJRI

• To select potential HYV jute seeds developed and released by BJRI or CRIJAF.
• To undertake location specific research on HYV of jute.
• To ensure supply of the required amount of breeder seed to entrepreneurs and lead farmers for production of foundation seeds of the selected HYV jute.
• To provide training and motivation programme for the seed farmers.

b) Nodal/Lead Agency in India

Central Research Institution for Jute & Allied Fibres (CRIJAF), Kolkata, India

Name : Central Research Institution for Jute & Allied Fibres (CRIJAF)

Address : Nilgunj, Barrackpore
           24 Parganas (North)
Core Activities: Undertaking a wide range of research activities on the improvement of Jute and various important allied fibres and development of economically viable and sustainable production technology and cropping systems with jute and allied fibre crops. CRIJAF is one of the premier institutes for research on Jute and Allied Fibres under the administrative control of Indian Council of Agricultural Research (ICAR), Ministry of Agriculture in India.

The Indian Central Jute Committee (ICJC) was formed in 1936 in view of the importance of jute in the economy of the country in general, and eastern India in particular. Subsequently, Jute Agricultural Research Laboratory (JARL) was established in 1938 at Dhaka, now in Bangladesh. After partition of the country, jute research shifted to Chinsura in West Bengal, and then to Barrackpore, and finally established at the present place (Nilganj, Barrackpore) in 1953 as Jute Agricultural Research Institute (JARI). ICJC was taken over by Indian Council of Agricultural Research (ICAR) in 1966. The Institute has been rechristened to its present name Central Research Institute for Jute and Allied Fibres (CRIJAF) in January, 1990.

CRIJAF deals with Jute and various important allied fibres. To carry out research work on allied fibres and seed, the Institute has four research stations at different parts of the country viz. 1. Ramie Research Station, Sorbhog, Assam; 2. Sisal Research Station, Bamrah, Orissa; 3. Sunnhemp Research Station, Pratapgarh, Uttar Pradesh; and 4. Central Seed Research Station for Jute and Allied Fibres, Budbud, West Bengal

Mandate
a) Improvement of jute and allied fibre crops like mesta, sunnhemp, ramie, sisal and flax for yield and quality.
b) Improvement of jute and allied fibre crops for biotic and abiotic stresses.
c) Improvement of jute and allied fibre crops for biotic and abiotic stresses.
d) Development of economically viable and sustainable production technology and cropping systems with jute and allied fibre crops.
e) Development of proper post-harvest technology for improving the quality of fibre.
f) Transfer of technology and human resource development in relation to jute and allied fibre crops.

The mandates of the All India Network Project for Jute and allied fibre crops (AINP) are (i) to provide scope and opportunity for wider evaluation of the proven results/technology of applied value with the help of interdisciplinary, multi-locational research approach, (ii) to cover a wide range of agro-ecological conditions in a wider socio-economic background and speed up spread and application of results of research. CRIJAF maintains a Gene Bank with 4723 types of germplasms. CRIJAF is assigned with the production of Breeder Seed for jute and sunnhemp annually as per the indent of Department of Agriculture & Cooperation (DAC), Government of India.
Responsibility of CRIJAF

- To select potential HYV jute seeds developed and released by BJRI or CRIJAF.
- To undertake location specific research on HYV of jute.
- To ensure supply of the required amount of breeder seed to entrepreneurs and lead farmers for production of foundation seeds of the selected HYV jute.
- To provide training and motivation programme for the seed farmers.

c) Nodal/Lead Agency in Nepal

Jute Research Programme (JRP), Nepal Agricultural Research Council (NARC)

Name : Nepal Agricultural Research Council (NARC)
Address : Singhadurbar Plaza,
Kathmandu
Post Box No. 5459, Kathmandu
Nepal
Phone: +977-1-5523041, 5525704
Fax: + 997-1-4262500
E-mail: ed@narc.org.np

Core Activities: Undertaking activities for producing breeder and foundation seed of jute and distributing foundation seed to the National Seed Company, Nepal for their multiplication and distribution to the jute growers through seed dealers; and assisting government in formulation of agricultural policies and strategies on jute.

JRP under the Administrative control of Nepal Agricultural Research Council (NARC) is involved in community based seed production programme in Siraha and Sunsari district for easy availability of improved seed to the growers at rational price.

Nepal Agricultural Research Council (NARC) was established in 1991 as an autonomous organization under “Nepal Agricultural Research Council Act – 1991” to conduct agricultural research in the country to uplift the economic level of the people. NARC is the apex body for agricultural research in the country with the ultimate goal of poverty alleviation with sustainable growth of agricultural production through the development of appropriate technologies in different aspects of agriculture.

NARC conducts qualitative agricultural research required for national agricultural policies, prioritizes studies and researches to be conducted, provides research and consultancy services to the clients, coordinates, monitors and evaluates the agricultural research activities in Nepal and documents the research activities.

Responsibility of JRP, NARC

- To select potential HYV jute seeds developed and released by BJRI or CRIJAF.
- To undertake location specific research on HYV of jute.
To ensure supply of the required amount of breeder seed to entrepreneurs for production of foundation seeds of the selected HYV jute.
To provide training and motivation programme for the jute seed farmers.

3.4 Project Implementing/ Collaborating Agencies

a) Seed Certification Agency, Bangladesh

Address: Gazipur-1701
Bangladesh
Phone: +880-2-9252033
Fax: +880-2-9257134
E-mail: dir@sca.gov.bd
Website: www.sca.gov.bd

Core Activities: Mainly advises seed producers on production, processing and quality control of seeds and collects information on seed production, processing and quality of seeds, certifies all breeder and foundations seeds of controlled crops; and certifies seeds for seed enterprises as a service, if resources permit.

SCA has been established in 1974 as a government organisation under the Ministry of Agriculture. Seed quality control, testing and enforcement of seed regulations are implemented by SCA. The SCA has been strengthened by provision of expanded laboratory facilities, increased number of trained seed technologies and gradual development of a seed sub-cadre.

Responsibility of SCA

- To visit project farmers’ plots time to time and maintain field & seed standard of the breeder, foundation and certified seeds of HYV jute.
- To certify the seeds produced from different organisations of the project.
Programme Management Pictorial

All project participants will liaise closely with each other to ensure the synergy of considering the market, manufacturing and testing aspects of the proposed project are fully exploited. As the PEA, Department of Jute (DOJ) considers the interaction of all participants as crucial to the success of the proposed project. The following diagram illustrates the organisational structure of the proposed project.
4. Objectives & Rationale

4.1 Rationale:

The rationale for the project stems out of the following situation:

a) Jute sector is experiencing a comeback to its glorious past due to the increasing demand for bio-degradable product worldwide. Consequently, jute cultivation which was being squeezed in more and more to the marginal land, now expanding rapidly. This project is thus aimed at increasing HYV jute seed production capacity and in turn resulting in larger crop production in much less area of land, alleviating poverty of the farmers who sustain their livelihood by producing jute. Jute is major cash crop for the farmers of major jute producing countries especially for the farmers of Bangladesh.

b) Recent uptrend in world jute market encouraged farmer to increase acreage of jute cultivation land. Therefore, HYV seed crisis become more important issue to the major jute producing countries.

c) Public Sector of India hardly produces 30% of seed and rests are produced by Private Sector. Private sector mostly produces TL seeds of old popular variety (JRO 524) which is the limiting factor for increase in productivity of jute fibres. In Bangladesh, state owned BADC produce around 25% of total demand of jute seed and private sector jute producers are absent unlike India.

d) Due to climatic advantage (scanty or no rainfall in flowering stage) jute seeds are produced in Maharashtra, Andhra Pradesh. Moreover, seeds are produced in such lands where no other alternative crops are cultivated. Seed production in specific areas (western parts of West Bengal) of fibre producing state (mainly West Bengal) has been explored and immense possibility was noticed.

e) In addition enhancement of jute seed yield and quality by manipulation of agronomic factors and water and nutrient management will be targeted. In this process farmer, seed entrepreneurs, certifying agencies and scientists will be actively involved to assure the availability of quality seed at local level.

f) Thus to increase the productivity of jute fibre, production of certified seed of newly released HYVs of jute and distribution among the farmers in time and in a sustainable manner are the prime objective of the project.

b) Experience of the project can be replicated in other countries of the world who are now thinking of producing jute. For example, Brazil and Ghana are now in the process of jute production. Brazil has already taken steps to regenerate its jute industry.
4.2 Broad Objective:

The project aims at facilitating efficient jute seed market where every value chain actor will be engaged in production, distribution and marketing of HYV seeds in a win-win situation. Successful implementation of the project will ensure access to high potential HYV seed to the farmer of major jute growing regions with appropriate technology to achieve higher production and income.

The specific objectives of the proposed project are outlined below:

- To ensure production of quality HYV jute seeds of at least 4-5 newly released HYV jute in each country.
- To develop optimum agronomic, soil/nutrient and water management processes to produce quality jute seed in shorter duration.
- To develop jute seed entrepreneurship to carry out jute seed production, distribution and marketing commercially.
- To enhance yield and quality of jute seed by manipulation of growth regulators.
- To impart training to entrepreneurs and their contract farmers on improved method and techniques of production of HYV certified or truthfully labelled jute seeds.
- To utilise common R&D in production of HYV seeds and its marketing.

4.3 Immediate Objective:

The immediate objective of the project is to establish an effectively operating seed production and distribution system, capable of supplying annually at least 2,000 MT duly certified seeds of recommended and promising high yielding jute varieties to jute farmers with sufficient quantities to cover about 280,000 ha land for production of jute fibre crop through a commercial jute seed production model.

4.4 Methodologies

- The project will be executed in three countries and research organizations related to jute will work in close collaboration to identify the appropriate seed for each region.
- Research will be done to find out best possible farming practice to optimise production level.
- Dissemination of the findings will be done in each region through workshops and seminar.
- Potential/interested Entrepreneurs will be identified and trained on improved seed production technology.
- To replicate the Guntur model of jute seed farming, required number of areas will be identified in each region.
- Selected Entrepreneurs will form their group of farmers in specific region to produce jute seed in commercial basis.
- Project, with its collaborating research institute, will provide training to the contract farmers.
- Initial production and demonstration will be supported through the project to minimize the risk of the farmers.
• Exposure visit will be arranged in different jute seed areas for the entrepreneurs and seed scientist/technicians who are working in the seed companies/research organizations.
• For contract farming of jute, project will work with the jute mills to build their capacity through developing backward linkages.
• Expansion of jute cultivation will be done through the jute seed producers and jute mills.

4.5 Economic Evaluation of HYV Jute Seed Cultivation

• It is estimated that by the end of this project, private sector will be able to produce and market 2,000 MT of HYV Seed which market value will be USD 2.8 m.
• The project has a target to increase per hectare jute production by 25%. Present average production is 1.93 t/ha in Bangladesh, 2.1 t/ha in India and 1.43 t/ha in Nepal. The project has a target to reach the average productivity to 2.75 t/ha. Obviously, Nepal has the best potential to grow as the average productivity in Nepal is only 1.43. If the project achieves, 25% of the areas where HYV seed is not properly introduced, it will able to add 154,000 t more production which price will be USD 94.4 million.
• Details of the cost-benefit of HYV jute is added as Annex-V

4.6 Deliverables

The deliverables from the project are highlighted below:

a) A database on the currently available new jute varieties with potential of very high yield and quality will be available from which a number of most promising varieties will be identified/selected in each of the participating countries;

b) Breeder, foundation and certified seed production base of recommended and promising jute genotype(s) will be increased.

c) Advanced technology for production, processing and preservation of HYV jute seeds at farmers' level will be disseminated through jute seed entrepreneurs.

d) Trainings will be imparted to the seed technician and contract farmers and extension personnel of the relevant agencies on improved methods and techniques of cultivation of HYV certified or truthfully labelled jute seeds.

e) About 25% of the demand for HYV jute seed will be met by the project supported entrepreneurs.

f) Extensive use of low quality jute seeds by the farmers would be prevented by replacing them through introduction of HYV certified or truthfully labelled jute seeds gradually.

g) Participatory variety selection for fibre production and contract farming based jute seed production program will be developed between all the stakeholders.
h) An efficient supply chain for production, quality control and timely supply of adequate quantity of seed and consequently the good quality jute fibre will be established.

4.5 Impact

The project envisages

a) Enhancement of the socio-economic conditions of jute farmers and help in alleviating poverty of economically weak sections in rural areas; and

b) Improvement of the employment opportunities of the rural folk, especially for women in the jute sector who partner their male counterpart in jute crop / jute seed crop cultivation.
5. Existing system and other ongoing projects

The department of Jute, Bangladesh has been implementing a program entitled Integrated HYV Jute and Jute seed production in 100 upazilas (sub-districts) of 35 Jute growing districts from July, 2002. Under this program 400 MT HYV Jute seed is produced in each year through cultivation of 2,000 acre land by involving 10,000 listed farmers. The theme of this program is "Grow your own seed". This project is farmer base approach where farmers receive training on jute seed production with necessary inputs and produce seed for themselves. The outreach of the project solely depends on the budget of government of Bangladesh.

Bangladesh needs 4,000-4,500 MT Jute seed in each year. Out of this, BADC supplies 700 tons. The listed growers of the ongoing program of Department of Jute produce about 400 tons HYV Jute seed. DAE & BJRI produce about 100 tons Jute seed each. Farmers also produce small quantities of jute seed. Bangladesh produces about 1200 t certified /TL seeds i.e. about 25% of the total requirement of jute seed. In the existing system, BADC with its contract farmer produce 700 MT Jute seed. But numbers of jute seed producer of BADC listed farmers are decreasing. The reasons behind that are opportunity cost of jute seed production is high and market for jute seed produced by the listed farmers are not ensured.

In existing system, BADC and ongoing project of Department of Jute are playing important role in production, distribution and marketing of jute seed. However, together the project and BADC can produce only 1,000 to 1,200 MT of seed which is not adequate. Moreover, increasing price of winter vegetable is competing with jute seed production period. To address this problem, Department of Jute is trying to add some side crop in the jute seed field. With this approach, production and distribution of jute seed confined for farmers' own use rather than commercial production and sales of jute seed. It is necessary to engage private sector in efficient jute seed production and marketing to establish a self sustaining value chain of seed.

In India, private sector is contributing around 80% of total jute seed but most with one/two varieties known as JRO-524 (Navin) and JRO 878. CRIJAF newly released varieties have more potential production of 3-4 MT per ha which are yet to get popularity among the farmers. Again jute seed production is confined in Andhra Pradesh. This model needs to replicate in other jute producing areas. Farmers of Andhra Pradesh have recently started to produce maize instead of jute seed to meet the increasing demand for feed industry. It is high time to replicate Guntur model in other areas to secure HYV jute seed production.

In Nepal, jute seed production is only 9-10% of the total demand. Nepal Agriculture Research Council, Jute Research Programme, Itahari, Sunsari is the government agency mandated to produce foundations seeds of recommended and release varieties to meet the demand of National Seed Company.

A flowchart of current production system has been added in Annexure II, III, IV.

5.1 Scope for Present Study /Work

It may be mentioned here that HYV jute seeds lose their genetical purity after 3/4 years. As a result, with a view to delivering the genetically pure HYV jute seeds to the farmers continuously, it needs to be implemented a project on setting up production system of HYV jute seeds. Besides, the R&D organisations of the three countries i.e. BJRI, CRIJAF, JRP (under
NARC) have been working tirelessly for development of new varieties of HYV jute seeds which needs to be transferred to farmers through private sector initiative.

If the farmers can be motivated gradually for use of newly released HYV jute seeds developed in all three countries following advanced cultivation technology, only about 67% of the total land required will produce the same amount of jute fibre and thereupon the surplus 33% of land will be left for other crop. As a result a total improvement in terms of quality and quantity in production of jute and financial growth can be brought in to the gross national product (GDP). The project will help the overall development of the jute sector through increased production of HYV jute seed at entrepreneurs’ level and its usage at farmers’ level.

One of the most important aspects of the project is regional cooperation. Through the regional cooperation an efficient system of jute seed production will be developed. The experience of the project can be replicated in different countries which are now planning to produce jute or struggling with production of HYV seeds. For example, this systemic change in production, distribution of the jute seed can be replicated in Ghana, Myanmar and Pakistan etc.

A good number of rural labour including women will get employment in the cultivation activities of the selected jute growers in the target areas and this will help alleviation of poverty to some extent.

The project will be executed in the rural areas and as such the poor and idle labour force will get employment in the activities envisaged under the project. It can be said that the project will execute in different location of the participating countries, where land are in under utilization. Commercial production of jute seed will add as alternative income generating activities for the rural farmers who are living in those underutilized lands. The project therefore, will help remove the present inequitable distribution of income in the country though in a limited scale. Through implementation of the project sufficient statistics/information will be generated from field level. This will help the research and development of HYV jute seed cultivation.
6. Project Components

The project has five substantive components as well as one component for dissemination & training and research and development.

The first component will find out the most appropriate 4-5 race of jute HYV seed in an action research process of cross country examination. Both CRIJAF and BJRI will establish demonstration plots with suggested farming practice in different areas of Bangladesh, India and Nepal. This component also contains some experiments to optimise the nutrient and water management operations; manipulation of agronomic factors to reduce the duration of HYV jute seed crop; and effect of growth regulators on the quality and yield of jute seeds. In addition to that this component will also identify suitable location for jute seed production in each region.

The second component focuses on the selection of entrepreneurs, lead farmers along with the areas from the respective countries’ traditional and non-traditional areas to grow jute seed. Project will try to incorporate the entrepreneurs who are already working in the seed project and will link them directly with research organizations. Capacity build of the entrepreneurs, contract farmer and lead farmers will be done through this component.

The third component deals with the production of breeder seed, foundation seed, certified / truthfully labelled seed of selected high yielding jute varieties. Research organization will work with this component to ensure effective supply of breeder and foundation seed for the entrepreneurs and lead farmers.

The fourth component aims at developing a mechanism for proper distribution and marketing of the produced HYV jute seeds under the project. This component will ensure market access for the HYV seeds through various promotional activities.

The fifth component includes a set of activities and output related to management, monitoring, supervision and evaluation of the project as well as the drafting the project completion reports. This component will also focus on exit policy or further scale up activities (if needed).

The activities in each of the components will be fully integrated throughout the project period by regular co-ordination meetings, and day to day liaison with and by the Project Executing Agency (PEA). Feedback and dissemination of findings will be made among the participants throughout the project duration. It is hoped that a holistic approach will ensure synergistic relationships between the different relevant stakeholders in the jute sector.
6.1 A flowchart of the major project Activities

Selection of 4-5 most potential HYV seed for each region
(Component 1)

Selection and optimisation of HYV jute genotypes through agronomic manipulation and nutrient & water management practices
(Component 1)

Selection of suitable areas for producing jute seed in commercial manner.
(Component 1)

Selection of entrepreneurs, lead farmers and areas from the respective countries' traditional and non traditional jute growing areas to grow jute seed
(Component 2)

Training of entrepreneurs and their contract farmers
(Component 2)

Production of breeder seed, foundation seed and certified/TL seeds of the HYV jute (selected through the research activities of Component 1)
(Component 3)

Increase demand for HYV seed through establishing demonstration plots for the farmers through seed companies
(Component 4)

Expansion of jute farming in potential areas through seed companies and/or jut mills
(Component 4)

Dissemination & documentation
(Component 5)
6.2 Brief Description of the Project Components

Description of activities, outputs and objectives of the six components including one minor but cognizable component on Documentation & Dissemination have been presented below in sequential order.

**Component 1:** Selection and optimisation of HYV jute genotypes through agronomic manipulation and nutrient & water management practices.

**Objective 1.1:** About 4-5 HYV jute will be selected from the released varieties on the basis of fibre yield and quality of jute seed.

**Output 1.1:** At least 2 HYV jute each of *capsularis* and *olitorius* having the highest yield potential in each of the participating countries.

**Activity 1.1:** From a number of released varieties 2/3 HYV of each species will be selected in each country on the basis of quality and yield of jute seed.

- **Responsible Institution(s):** BJRI, CRDAF, JRP
- **Duration:** 6 Months

**Objective 1.2:** To assess the seed quality and yield performance of the selected HYV jute in different locations.

**Output 1.2:** A comparative database/information regarding quality and yield of selected jute variety

**Activity 1.2:** Performance study of jute seed production in conventional and improved method in different project areas.

- **Responsible Institution(s):** BJRI, CRDAF, JRP
- **Duration:** 8 Months

**Objective 1.3:** Production of HYV jute seed through recommended nutrient and water management practises.

**Output 1.3:** Development of an optimum nutrient and water management schedule/system.

**Activity 1.3:** Performance study of jute seed production with recommended nutrient and water management practises in different project areas.

- **Responsible Institution(s):** CRDAF, BJRI, JRP
- **Duration:** 8 Months

**Objective 1.4:** Production of HYV jute seed in reduced duration through manipulation of agronomic factors.

**Output 1.4:** Development of a protocol/system for production of HYV jute seed within a shorter duration.
Activity 1.4: Experiments for jute seed production by manipulating different agronomic management operations like sowing jute in different dates at different project areas.

**Responsible Institution(s):** CRIJAF, BJRI, JRP  
**Duration:** 8 Months

Objective 1.5: Enhancing yield and quality of HYV jute seed by manipulation of growth regulators.

Output 1.5: Enhanced yield and quality of HYV jute seed by manipulation of growth regulators.

Activity 1.5: Experiments to study the effect of different growth regulators on yield and quality of the selected HYV jute crop.

**Responsible Institution(s):** CRIJAF, BJRI, JRP  
**Duration:** 8 Months

Objective 1.6: To identify potential areas for seed growing in each country.

Output 1.6: Classified areas that are suitable for jute seed production in commercial way.

Activity 1.6: Feasibility study to get the list of potential areas of jute seed production.

**Responsible Institution(s):** CRIJAF, BJRI, JRP  
**Duration:** 8 Months

Component 2: Selection and development of entrepreneurs and lead farmers from the respective countries' traditional/non traditional jute growing areas.

Objective 2.1: To identify interested entrepreneurs and lead farmers who are willing to accept jute seed production as a viable business for them.

Output 2.1: Interested and motivated entrepreneurs are selected from each of the countries.

Activity 2.1: Workshop seminar in each country with the potential entrepreneurs. Focus Group Discussion (FGD), field level survey and other related activities to find out potential entrepreneurs and/or lead farmers.

**Responsible Institution(s):** BJRI, DOJ, DAE, CRIJAF, CSRSJAF, JRP, NICDP, DADO  
**Duration:** 4 Months

Objective 2.2: To build the capacity of the entrepreneurs and contract jute seed producers in terms of quality and higher jute seed production.

Output 2.2: Selected entrepreneurs, seed technicians and contract farmers are trained and motivated in HYV jute seed production.
Activity 2.2: Training program on HYV jute seed production and farming.

**Responsible Institution(s):** BJRI, DOI, DAE, CRIJAF, CSRSJAF, JRP, NICDP, DADO

**Duration:** 12 Months

**Component 3:** Multiplication/Production of breeder seed, foundation seed and certified/TL seeds of the HYV jute

**Objective 3.1:** To produce breeder seed for the dedicated agencies/entrepreneurs/farmers.

**Output 3.1:** Breeder seeds will be produced

**Activity 3.1** The production operations for breeders' seeds of HYV jute in the research fields of the concerned R&D organisations.

**Responsible Institution(s):** BJRI, CRIJAF, JRP, SCA, CSRCJAF, NICDP

**Duration** : 8 Months

**Objective 3.2:** To produce foundation seed for the contract or lead farmers.

**Output 3.2:** Foundation seeds will be produced

**Activity 3.2:** The production operations for foundation seeds of HYVs of jute will be conducted by the respective agencies of the countries.

**Responsible Institution(s):** BJRI, DOI, SCA (Bangladesh); CRIJAF, CSRSJAF (India); JRP, NICDP, RSTL (Nepal)

**Duration**: 8 Months

**Objective 3.3:** To produce certified seed for the farmers.

**Output 3.3:** Certified or Truthfully Labelled (TL) seeds will be produced

**Activity 3.3:** The production operation for certified / TL seeds of HYVs of jute will be conducted in the project farmers fields to be certified by SCAs following standard methods of seed certification.

**Responsible Institution(s):** BJRI, CRIJAF, JRO, DOI, DAE, CSRSJAF, NICDP, SCA, RSTL

**Duration**: 12 Months

**Component 4:** Increasing demand for HYV seed by creating awareness on usage of HYV seeds.

**Objective 4.1:** Demonstrations will be done in field level to encourage jute farmers to use HYV jute seed.

**Output 4.1:** Farmers are encouraged to cultivate HYV jute for their high productivity.
Activity 4.1: Field level demonstration of HYV jute seed through the entrepreneurs, field day for the farmers, motivation and promotional program through other media.

**Responsible Institution(s):** DOJ, DAE, BJRI, SCA (Bangladesh); CRIJAF, CSRSJAF (India); JRO, NICDP, RSTL (Nepal)

**Duration:** 24 Months

**Objective 4.2:** Provide necessary inputs to jute farmers who are in close proximity of jute mills.

**Output 4.2:** Jute mills will able to procure raw jute through contract farming.

Activity 4.2: Capacity building of jute mills so that they can able to procure jute through contract farming. These capacity building activities will include training of contract farming for the mill supervisors and training of the contract farmers on modern jute cultivation.

**Responsible Institution(s):** BJRI, DOJ, DAE (Bangladesh); CRIJAF, CSRSJAF (India); JRO, NICDP (Nepal)

**Duration:** 12 Months

**Objective 4.3:** Objective of this program is to create opportunity for the seed producers and also meet demand of the industries.

**Output 4.3:** Jute farming will be introduced in potential non-jute growing areas.

Activity 4.3: Activities will include promotional activities for jute production including workshop, field level demonstration, field days through seed entrepreneurs.

**Responsible Institution(s):** DOJ, DAE, BJRI, SCA (Bangladesh); CRIJAF, CSRSJAF (India); JRO, NICDP, RSTL (Nepal)

**Duration:** 24 Months

Component 5: **Dissemination & documentation**

The results obtained under different components esp. on the selected HYV jute and the recommended seed production, processing, preservation techniques etc. would be compiled for production of user friendly manuals and distribution/dissemination among the stakeholders of the relevant countries. National level workshops, one in each country may be organised for the jute growers, seed producers, traders/distributors, national certifying agencies etc. along with all project partners.

**Objective 5.1:** Production of a user-friendly Manual on advanced jute seed production Technology of HYV jute

**Output 5.1:** Publication of user friendly manual on HYV jute and its seed production technologies.
Activity 5.1: Preparation of a user friendly manual mainly based on the results and recommendations under Activities 1.1, 1.2, 1.3, 1.4, and 1.5

**Responsible Institution(s):** BJRI, DOJ, DAE (Bangladesh); CRIJAF, CSRSJAF (India); JRO, NICDP (Nepal); IJSG

**Duration:** 3 Months

**Project Management & Reporting**

This plays an important role in successfully implementing a project. Thus a set of activities and outputs relate to the management, monitoring, supervision and evaluation of the project and also preparation of periodic and terminal reports/Project completion report. DOJ, the PEA along with all the Nodal Agencies of Bangladesh, India, Nepal and all project implementing/collaborating partners including IJSG and CFC will play vital effective roles in their respective areas for successfully and timely implementation of the project through the following activities:

- a) Establishment of project management/implementation structures by the PEA, with nodal agencies & other project partners.
- b) Preparation of interim/periodic and annual reports in CFC format by counterparts and Nodal agencies/national lead agencies; compilation and consolidation by PEA and submission to CFC.
- c) Evaluation and annual review meetings of the PEA with CFC/IJSG to devise measures to ensure smooth and timely implementation of the project activities and advise on annual progress reports.
- d) Midterm and final evaluation of the project
- e) Project supervision and monitoring by CFC and IJSG
- f) Annual auditing of project as per CFC requirements
- g) Project Completion Report by the PEA
7. Project Costs and Financing

The estimated total cost of the project is USD 2,222,300 of which USD 1,272,300 is requested from the Common Fund as a grant. The counterpart contribution from the PEA, Nodal agencies and other collaborating institutions/agencies of the project from all three countries including IJSG totals USD 950,000 to fund specific activities in Bangladesh, India and Nepal.

Estimated Cost and Financing

Estimated Cost and Financing of the proposed budget of the project is USD 2,222,300. The project cost is proposed to be funded as follows:

<table>
<thead>
<tr>
<th>Proposed Financing</th>
<th>Amount (US $)</th>
<th>% of Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFC Grant</td>
<td>1,272,300</td>
<td>57.25%</td>
</tr>
<tr>
<td>Counterpart Contribution (in kind)</td>
<td>950,000</td>
<td>42.75%</td>
</tr>
<tr>
<td>Govt. of Bangladesh</td>
<td>450,000</td>
<td></td>
</tr>
<tr>
<td>Govt. of India</td>
<td>400,000</td>
<td></td>
</tr>
<tr>
<td>Govt. of Nepal</td>
<td>75,000</td>
<td></td>
</tr>
<tr>
<td>IJSG</td>
<td>25,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,222,300</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Tables containing component wise, category wise cost details including counterpart contributions will be provided soon.

It may be stated in this context that while every attempt will be made to keep the expenditure within the budgetary provisions, it may be necessary to re-appropriate sub-component-wise expenses without exceeding the overall budget due to market and foreign exchange rate fluctuations.
8. Expected outputs/results

The project is a program of innovation and promotion of new technologies relating to HYV certified or truthfully labelled jute seeds production in Bangladesh, India and Nepal.

There is a good prospect of increasing productivity of jute fibre through use of good quality seed from this project. As a result, jute growers can harvest good profit margin from jute cultivation and more growers may be attracted leading to expansion in jute area. This will subsequently increase total production of jute fibre and substitute. Moreover, quality seed production in non-traditional area will increase the quantity and quality of jute seed to the farmers.

In general jute farmers and all other stakeholders involved in jute industry and trade will be benefited by the project.

Besides, more foreign exchange will be possible to be earned by exporting quality jute in foreign countries which undoubtedly will help increase financial growth of the country.

If the farmers can be motivated gradually for use of the newly released novel HYV jute seeds following advanced cultivation technology, only 67% of the currently used land will require to produce the same amount of jute with 33% of the surplus land can be left for other crops. As a result a total improvement in terms of quality and quantity in production of jute and financial growth can be brought in to the gross national product (GDP).

9. Benefits & Beneficiaries

The proposed project will have both direct and indirect benefits.

9.1 Direct beneficiaries

The farmers and the people involved in the jute industry and trade will be benefited directly by the project. Besides, more foreign exchange can be earned by exporting quality jute in foreign countries which undoubtedly will help to increase our financial growth of Bangladesh, India and Nepal.

The direct benefits that can be derived from the project are:

- Build technical capacity of the jute seed entrepreneurs and lead farmers to grow HYV jute seed in jute producing countries by increased jute cultivation use of jute and in effecting its increasing market share.

- Improve the opportunities for higher income and employment of the people, especially in rural areas, involved in production of more jute crop both for quality seeds and fibre.

- Strengthen the knowledge base and expertise of the agricultural R&D institutions and concerned departments/agencies/bodies of the participating countries associated with the project.
• Disseminate to the private sector in particular, with a view to encouraging companies/entrepreneurs in developing a controlled seed multiplication system and ensuring supply of good quality seed to the farmers thereby ensuring a jute fibre crop.

• Use of non-traditional area for production of HYV jute seed, advocating through proper water and nutrient management technique at critical stages and to increase seed yield with enhanced quality in shorter duration fitting the existing cropping system prevailing in that region.

9.2 Indirect beneficiaries

The indirect benefits that can be derived from the project are:

• Through cultivation of HYV jute seed, green belt will be increased and will have better environmental protection.

• It will help to maintain cropping pattern and protect land fertility and would replenish soil nutrient.

• Practice efficient globalization policy by using effectively an agricultural item produced en masse in developing countries for infrastructural development and maintenance.

• Give a boost to the rural economy in the jute-producing countries by generation of employment on a sustainable basis with the prospect of earning better wages due to value-addition.

• Governments by using the project results as an input may develop suitable for agro-industry policy.

10. Environmental Aspects

This is an appropriate project from environmental considerations. Jute, a natural agro-produce, poses no adverse environmental impact. Its cultivation, processing and manufacture are usually pollution-free. Jute cultivation facilitates multiple cropping pattern, enabling farmers to increase their field outputs. It precedes paddy and pulse cultivation in that order. Leaves of jute plants enrich soil. Retted water needed for fibre-extraction is also not environmentally harmful. Life Cycle Analysis of jute conducted by JMDC in June 2007 aimed at identifying environmental impacts associated with growing, manufacturing and use of jute products confirmed absence of any environmentally objectionable ingredient. The environmental aspects studied included greenhouse effect, eutrophication and air-acidification.

Jute sequesters a significant amount of carbon during its agricultural stage. Therefore the greenhouse gas (GHG) emission in the life cycle of jute is negative. With the increasing concern for global warming in developed countries, curbing GHG emission is looked upon as a distinct advantage. JGT fits in with this trend. Moreover jute holds an edge over other products on issues such as eutrophication and air acidification.

The use of good quality jute seed would encourage the farmers to grow more jute crop, obtain more financial return. Cultivation of jute will maintain the fertility of the land and contribute to the eco-sustainability through absorption of about 15 MT Carbon dioxide from the atmosphere.
and release of 11 MT of oxygen from jute plants of one hectare land during 120 days period of jute cultivation. Jute, the fast growing annual crop, has CO$_2$ assimilation rate several times higher than that of trees.

The use of jute as raw material for sustainable production of a broad range of industrial products can have a far reaching impact not only on the economies of the producing countries, particularly on rural economies, and on the international markets for competing commodities; but also by reduced pressure on dwindling forest resources, with associated benefits for biodiversity conservation and climate change mitigation; reduced need for chemical agricultural inputs through the adoption of new improved /better pest/insect resistant jute varieties.

11. Intellectual Property Rights

The participants listed in Section 4 agree with the CFC policy that the output emanating from the project benefits to the highest extent possible the intended beneficiaries of the project, especially stakeholders within the jute industry. The outputs of the project in terms of technology, know-how, data and reports will be generally placed in the public domain, so that they are available to everyone. This will effectively prevent third parties from acquiring exclusive, protected rights to any of the project’s output.

In the case of new production, processing, preservation etc. technology, it may be prudent to establish so called “defensive patents” in favour of CFC, so as to be in control of the use of the technology emanating from the project, thus ensuring access for the intended project beneficiaries alone, without the impact of third parties exploiting the new technology first. This may be achieved by the issuing of licenses for example. If new manufacturing technology does emanate from the project, no patents will be applied for, without the consent of the CFC.

The ICB confirm that existing intellectual property rights will not be violated by the present project.

It is accepted that the CFC maintains the rights to publish the project outputs and results, possible as CFC Technical Papers. The technologies for production, preservation, certification of HYV jute seeds and procedure for licensing of intellectual property rights shall be finalised by CFC in consultation with IJSG. All related publications and studies will fully acknowledge CFC funding and CFC’s name; address and logo will be appropriately displayed on the cover and title pages of any such publication. Such publications should be reviewed by the CFC. If any publication pertaining to the programme is not reviewed by the CFC, then a disclaimer will be included.
12. Work Plan

A detailed activity of the project has been prepared in the form a Chart showing the main activities and time schedule component wise. For each component detailed activities have been highlighted. The project implementation schedule has been shown on quarterly programmes, which are spread over different quarters. This has been provided in Annex IV. A broad matrix depicting involvement of the project partners in different activities is shown below.

<table>
<thead>
<tr>
<th>Project Components</th>
<th>Output</th>
<th>Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component 1:</strong> Selection and optimisation of HYV jute genotypes through agronomic manipulation and nutrient &amp; water management practices</td>
<td>At least 4-5 races of HYV seed will be identified suitable for each area from a cross country basis field trial. The appropriate farming technique will also be identified. Moreover, suitable areas for jute seed farming will be identified.</td>
<td>DOJ, BJRI, CRIJAF, JRP</td>
</tr>
<tr>
<td><strong>Component 2:</strong> Selection and development of entrepreneurs, lead farmers from the respective countries’ traditional/non traditional jute growing areas.</td>
<td>Selected entrepreneurs, lead farmers of the respective countries will be trained to produce seed commercially.</td>
<td>DOJ, BJRI, CRIJAF, JRP</td>
</tr>
<tr>
<td><strong>Component 3:</strong> Multiplication/Production of breeder seed, foundation seed and certified/TL seeds of the HYV jute</td>
<td>Adequate amount of seed multiplication will be done through entrepreneurs and lead farmers through establishing direct linkage to research institutes.</td>
<td>BJRI, CRIJAF &amp; JRP</td>
</tr>
<tr>
<td><strong>Component 4:</strong> Increasing demand for HYV seed by creating awareness on usage of HYV seeds.</td>
<td>Demand for appropriate HYV seed will be created among the farmers.</td>
<td>BJRI, DOJ, CRIJAF, JRP, SCA, CSRSJAF, NICDP, RSTL</td>
</tr>
<tr>
<td><strong>Component 5:</strong> Documentation &amp; Dissemination</td>
<td>User friendly manual on HYV jute and its seed production technologies.</td>
<td>DOJ, BJRI, CRIJAF, CSRSJAF; JRO, NICDP, Seed producers’ Associations and Farmers’ associations IJSG &amp; CFC</td>
</tr>
</tbody>
</table>
13. Monitoring, Supervision and Evaluation

In accordance with best programme management principles Department of Jute will act as the Project Executing Agency (PEA). The PEA responsibilities are outlined in Chapter 3. To ensure that the project objectives are met in accordance with the work plan and time frame envisaged, coordination and cooperation among the PEA, Supervisory Body (IJSG), the CFC and participating partners will be maintained throughout the project through regular interactions, meetings and different communication channels.

The PEA shall also submit to the CFC and the SB annually, not later than two months before the start of the subsequent reporting period, a draft annual work plan and budget. Each such work plan shall contain an implementation schedule for the project, linking all activities to be undertaken there under to a logical time frame while giving due emphasis to adequate reflection of the interactive nature of the activities falling under the different components of the project, and shall incorporate measurable and quantifiable milestones which enable the adequate progress monitoring. The SB shall provide its views and comments on such annual work plan and budget. With the approval of the CFC, the PEA shall incorporate in each annual work plan and budget the SB’s comments together with the CFC’s views.

Monitoring, supervision and evaluation of the proposed project will be reflected in regular technical progress reports, statements on periodical expenditure incurred through appropriate financial management, and annual audits linked to indicative milestones and deliverables. These include:

Reports

Reporting requirements will be as specified in the Project Agreement. The PEA will prepare six-monthly reports in collaboration with the Lead /Nodal agencies of the participating countries along with other institutions/agencies/parties associated with the proposed project. The supervisory body will submit regular supervisory reports to the Common Fund for Commodities during the project’s tenure in accordance with the Project Agreement. At the end of the project, the Supervisory Body will provide a short assessment of the project, including achievement of set objectives, the continuing relevance of those objectives, lessons of experience and suggestions for improving future projects concerned with the jute industry. The reports prepared after 30 months project duration will form the basis of the mid-term review and evaluation.

Monitoring visits

There is provision in the Project Budget for participating partners to undertake visits to other organisations within the project. This includes monitoring visits throughout the project duration by the Lead Agencies of India/Bangladesh/Nepal, Supervisory Body, the PEA and the Common Fund for Commodities. These visits are intended to gain a physical feel of the project-progress, to assess the nature of hindrances affecting the progress and to suggest solutions to the problems threatening the progress of the project.

Standards/ Manuals

Standards/ Manuals with the technologies for production, preservation, certification of HYV jute seeds will be prepared principally for the jute farmers, esp. jute seed producers and traders.
There will be summaries of the technical findings of the proposed project, intended to impart new information and know-how obtained from the project. These will be prepared in a user-friendly way to enable interested farmers/users to acquire the outputs of the project contained therein directly.

**Workshops**

The purpose of holding workshops one in each country i.e. Bangladesh, India and Nepal would be to review the progress of the project and to obtain inputs from the framers of the respective countries. The international seminar that is proposed to be held in the final year of the project is intended to disseminate the findings of the project among the stakeholders especially the end-user government departments/agencies and government regulatory bodies.

**Project Completion Report**

A detailed final report i.e. a Project Completion Report (PCR) will include text, photographs and illustrative charts connected with the proposed project. This will form the basis of the Completion Review, to be undertaken by the Common Fund for Commodities and the IJSG as Supervisory Body and ICB. Here, the final outcome of the project will be compared with the stated project objectives. The value, sustainability and re-applicability of the project outputs may be the criteria applied in the assessment. The final project report i.e. PCR will also analyze the findings of the project and indicate suggestions for their implementation.

**Impact Evaluation of the Project**

Evaluation of impact of the project is expected to lay thrust on assessing the expected extent of demand generation of the HYV jute seed in the three countries to gear up facilities for its production, processing, preservation, distribution and marketing in foreseeable future. The project is supposed to generate a data base for the purpose on which the future strategy on jute seed can be developed.

**Organisation and Management:**

**Bangladesh:**

A Steering Committee composed of representatives from different concerned government organisations/bodies/agencies headed by the Secretary, Ministry of Textiles & Jute shall:

i. Evaluate the financial and field level activities of the Project;
ii. Keep close liaison with different Ministries/Agencies concerning project &
iii. Issue instruction and give necessary decisions for smooth management of the project.

Director General, Department of Jute, shall be responsible for overall management of the project.

The day to day implementation of the project shall be looked after and monitored by a Project Manager/Leader with necessary supporting staff and officials. The manpower of the on-going project entitled "Integrated HYV Jute and Jute Seeds Production Project (2nd phase)" of the Department of Jute will be utilised for proper implementation of the project as and when necessary.
A Tender/ Procurement Committee will be there to process various procurements under the project.

To ensure smooth execution of the project activities, district committees at the concerned District level and Upazila Committees at the Upazila levels shall function.

India:

Director, CRDAF, ICAR shall be responsible for overall management of the project. There will be committee comprising of Plant Breeder, Seed Scientist, Agronomist, Plant Pathologist, Entomologist and Agricultural Extension Scientist headed by Director, CRDAF.

The committee shall:

1. Evaluate the financial and field level activities at different centres of the project
2. Coordinate the project activities and arrange procurement, certification and marketing activities of the project
3. Finalize the price fixation of seed and generation of report for the entire project.
4. Make liaison with different agencies and Govt. departments like National Jute Board, Directorate of Jute Development, NIRJAFT, JIT, Jute Commissioner etc

The Project Investigator (PI)/leader will operate from CRDAF/ CSRSJAF Barrackpore, West Bengal along with Co-PIs. Co-PIs at central project implementation unit will monitor the overall activities of the project at regular interval and report the progress. The Co-PIs will be responsible for the execution of project along with procurement of agricultural equipments and machineries following the rules and procedures of respective organization under whose jurisdiction project implementation unit works.

Nepal:

A Steering Committee composed of Executive Director (NARC), Director General (Department of Agriculture) and representatives from different concerned government and non-government organization headed by Secretary (MOAC) will monitor, evaluate financial and field level activities, keep linkage among concerned agencies and provide guidelines and decisions for smooth management of the project.

Crop Director, Nepal Agricultural Research council (NARC) shall be responsible for overall management of the project.

The day-to-day implementation of the project shall be looked after and monitored by coordinator (JRP) with necessary supporting staff and officials. The manpower of on-going project entitled "Participatory Quality improvement, low cost technology development, seed production and marketing of jute in Eastern terai of Nepal" of JRP will be utilized for proper implementation of the project as and when necessary.

The project coordinator and his staff shall be accommodated in the office of JRP, Itahari, Sunsari, Nepal. A tender/procurement committee will process various procurement activities under the project.
Community based farmer's groups will be mobilized for smooth execution of the project activities.

14. Risk Assessment

The present project has been prepared in a way so as to minimize risks associated with the proposed activities. Each component has set aims and objectives, and the means of achieving these objectives have been analyzed to ensure that they are realistic and feasible in terms of time and budgetary resources available. Some risks / assumptions are presented in the logical framework. Wherever possible, "what-if" scenarios have been considered, to ensure contingency plans are in place if activities are subject to unforeseen circumstances such as unavoidable due to reasons beyond control or Acts of God.

Despite attempts to consider all eventualities associated with the implementation of the project, it is inevitable that problems and unforeseen circumstances will occur. It is the responsibility of all project participants to identify potential and actual problems of project execution as soon as possible, and bring these to the attention of the PEA. It is then the PEA's responsibility (vide Chapter 3) that such problems are overcome as quickly and as efficiently as possible. It is proposed that a solution will be formulated in consultation with relevant project participants. Where problems are likely to affect the project progress overall, the IISG and the CFC will be consulted for advice. It is the project participants' responsibility to ensure smooth working and resolving any hindrance.

List of Annexes

- Annex I: Project Implementation Schedule
- Annex II: Jute Seed Production and Distribution System in Bangladesh.
- Annex III: Jute Seed Production and Distribution System in India.
- Annex VI: Project Cost Table
<table>
<thead>
<tr>
<th>Activities</th>
<th>Responsible Partners</th>
<th>PY1</th>
<th>PY 2</th>
<th>PY 3</th>
<th>PY 4</th>
<th>PY 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1: Selection of project farmers and assess their jute seed production status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective 1.1: About 4-5 HYV jute will seed will be selected from the released varieties on the basis of fibre yield and quality of jute seed.</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act. 1.1 A number of released varieties 2/3 HYV of each species will be sold in each country on the basis of quality &amp; yield.</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective 1.2: To assess the seed quality and yield performance of the selected HYV jute in different locations.</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act. 1.2 Perf. Study of jute seed prdtn in convn &amp; impvd method</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective 1.3: Production of HYV jute seed through recommended nutrient and water management practices.</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act. 1.3 Perf. study of jute seed prdtn with recmndd. nutr. &amp; water mgmt</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective 1.4: Production of HYV jute seed in reduced duration through manipulation of agronomic factors.</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act. 1.4 Exptrs. For jute seed prdtn by manptng dif. agrmcn mgmt prcexs</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective 1.5: Enhancing yield and quality of HYV jute seed by manipulation of growth regulators.</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act. 1.5 Exptrs to study the effect of difts growth regulators of HYV jute will be seltd in each country on the basis of quality &amp; yield.</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective 1.6: Identify potential areas for jute seed production</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act. 1.6 Perf. Study on feasible jute seed production area</td>
<td>BJRI, CRJAF, JRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Component 2: Selection and Development of entrepreneurs and lead farmer from the respective countries' traditional and non traditional areas

Objective 2.1: Selection and Development of entrepreneurs and lead farmers from the respective countries’ traditional and non-traditional areas.
| Act. 2.1 Workshop, FGD, survey | BJRI, DOJ, DAE, BADC, CRJAF | | | | | |
| Objective 2.2: To build the capacity of the entrepreneurs and their contract farmers | | | | | | |
| Act. 2.2 Training program on HYV seed production and farming | BJRI, CRJAF, JRP | | | | | |

Component 3: Multiplication/ Production of breeder seed, foundation seed and certified/TL seeds of the HYV jute

Objective 3.1: To produce breeder seed for the dedicated agencies/farmers
| Act. 3.1 The prdn ops for breeders’ seed to HYV jute in the res, fields | BJRI, CRJAF, JRP, SCA, CSRSJAF, NICDP | | | | | |
| Objective 3.2: To produce foundation seed for the farmers.
| Act. 3.2 The Prdn of fond, seeds of HYVs jute | BJRI, BADC, DOJ, SCA, CRSA; CRJAF, CSRSJAF, JRP, NICDP,RSTL | | | | | |
| Objective 3.3: To produce certified seed for the farmers.
| Act. 3.3 The prdn ops of certified/TL seeds of HYV of jute | BJRI, CRJAF, JRO, DOI, DAE, BADC, CSRSJAF, NICDP, SCA, RSTL | | | | | |

Component 4: Increasing awareness for HYV seed by creating awareness on usage of HYV seeds

Objective 4.1: To encourage farmer to use HYV jute seed
| Act. 4.1 Workshop, demonstration, field day, promotion in other mass media | BJRI, DOI, DAE, BADC, CRJAF, CSRSJAF, NICDP | | | | | |
| Objective 4.2: Capacity build up of jute mills to promote contract farming
| Act. 4.2 Capacity build up of the jute mills | BJRI, CRJAF, JRP | | | | | |
| Objective 4.3: Promote jute farming in new areas
| Act. 4.3 Capacity build up of the jute seed producers | BJRI, CRJAF, JRP | | | | | |

Component 5: Dissemination & Documentation

Objective 5.1: Production of a user-friendly Manual on advanced jute seed production Technology of HYV jute
| Act. 5.1 Prep of a user friendly manual mainly based on the results and recomnds under Activites 3.1, 3.2, 3.3, 3.4 & 3.5 | BJRI, DOI, DAE, BADC, CRJAF, CSRSJAF, NICDP, USG | | | | | |
| Objective 5.2: Dissemination of the results through workshops
| Act. 5.2 Dissemination workshops to be organized in the three participating countries | BJRI, DOI, DAE, BADC, CRJAF, CSRSJAF, NICDP, USG | | | | | |
Annex II

Jute Seed Distribution System in Bangladesh

A schematic view of Jute seed procurement and distribution in Bangladesh

- Farmers own seed 2.5%
- Local market seed/ neighbour 2.5%
- BADC and DOJ (Public sector) seed 20%
- Marketed from unidentified sources seed 25%
- Imported 50%
- Seed exchange 4.05%
- Sale or exchange
- Accumulator whole seller
- Intermediate whole seller
- Retail dealer
- Jute seed consumer (Jute grower)
Annex - III

Jute Seed distribution system in India

State Farm Corporation of India (SFCI) → National Seed Corporation (NSC) → State Seed Corporation (SSC) → Private seed Companies

Through minikit/subsidy programme

15-30%

Farmers (Jute Fibre producer)

70-85% (mostly TL seed)

Direct sale through dealer/retailer

Mainly JRO 524
Jute Seed Distribution System in Nepal

A schematic view of Jute seed procurement and distribution in Nepal

Source: JRP Senior staff visit on Jute seed growing areas.
Annex V: Cost Benefit Analysis of Usage of High Yield Variety Seed

<table>
<thead>
<tr>
<th>Particular</th>
<th>Cost with Traditional Seed in Tk</th>
<th>Cost with HYV seed in Tk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Labour</td>
<td>32,397.00</td>
<td>32,397.00</td>
</tr>
<tr>
<td>Land Preparation</td>
<td>7,115.00</td>
<td>7,115.00</td>
</tr>
<tr>
<td>Seed</td>
<td>700.00</td>
<td>1,397.00</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>2,250.00</td>
<td>4,241.00</td>
</tr>
<tr>
<td>Manure</td>
<td>1,500.00</td>
<td>4,005.00</td>
</tr>
<tr>
<td>Pesticides, Irrigation, Retting and Transport of Fibre</td>
<td>2,000.00</td>
<td>3,882.00</td>
</tr>
<tr>
<td>Interest on working capital</td>
<td>2,145.00</td>
<td>2,145.00</td>
</tr>
<tr>
<td>Rental Value of Land</td>
<td>17,693.00</td>
<td>17,693.00</td>
</tr>
<tr>
<td>Total Cost (in Tk)</td>
<td>65,800.00</td>
<td>72,875.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Particular</th>
<th>Return of Traditional Seed</th>
<th>Return of HYV seed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibre Production in KG</td>
<td>2,000.00</td>
<td>2,750.00</td>
</tr>
<tr>
<td>Return from Fibre</td>
<td>90,000.00</td>
<td>124,516.00</td>
</tr>
<tr>
<td>Return from Stick</td>
<td>20,000.00</td>
<td>24,372.00</td>
</tr>
<tr>
<td>Total Return (in Tk)</td>
<td>110,000.00</td>
<td>148,888.00</td>
</tr>
<tr>
<td>Net income</td>
<td>44,200.00</td>
<td>76,013.00</td>
</tr>
<tr>
<td>Benefit Cost Ratio</td>
<td>1.67</td>
<td>2.04</td>
</tr>
</tbody>
</table>

NB: The CB ratio is based on average production from HYV seed of BJRI stations located in different areas of Bangladesh in 2010.
**Project Cost Tables**

**Project Title:** Development of Jute Entrepreneurship through Regional Cooperation

**Table 1: Tentative Summary Cost Table by Component and Source (USD)**

<table>
<thead>
<tr>
<th>Project Components</th>
<th>CFC Contribution</th>
<th>Counterpart Contribution (in kind)</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component 1:</strong> Selection and optimization of HYV jute genotypes through agronomic manipulation and nutrient &amp; water management practices</td>
<td>258,950</td>
<td>239,000</td>
<td>497,950</td>
</tr>
<tr>
<td><strong>Component 2:</strong> Selection and Development of entrepreneurs and lead farmers from the respective countries' traditional/non traditional jute growing areas.</td>
<td>184,400</td>
<td>125,200</td>
<td>309,600</td>
</tr>
<tr>
<td><strong>Component 3:</strong> Multiplication/Production of breeder seed, foundation seed and certified/TL seeds of the HYV jute</td>
<td>404,850</td>
<td>297,200</td>
<td>702,050</td>
</tr>
<tr>
<td><strong>Component 4:</strong> Increasing demand for HYV seed by creating awareness on usage of HYV seeds.</td>
<td>230,000</td>
<td>130,000</td>
<td>360,000</td>
</tr>
<tr>
<td><strong>Component 5:</strong> Documentation &amp; Dissemination</td>
<td>145,200</td>
<td>158,600</td>
<td>303,800</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td><strong>1,223,400</strong></td>
<td><strong>950,000</strong></td>
<td><strong>2,173,400</strong></td>
</tr>
<tr>
<td><strong>Contingency</strong></td>
<td><strong>48,900</strong></td>
<td><strong>0</strong></td>
<td><strong>48,900</strong></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>1,272,300</strong></td>
<td><strong>950,000</strong></td>
<td><strong>2,222,300</strong></td>
</tr>
</tbody>
</table>
### Table 2: Tentative Summary Project Cost by Component and Year (USD)

<table>
<thead>
<tr>
<th>Project Components</th>
<th>PY1</th>
<th>PY2</th>
<th>PY3</th>
<th>PY4</th>
<th>PY5</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1:</td>
<td>148,500</td>
<td>169,100</td>
<td>164,850</td>
<td>15,000</td>
<td>0</td>
<td>497,450</td>
</tr>
<tr>
<td>Selection and optimization of HYV jute genotypes through agronomic manipulation and nutrient &amp; water management practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component 2:</td>
<td>0</td>
<td>137,800</td>
<td>119,800</td>
<td>52,000</td>
<td>0</td>
<td>309,600</td>
</tr>
<tr>
<td>Selection and Development of entrepreneurs, lead farmers and areas from the respective countries' traditional/non traditional jute growing areas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component 3:</td>
<td>42,000</td>
<td>169,950</td>
<td>172,700</td>
<td>191,850</td>
<td>125,550</td>
<td>702,050</td>
</tr>
<tr>
<td>Multiplication/Production of breeder seed, foundation seed and certified/TL seeds of the HYV jute</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component 4:</td>
<td>0</td>
<td>0</td>
<td>139,000</td>
<td>111,000</td>
<td>110,000</td>
<td>360,000</td>
</tr>
<tr>
<td>Increasing demand for HYV seed by creating awareness on usage of HYV seeds.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component 5:</td>
<td>0</td>
<td>36,000</td>
<td>39,000</td>
<td>37,000</td>
<td>121,800</td>
<td>303,800</td>
</tr>
<tr>
<td>Documentation &amp; Dissemination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub Total</td>
<td>190,500</td>
<td>512,850</td>
<td>635,350</td>
<td>406,850</td>
<td>357,350</td>
<td>2,172,900</td>
</tr>
<tr>
<td>Contingency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48,900</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,221,800</td>
</tr>
</tbody>
</table>
Table 3: Tentative Summary Project Cost by Category of Expenditure (USD)

<table>
<thead>
<tr>
<th>Category</th>
<th>Total Cost</th>
<th>CFC Contribution</th>
<th>Counterpart Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>I  Equipment, apparatus &amp; accessories</td>
<td>273,300</td>
<td>236,000</td>
<td>37,300</td>
</tr>
<tr>
<td>II Civil Works</td>
<td>192,000</td>
<td>35,000</td>
<td>157,000</td>
</tr>
<tr>
<td>III Materials &amp; Supplies</td>
<td>155,000</td>
<td>155,000</td>
<td>-</td>
</tr>
<tr>
<td>IV Personnel</td>
<td>610,850</td>
<td>244,900</td>
<td>365,950</td>
</tr>
<tr>
<td>V  Technical Assistance &amp; Consultancy</td>
<td>10,000</td>
<td>10,000</td>
<td>-</td>
</tr>
<tr>
<td>VI Duty Travel</td>
<td>133,400</td>
<td>133,400</td>
<td>-</td>
</tr>
<tr>
<td>VII Dissemination &amp; Training</td>
<td>236,900</td>
<td>216,500</td>
<td>20,400</td>
</tr>
<tr>
<td>VIII Operational Costs</td>
<td>561,950</td>
<td>192,600</td>
<td>369,350</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td><strong>2,173,400</strong></td>
<td><strong>1,223,400</strong></td>
<td><strong>950,000</strong></td>
</tr>
<tr>
<td>IX Contingencies</td>
<td>48,900</td>
<td>48,900</td>
<td>-</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>2,222,300</strong></td>
<td><strong>1,272,300</strong></td>
<td><strong>950,000</strong></td>
</tr>
<tr>
<td>Category of expenditure</td>
<td>Sub-category of expenditure</td>
<td>PY1</td>
<td>PY2</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>I Equipment, apparatus &amp; accessories</td>
<td>Motor bikes, equipment, small machineries</td>
<td>74,090</td>
<td>182,700</td>
</tr>
<tr>
<td>II Civil Works</td>
<td>Seed storing house &amp; Thrashing floor</td>
<td>38,950</td>
<td>47,240</td>
</tr>
<tr>
<td>III Materials &amp; Supplies</td>
<td>Consumables, chemicals, fertilizers, stationery etc.</td>
<td>19,000</td>
<td>28,000</td>
</tr>
<tr>
<td>IV Personnel</td>
<td>Project management, local staff &amp; support staff</td>
<td>104,810</td>
<td>108,810</td>
</tr>
<tr>
<td>V Technical Assistance &amp; Consultancy</td>
<td>International TA &amp; consultancies</td>
<td>600</td>
<td>2,600</td>
</tr>
<tr>
<td>VI Duty Travel</td>
<td>Int. &amp; local travel, DSA etc.</td>
<td>22,000</td>
<td>27,850</td>
</tr>
<tr>
<td>VII Dissemination &amp; Training</td>
<td>Training, Documentation, &amp; Workshop</td>
<td>36,900</td>
<td>35,000</td>
</tr>
</tbody>
</table>

Table 4: Tentative Detailed Cost Table by Year wise Category and Item of Expenditure (USD)
### VIII Operational Costs

<table>
<thead>
<tr>
<th>Reporting, administrative support, Audits, Rent of utilities/facilities/transports, maintenance, overheads, etc.</th>
<th>100,450</th>
<th>109,650</th>
<th>102,450</th>
<th>120,450</th>
<th>128,950</th>
<th>561,950</th>
<th>192,600</th>
<th>369,350</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IX Contingencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48,900</td>
<td>48,900</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,222,300</td>
<td>1,272,300</td>
</tr>
</tbody>
</table>

Note: Country wise data will be provided soon.