

NATIONAL AGRICULTURAL TECHNOLOGY PROJECT (NATP): Phase-1  
(IDA Credit # 4386)

OPERATIONAL MANUAL  
FOR  
AGRICULTURAL RESEARCH COMPONENT



**Bangladesh Agricultural Research Council**  
**Farmgate, Dhaka-1215**

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## 1.0. NATIONAL AGRICULTURAL RESEARCH SYSTEM

### RATIONALE

National Agricultural Research System (NARS) is responsible for generating agricultural technologies. Department of Agriculture Extension (DAE), Department of Fisheries (DOF) and Department of Livestock services (DLS) in the public sector and Non-Government Organizations (NGOs) in the private sector are the agencies responsible for transfer of the proven technologies.

Availability of technologies to the farmers requires technology generation and dissemination through the research and extension systems. Private investment in research and extension is low. The NGOs, local government and community organizations are coming up but very slowly.

Therefore, the public sector must continue to play a leading role in agricultural research and extension. This necessitates strengthening of the existing institutions in terms of human resources, reorientation, redirecting, rationalizing and networking both nationally and internationally.

### 1.1. COMPOSITION OF NARS

Bangladesh Agricultural Research Council (BARC), an apex organization was established in 1973 by the Presidential Order No. 32 to coordinate agricultural research conducted by various institutes and organizations located in Bangladesh. The continuing reorganization of research institutions led to further restructuring the agricultural research system in 1976 and Bangladesh Agricultural Research Council Amendment No. LI of 1976 was issued. The Ordinance was replaced by the BARC Amendment Act No.28 in 1988.

This Act was again amended by the Parliament in August 1996 to accord BARC wider responsibility of human resource development, planning, priority setting, coordination, monitoring, reviewing and evaluation of research programs of the National Agricultural Research System (NARS) institutes. Such empowerment was necessary to improve the use of resources allocated to the agricultural research community.

The National Agricultural Research System (NARS) is composed of BARC and other 10 national agricultural research institutes. Being the apex body of the NARS, BARC has the responsibility to strength the national agricultural research capability through research planning, coordination, integration and resource allocation. The BARC is governed by a Governing Body. Major policy decisions and guidelines are provided from the Governing Body to the Institutes of National Agriculture Research Systems. The institutes are conducting research on basic and adaptive programs. The capacity of different institutes varying widely in respect of manpower, physical resources and infrastructure. The Council also maintains linkage with international institutes and programs.

The institutes have specific mandates and these are placed under different relevant ministries. Management style of these institutes also different, as there are autonomous and Government institutes. A brief description of the NARS Agricultural Research Institutes (ARIs) is furnished below:

Institute	Ministry	Areas of Research
Bangladesh Agricultural Research Institute (BARI)	Agriculture	Research on cereals ( other than rice), pulses, oilseeds, vegetables, tubers, horticultural crops etc.
Bangladesh Rice Research Institute (BIRRI)	Agriculture	Research on Rice
Bangladesh Jute Research Institute (BJRI)	Agriculture	Research on jute production and utilization
Bangladesh Institute of Nuclear Agriculture (BINA)	Agriculture	Application of nuclear techniques in agriculture
Bangladesh Sugarcane Research Institute (BSRI)	Agriculture	Research on sugarcane
Soil Resources Development Institute ( SRDI)	Agriculture	Soil survey, soil classification and soil characterization
Bangladesh Fisheries Research Institute (BFRI)	Fisheries and Livestock	Freshwater, brackish water and marine fisheries research
Bangladesh Livestock Research Institute(BLRI)	Fisheries and Livestock	Research on livestock and poultry
Bangladesh Forest Research Institute ( BFRI)	Environment and Forest	Research on forestry and agro- forestry.
Bangladesh Tea Research Institute (BTRI)	Commerce	Research on Tea

## 1.2. The Agricultural Research Institutes (ARIs)

### Bangladesh Agricultural Research Institute (BARI)

BARI is an autonomous research Institute managed by an independent Board of Management. BARI conducts research to ensure increased and stable production of cereals ( excluding rice), oilseeds, pulses, fruits, vegetables, tubers, flowers, spices and condiments through scientific management of land, water, fertilizers, pests and diseases, develops varieties of crops with resistances to biotic and abiotic stresses; improves farming systems to optimize production, develops tools and machinery to improve labour productivity and train research and extension officers in improved crop production technologies. The Institute has six regional stations and 24 sub-stations including three hill research stations. It has six research centres of which the Tuber Crops Research Centre, Oilseed Research Centre and Horticulture Research Centre are located at the central station. The wheat Research Centre is at Dinajpur, the Pulses Research Centre is at Ishurdi, and Spices Research Centre is at Bogra.

### Bangladesh Rice Research Institute (BIRRI)

BIRRI is an autonomous research Institute managed by an independent Board of Management. BIRRI conducts research on all aspects of rice in order to develop modern varieties of rice with high yield potential for different ecosystems, develops component technologies for improving productivity of rice-based cropping systems and transfer rice production technologies through training, workshop, seminar, and publication. Research on development of varieties and production technologies is conducted at the BIRRI headquarters at Joydebpur and at nine regional stations.

### **Bangladesh Jute Research Institute (BJRI)**

BJRI is an autonomous research institute managed by an independent Board of Management. BJRI conducts agricultural and technological research on jute and allied fibres. The objectives are to develop short duration high yielding varieties of jute, kenaf and mesta; develop agronomic and crop protection technologies and processes and equipment for manufacturing new jute products and organize the production, testing and supply of improved pedigree jute seeds and multiplication, procurement and their distribution to various organizations and selected growers.

### **Bangladesh Institute of Nuclear Agriculture (BINA)**

BINA is an autonomous research institute managed by an independent Board of Management. BINA conducts research adopting nuclear techniques for the purpose of ensuring a stable and productive agriculture through evolution of new varieties of crops, scientific management of land and water, development of appropriate technology to improve quality and quantity of crops and development of methods for control of disease, insect and management of pests.

### **Bangladesh Sugarcane Research Institute (BSRI)**

BSRI is an autonomous institute managed by a Board of Governors. BSRI conducts research to develop high yielding, high sugar, and disease and pest resistant sugarcane varieties. Its functions are to develop and maintain a germ plasm bank through collection of sugarcane varieties; prepare production programmes of sugar, gur and syrup producing carbohydrate enriched crops/plants; conduct research on sugarcane based farming and to identify its economic advantages; and take measures for utilization of technologies regarding sugar, gur and syrup producing crops/plants.

### **Soil Resources Development Institute (SRDI)**

The objective of Soil Resource Development Institute May be replaced by "SRDI" is a government institute, the objectives of SRDI are to make inventory of soil and land resources of the country, classify them according to their potentiality, generate a detail database on soul land water and agro-climate, prepare guideline for the best use of the natural resource, identify and manage problem soils and finally ensure active role in sustainable increase of crop production. The vision of SRDI is to ensure judicious and profitable use of scarce land and soil resources of the country and to arrest or keep environment pollution related to agro-chemicals at minimum or zero level.

### **Bangladesh Fisheries Research Institute (BFRI)**

BFRI is an autonomous institute managed by a Governing Board under the Ministry of Fisheries and Livestock (MOFL). BFRI conducts research to enhance the growth of fisheries production through optimal utilization of inland, brackish and marine water bodies and to develop scientific policies relating to development of technology and management of fish culture and fish capture. The institute has four research stations.

### **Bangladesh Livestock Research Institute (BLRI)**

BLRI is an autonomous institute managed by a Governing Board under the Ministry of Fisheries and Livestock (MOFL). BLRI conducts research to solve basic problems affecting livestock and poultry production both at the national and farm level.

## Bangladesh Forest Research Institute (BFRI)

BFRI is a government institute under the Ministry of Environment and Forest . BFRI conducts research to develop management practices to increase productivity of national forest and village groves and to convert wastelands and marginal lands to forestry and agro-forestry uses; develop technologies for rational utilization of forest products; generate technologies to conserve or restore environment balances.

## Bangladesh Tea Research Institute (BTRI)

BTRI is a constituent unit of the Bangladesh Tea Board under the Ministry of Commerce. BTRI conducts research to increase yields and quantity of tea by developing improved production technologies and high yielding tea clones. The Institute has three sub-stations.

### 1.3. Coordination and Management of NARS

BARC is governed by three main bodies:

- The Governing Body        27- Member
- The Executive Council     20- Member
- The Secretariat            7- Division

Programs and plan of different ARIs are reviewed at the Executive Council (EC) meeting of BARC, where all the ARI Heads are members of the Executive Council and the Executive Chairman of BARC is the Chair of EC. In the EC meeting research coordination, approval of plans/programs and linkages are maintained. Duplication of research efforts and cross-cut issues are minimized in the meeting by developing Inter- Institutional linkages. Executive Council also recommends policy decisions to the Governing Body of BARC for the concurrence of the Government.

### 1.4. National Agricultural Technology Project (NATP)

On request of the Government of Bangladesh (GOB), the World Bank (IDA) has agreed to support a long term development program over a period of 15 years in three phases, the first phase NATP beginning in May 2008. The IFAD, in the process of dialogue, has agreed to co-finance the program with World Bank. The World Bank has indicated to provide a loan of US\$ 62.6 million for the first phase. The World Bank funding in the second and third phase will depend on the triggers set for the first and second phases respectively. The NATP comprises four components: Agricultural Research Support; Agricultural Extension Support, Development of Supply Chains, project management and coordination.

The Agricultural Research Support Component will have three sub components; (i) Sponsored Public Goods research (SPGR), (ii) Enhancement of Research Institutional Efficiency of the NARS institutes and (iii) Competitive Grants Program. The project will fund selected long term sponsored public goods research supporting ARIs and public sector universities. CGP will fund location specific, pre-identified, high priority, multi-disciplinary, short to medium term, problem-solving research and development. It will help to develop a more pluralistic research system by opening the CGP to the NARS institutes, universities and other research institutes, NGOs and through co-financing, to the private sector and the international institutes with excellence in agricultural research.

The agricultural research support in the NATP emphasizes enhancement of research institutional efficiency. It encompasses improvement of governance and a HRD program. In-country and international Ph.D. program and other training courses are included in the HRD program. Besides, there are provision for short course, post doctoral fellowships.

## 1.5. Safeguard Policies on PAD of National Agriculture Technology Project'2008

PAD on proposed credit on National Agriculture Technology Project as provided safeguard policies and a environmental management framework. This should be followed by all implementing partners during the process of implementation. Details on safeguard policy issues are provided in Annex-1.

### 1.5.1. Environmental Safeguards

The Environment Management Framework (EMF) includes a negative list of activities that will not be supported by the project. This includes (i) land acquisition; (ii) involuntary resettlement; (iii) activities within protected areas; (iv) use of pesticides prohibited under national legislation or international agreements to which Bangladesh is a party; and (v) any research involving Genetically Modified Organisms (GMOs) which have not been approved by an independent panel of internationally recognized experts, and cleared by the World Bank. Measures to strengthen environmental management in NATP are identified by components in the EMF.

### 1.5.2 Social Safeguards

Given that the project's interventions are chiefly aimed at technology development and dissemination as well as establishing supply chains, the impacts are expected to be mostly positive. None of the interventions require 'lands'. Upazilas to be covered in the first phase do not have Adibasi (tribal) population. In view of these, no social safeguard policy is triggered. However, in respect of Component 1 Agricultural research Support, as a proactive measure, and to ensure that the project would indeed generate positive impacts, it is made mandatory for each prospective research proposal to comply with safeguard measures. A safeguard management note shall form an integral part of the overall proposal. This will receive due attention while assessing the proposals. Towards this and to serve as a guidance note, the project has developed an Environment Management Framework (EMF) and a Social Management Framework (SMF), which essentially comprise; (i) national legislative framework; (ii) impact assessment matrix; and (iii) screening matrix. The legislative framework, along with the Bank's Safeguard Policies, provides an overall framework. Impact assessment matrix depicts the impacts likely to occur and the associated mitigatory measures thereof. Screening matrix helps in evaluating the social and environmental aspects of a particular proposal. All these have been discussed in stakeholder workshops. Systems and procedures for managing the same during the implementation phase have been agreed upon.

This report will provide operational procedures, guidelines and management system of the Agricultural Research Support Component.

## 2.0. SPONSORED PUBLIC GOODS RESEARCH

### Background

Agricultural Research Institutes (ARIs) are doing research primarily on short term and medium term problems to increase agricultural productivity. Cross cutting issues confronting agricultural productivity and sustainability are not being adequately addressed. Some of the constraints faced by the agriculture sector can be addressed through long term strategic and cross-cutting research. Public goods research on problems of marginal and landless farmers living in vulnerable areas (char lands, coastal areas, brackish water areas). Biodiversity, ecological problems and climate change issues traditionally receive much less attention. The project will fund selected long-term sponsored public goods research in such critical areas to complement Government efforts. This will also be necessary to avoid technology vacuum by generating a steady stream of usable technologies and intermediate research products for meeting the future needs. The SPGR will be supported within a sound policy framework, clearly defined long term strategy, expected outcomes that justify public expenditure and availability of research results to small and marginal farmers. The research themes to be funded will be those which are critical to enhancing productivity, food security, sustainability and diversification of production systems. The themes will be selected through a macro level priority setting process to be coordinated by BARC, taking into account the on-going research programs of ARIs and Universities.

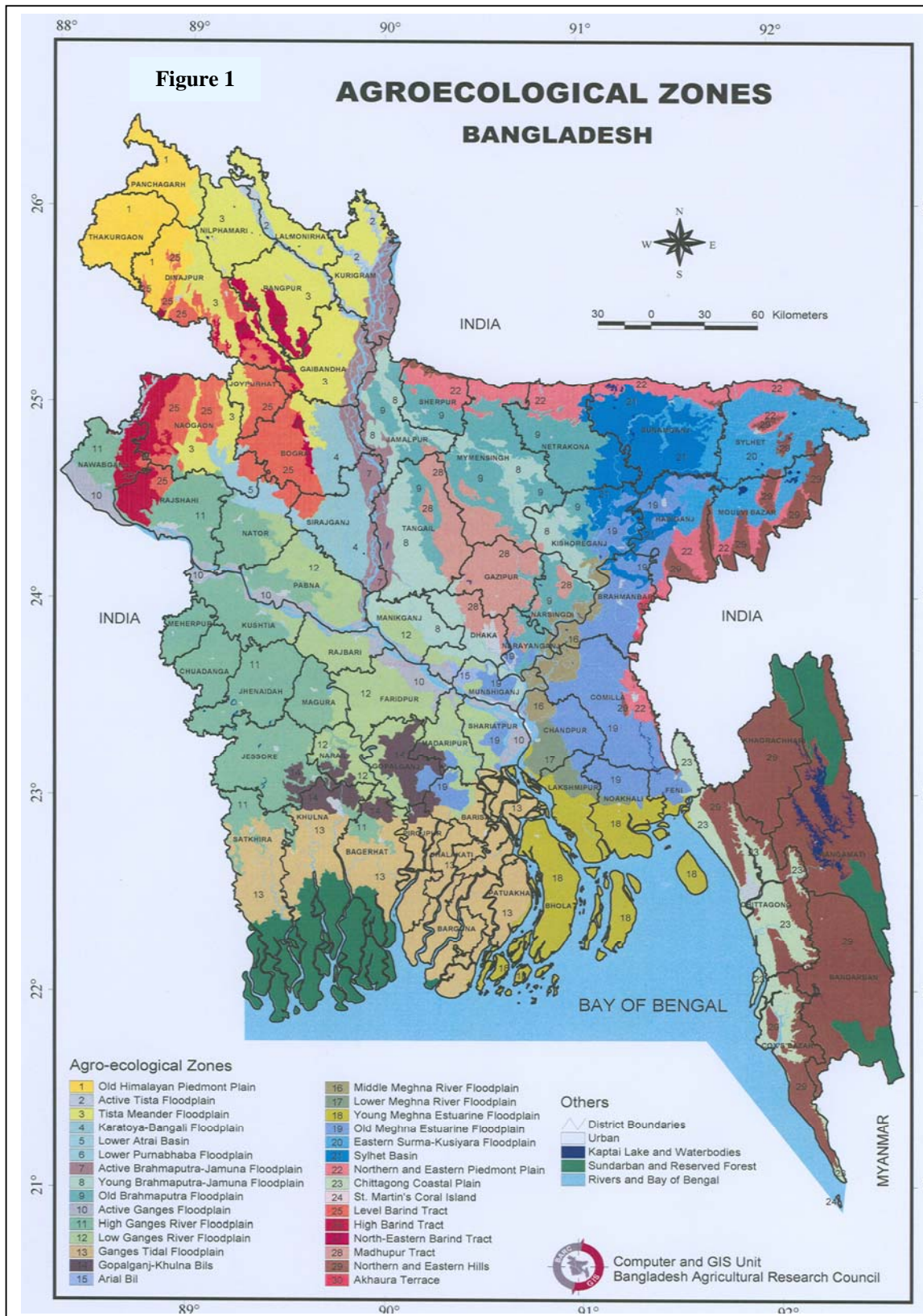
### 2.1. Identification of Agro-ecosystems (AEZ)

Bangladesh is rich in Agro-Ecological Zone (AEZ) data base system which provide agro-ecological constraints and opportunities in the diversified 30 Agro-Ecological Zone (AEZ) regions and 88 sub-regions (Fig-1).

The emerging major agro-ecological constraints in Bangladesh are :

1. Drought in kharif and pre-kharif seasons
2. Nutrient mining from arable lands
3. Coastal salinity and brackish water problem
4. Arsenic contamination in irrigation water
5. Poor irrigation system efficiency
6. Fragile eco-system and environmental vulnerability
7. Hill and mountain agriculture constraints
8. Low productivity of rainfed agriculture
9. Land fragmentation and degradation of land resources
10. Agriculture diversification constraints
11. Poor market network and high post-harvest losses.
12. Inefficient input management system
13. Threats of global climate change and global warming.

SPGR shall focus on the above thematic areas including many others and determine national priorities.



## 2.2. Thematic Areas

Analysis of AEZ data base system provides opportunities of identifying areas of production constraints and various intensities of economically distressed areas (Fig.2& 3). Such information could be used as baseline for determining thematic areas:

The major thematic areas could be:

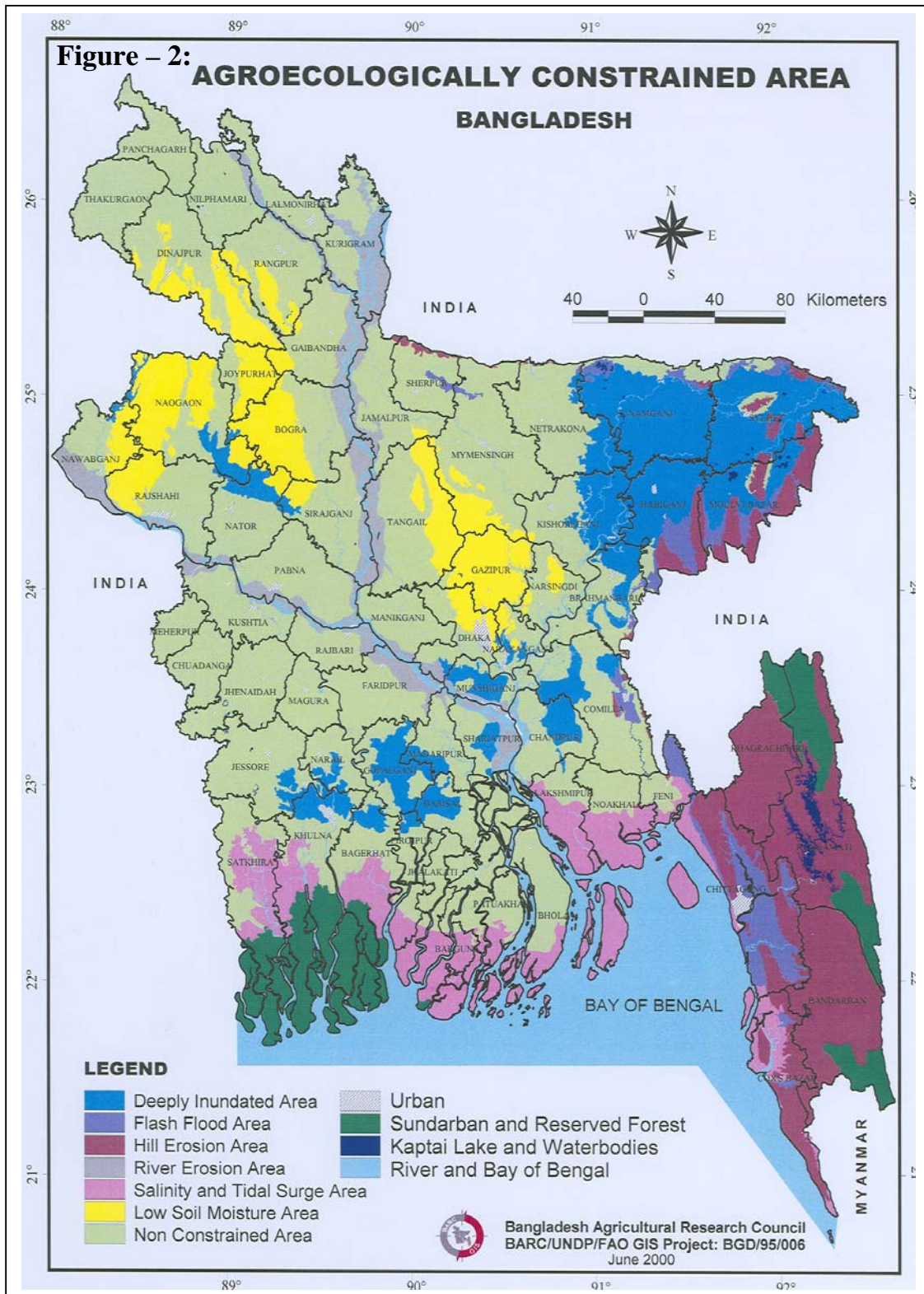
1. Management of risk of deeply inundated, flash flood and drought prone areas
2. Improved management practices for the land degraded areas due to nutrient mining, hill & river erosion and climate change vulnerabilities
3. Development of technologies for salinity and tidal surge areas
4. Optimization of production potential of natural resource bases
5. Managing post-harvest losses and value addition to farm commodities
6. Harnessing water efficient technology and increase of surface water storage
7. Conservation of agro-biodiversity
8. Promotion of agricultural diversification
9. Development of efficient management practices of production inputs
10. Promotion of native high value commodities
11. Creating employment and income generation in economically depressed areas
12. Harmonizing socio-economic and policy research for small holders.

In order of their importance to national policy objectives, production systems will receive support in an inter-disciplinary mode to resolve the identified problems and thus become responsive to the farmers' specific needs. This would involve a significant shift from the commodity and discipline specific approach to agricultural research in system perspective. This calls for important changes in the organization and funding of agricultural research.

## 2.3. Commonalities of Research in Different AEZ

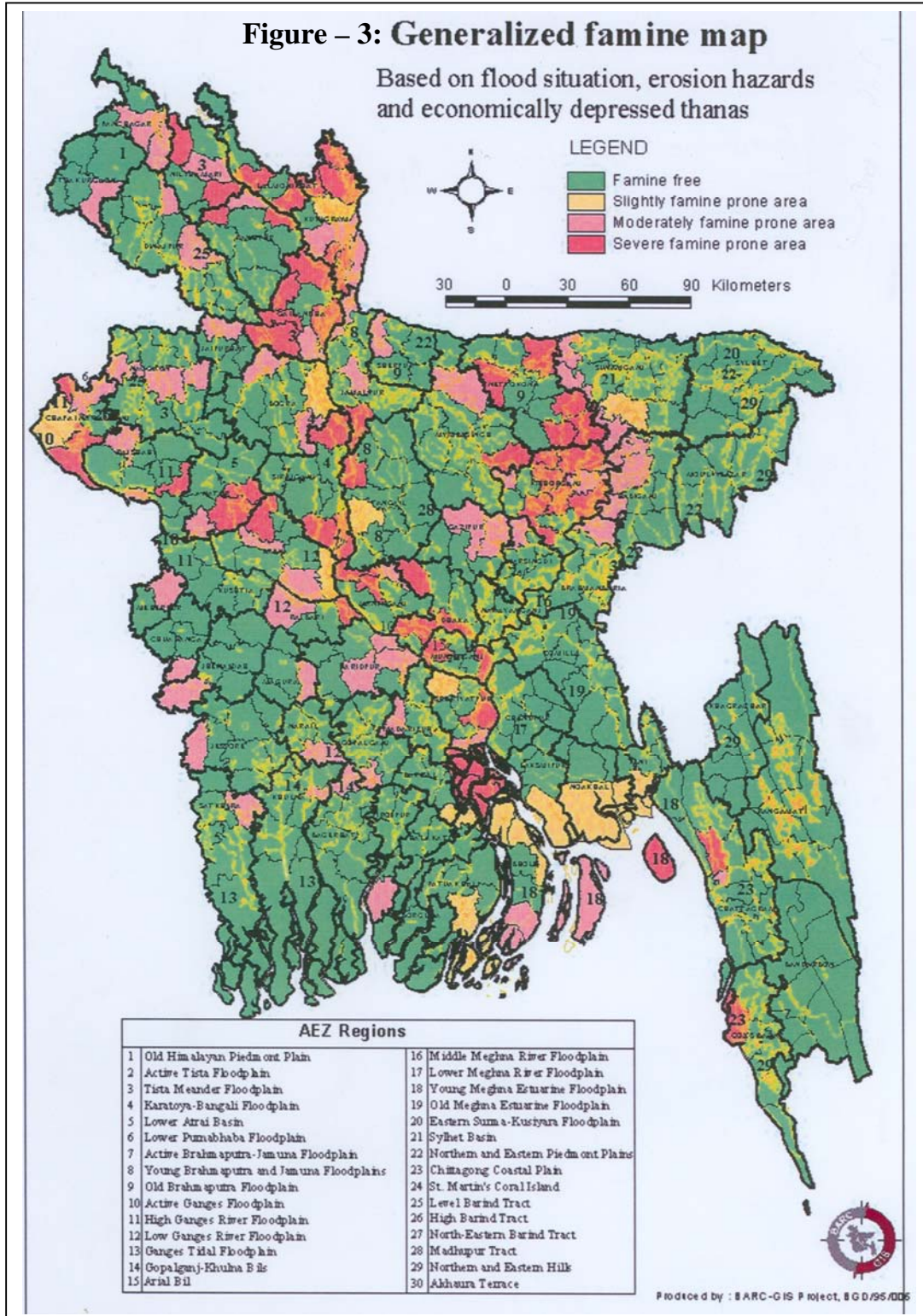
The research and technology programs for each of the AEZ region would have the following common features:

- Identification and characterization of the main features of the production systems in priority locations;
- Identification of the main constraints to intensification and diversification for sustainable production at these locations;
- Inter-disciplinary and inter-institutional team efforts to improve production, profitability and sustainability under farm conditions;
- Supporting strategies of research through Team/Centre of Excellence and Cross-cutting research in Mission Mode(MM) which will feed into Production System Research(PSR);
- Planning through bottom-up and interactive approaches with the collaborating centres and peers in formulation of individual proposals;
- Collaborative on-farm adaptive research;
- HRD provision to upgrade scientific skills of the scientists;
- Encouraging global interactions with research institutions of repute to develop long-term linkages;
- Technology Assessment and Refinement through Institute farmer Linkage Program.



**Figure – 3: Generalized famine map**

Based on flood situation, erosion hazards and economically depressed thanas



## 2.4. Modes of Research and their Characteristics

Keeping in view the similarities of research and technology in the 30 AEZs, the following three modes of research have been identified under the NATP:

- (i) Production System Research in the Program Mode
- (ii) Cross-cutting Research in Mission Mode; and
- (iii) Strategic Research in a Team of Excellence Mode.

### 2.4.1. Production Systems Research in the Program Mode (PSR)

Research under this mode has to be location specific; and needs to have a focus on key local developmental needs, problems or opportunities of the target production system; and have to respond to the requirements of the specified geographical areas or districts in which the targeted production systems dominate. This also have to harness inter-institutional and inter-disciplinary synergies.

### 2.4.2. Cross-cutting Research in Mission Mode (MM)

Research under this mode should have the following features:

- (a) Have a sharp focus on concrete outputs achievable in a short to medium time-frame defined in advance to the extent possible;
- (b) Offer prospects for improving productivity on a topic of importance to one or more production systems given priority in the NATP for which there is at present a critical and clearly characterized technology gap;
- (c) Provide information or data to support research on critical gaps relevant to one or more production systems or help prioritizing future investigations; and
- (d) Harnesses inter-institutional and inter-disciplinary synergies.

### 2.4.3. Strategic Research in Team of Excellence (TOE) Mode

Team of Excellence (TOE) would be promoted for upstream research and human-resource development in the strategic areas of national and long-term importance where opportunities for exploring developments in cutting-edge technologies exist. This TOE would develop into schools of thought to provide critical strategic research backstopping skilled human resource to production system research. The strategic or upstream mode of research involves bringing cutting-edge technologies and frontier sciences to bear on the development of production system. This is also associated with human-resource development.

Research under this mode should have the following:

- (a) Include topics of importance in relation to the pursuit of the national agricultural research priorities;
- (b) Involve frontier science, in prioritized strategic research areas for understanding processes and development of cutting-edge technologies;
- (c) Be strategic in the sense of having the potential to make a wide contribution and impact on the scientific advances relating to several production systems;
- (d) Have a potential of human-resource development; and
- (e) Build a critical mass of technical expertise and promote networking in concerned area.

## 2.5. NATP Research and Development (R&D) Priorities

The Research & Development (R&D) priorities of the NATP are in agreement with the objectives of the project and have been designed to match the national and sectoral thrust also. However, the NATP will encourage creative local-level needs with need identification on the basis of systematic need assessments within the broad priorities outlined for the NATP. In fact, the sub-projects supported by the NATP may integrate the various priority areas in a system mode to meet the local-level requirements. The thrust areas mentioned below are merely indicative of what the NATP sub-projects may address. These areas are the national and sectoral-level thrust, as reflected in the National Agricultural Policy.

### 2.5.1. Agricultural Diversification

For making agriculture profitable, sustainable and competitive, agricultural diversification will have to be promoted intensively. Attention towards precision farming, small-farm mechanization, resource-conservation technologies, use of sprinkler and drip-irrigation systems, fertigation, protective cultivation of flowers and vegetables, and adoption of high-value and low-volume crops is expected to be economically rewarding. This warrants a multi-faced approach with greater appreciation for various site-specific needs and compulsions of the farming systems, agro-climatic conditions, endowments of land and water resources, rural infrastructure, and the market demand both within and outside the country facilitating services and support systems, covering, credit, extension, marketing, prices, etc. are critical for successful diversification.

With emphasis on much-needed diversification in agriculture, the availability of quality seeds, particularly in the case of oilseeds, pulses, horticultural crops and fisheries, efficient field operations/hatchery management, facilitating and improving processing, post-harvesting management, marketing, quality assurance and strengthening of infrastructure for rapid multiplication of disease-free planting materials.

On-farm experimentation would be needed for testing and dissemination of technologies suitable for increasing food, feed, fodder and fuel ( rural energy) security, and improving the livelihoods of resource-poor farmers. Needless to mention that empowering of the small and marginal farmers and rural women through participatory approach is critical to provide them adequate strength to face natural calamities and farming failures.

### 2.5.2. Livestock and Fisheries Production

The livestock and fisheries sectors are emerging as important “sunrise sectors” in the country. Since livestock is largely owned by small and marginal farmers and landless people in rural areas, the sector’s rapid growth provides benefits to the poorer households. Further, the contribution of women in these sectors is substantial. Focused attention on genetic up-gradation, nutrition, management, disease surveillance and control, production of feeds, diagnostic kits and vaccines, post-harvest handling and processing and marketing of livestock and aquaculture produce, by-produce, and waste will certainly be rewarding. Studies on monitoring and control of trans-boundary livestock disease have implications for human health, international trade and compliance with hygienic and sanitary requirements of the importing country.

### 2.5.3. Genetic Resources

A sustained growth in agricultural productivity depends on regular improvements in germplasm (plants and animals, including fish and microbes) and nutritional value of staple foods, besides management of diseases and pests of crops and livestock. The traits required include improved yield potential, increasing yield stability through resistance to biotic and abiotic stresses, and enhancing adaptation to high stress conditions like drought, water logging and salinity. Genetic resources (plant, animal and microbial)

constitute one of the most important and invaluable natural resources and their proper documentation and effective utilization is an important endeavor. The importance of undertaking such an activity with the help of local communities, NGOs, etc. cannot be overemphasized. Identification of resistant genes in wild relatives, molecular marker mapping and marker-assisted transfer to the elite germplasm may be pursued. The vast microbial gene pool has to be explored and utilized for crop and animal improvement. Such efforts are not only capital and knowledge-intensive, but also warrant strong public-public and public-private partnerships. Inter actions between research institutions and the industry need to be strengthened for realizing the full potential of frontier sciences.

#### 2.5.4. Natural Resource Management

Enhancing the farmer's capacity to use and conserve natural resources (agro-biodiversity, and water management) and indigenous knowledge in an efficient and sustainable manner is an important issue in agriculture. This includes enhancement of crop and livestock, including fishery productivity in the intensified and more sustainable farming systems. Farmers' participation is decisive for this approach.

In view of the increasing water scarcity and the growing competition for water-use in agriculture, household and industry, efficient and sustainable management of water resources, with focus on watersheds and local-level community management is another important topic. Through its Consortia approach, the NATP will aim to combine short- and possible long-term economic benefits (farmer' interests) with long-term environmental concerns (public interest) and favorable institutional development.

Soil health has been affected adversely owing to depletion of organic carbon, imbalanced use of nutrients, micro-nutrients deficiency, etc. The proper understanding of this issue and addressing it through appropriate interventions by following the IPNM approach with appropriate policies assumes significance.

Precision agriculture may be explored to tackle the inadequate replenishment of nutrients to the soil in highly intensive cropping systems like rice-wheat, which have led to reduction in total factor productivity, water-use efficiency, nutrient- use efficiency, and the overall input-use efficiency.

Global warming is becoming an important issue for sustainable agriculture. Understanding its effect and developing adaptation and mitigation strategies should receive attention.

There is an increasing awareness about the quality of food as well as the extent to which the environment is affected by the excessive and indiscriminate application of chemicals on crops. Therefore, organic farming is attracting greater attention worldwide. The factors for successful adoption of organic agriculture in selected areas having competitive advantage, may be identified and technologies that support modern organic farming may be generated/strengthened. This research will not only contribute to enhanced nutritional and environmental security but also improve export prospects of agri-products.

#### 2.5.5. Integrated Pest Management (IPM)

Pesticides are often not accessible to small-scale farmers and skill and knowledge in the sound use of pesticides is lacking. Pesticide-misuse is therefore a significant health and economic hazard to producers, consumers and the environment. The evolution of new races, pathotypes, strains and biotypes of the pathogens and insect-pests is a continuous process. In this context, to manage such biotic stresses, efficient and effective integrated approaches are required. Consortia within the NATP may take up elaboration and validation of IPM policies and practices for the minimal ecologically-tolerable and economically-sustainable use of pesticides.

## 2.5.6. Value-addition and Post-harvests Processing

An area of immense importance to enhance the global competitiveness of agriculture is value-addition to and post-harvest processing of agri-produce. In view of the small and scattered farm holdings and a majority of farmers being resource-poor, strengthening of co-operatives, self-help groups, and contract farming assumes significance. The need for reduction in post-harvest losses is highly essential. This also concerns processing technologies to follow the changing consumption patterns. The post-harvest losses adversely affect the food-security and the market-presence of small-scale farmers by disrupting supply or reducing the quality of products. Establishing local storage and small-scale processing capacity has an impact on agricultural development similar to that of construction of other rural infrastructure. The NATP will address improving knowledge on post-harvest losses and management of most critical elements in the system, including quality assurance mechanisms to meet domestic needs and international trade requirements. In fact, the scope extends to issues related to the food chain of human beings and animals. In view of the complexity of changes in post-harvest and processing practices, attention may be given to the introduction and development of storage capacity, cold chain and processing technologies for small farmers.

## 2.5.7. Research on Policy Analysis and Market Intelligence

In the scenario of significant importance of markets in agriculture and the integration of markets within the country and with world markets, it has become clear that research to develop appropriate policies to suit these fast-changing global and national imperatives is highly essential.

## 2.6. Thrust Areas (Indicative)

### 2.6.1. Agribusiness Development

Keeping in view the global prospects of agri-business, the indicative thrust areas have been suggested under different criteria. These ideas may cut across criteria and can be developed as a proposal accordingly.

Examples of Possible Value Chains	
<p><b>Category 1: Food Security &amp; Income Augmentation</b></p> <ul style="list-style-type: none"> <li>☞ Rice based crops in rainfed &amp; flood-prone Areas.</li> <li>☞ Summer vegetables production and marketing</li> </ul> <p><b>Category 2 : Agro-processing</b></p> <ul style="list-style-type: none"> <li>☞ Potato</li> <li>☞ Tomato</li> <li>☞ Rabi vegetables</li> <li>☞ Dairy products</li> <li>☞ Pineapple</li> <li>☞ Banana</li> <li>☞ Fish products</li> </ul> <p><b>Category 3 : Income Augmentation &amp; Employment Generation</b></p> <ul style="list-style-type: none"> <li>☞ Milk &amp; Milk Products in Rainfed Areas</li> <li>☞ Peri-urban Dairy</li> <li>☞ Poultry in Southern Bangladesh</li> <li>☞ Small Ruminant Meat in Northern region.</li> <li>☞ Marine Fish</li> </ul>	<p><b>Category 4 : Export Promotion</b></p> <ul style="list-style-type: none"> <li>☞ Organic Rice</li> <li>☞ Fruits, viz. Mango, Guava, etc.</li> <li>☞ Spices and Value-added Products</li> <li>☞ High-Value Fish and Mariculture</li> <li>☞ Flowers</li> <li>☞ Medicinal &amp; aromatic Plants</li> </ul> <p><b>Category 5 : Resource-use Efficiency</b></p> <ul style="list-style-type: none"> <li>☞ Bio-pesticides &amp; IPM</li> <li>☞ Bio-fuel</li> </ul>

### 2.6.2. Research on Sustainable Rural Livelihood Security (SRLS)

About 85% of the poor in our country live in the rural areas and depend on agriculture for their livelihoods. Engaging them gainfully in enhancing production, value-addition, employment and income generation, and reducing their migration to cities are of paramount importance. The scope of livelihood security in disadvantaged/backward areas covering both economic growth and human development has to be comprehensive in terms of establishing and expanding the sources of employment and income within and allied to the agriculture sector, rural non-farm sector, food and nutritional security, better education (literacy), health care, sanitation and other basic amenities, and infrastructural facilities, particularly relating to the main rural occupations, etc.

#### Objectives

- (i) To improve the livelihood security of the rural people living in the selected disadvantaged regions through technology-led innovation systems, encompassing a wider process of social and economic change, and covering all the stakeholders, and
- (ii) To foster partnerships, pool competence and resources from conventional and non-conventional sources and to build social capital for better ownership and a sustainable model for rural development.

### 2.6.3. Basic and Strategic Research in Frontier Areas of Agricultural Sciences (BSR)

To sustain innovation, generate new knowledge and new finding that can later be turned in to the next generation innovations, higher investment must be made in basic sciences. It is important to contribute to the frontiers of agricultural sciences. In order to enhance capacity and attain excellence in the basic and strategic research in the frontier agricultural sciences.

A working Group consisting of scientists of international standing will identify theme areas of frontier science. Some of the Thrust areas are as follows:

#### (a) Genetic Enhancement of Plants

- Gene discovery, genetic, enhancement and allele mining in coarse cereals, oilseeds and pulses, mango, cucurbits and medicinal and aromatic plants.
- Targeted integration of genes and organelle transformation
- Proteomics/transcriptions for response to biotic and abiotic stresses
- Molecular diagnostics for plant pathogens
- QTL identification and/or use in marker assisted selection
- Farmer-friendly diagnostic tools for testing purity of modern & HYV

#### (b) Genetic Enhancement of Animals

- Gene discovery, genetic, enhancement and allele mining in farm animals and fishes.
- Proteomics/transcriptions for response to biotic and abiotic stresses.
- QTL identification and/or use in marker-assisted selection.
- Bio-prospecting in marine biota for novel genes, bioactive molecules and products
- Molecular diagnostics and vaccines for farm animals.

#### (c) Natural Resource Management

- Research into methods to control the availability and release of nutrients and carbon pool conservation and enhancement using strategic combinations of soil and organic & inorganic sources of nutrients.
- Research into GIS and low-cost electronic control systems for taking precision agriculture to small farms and multiple cropping systems.
- Multiple use of low an degraded quality water for agriculture & allied activities.

- Understanding the effects of climate change on agriculture through an integrated approach to air, water soil and plants.
- Enhancing nutrients use efficiency in buffaloes and cattle by manipulating rumen microbes and enhancing nutrient qualities of low-value fodders.
- Strategic research into overcoming long-standing non-tariff barriers against major Indian agricultural exports, plant animals and fish products.

**(d) Other Important Topics**

- Novel value-addition, processing and storage methods for agricultural products and by-products.
- Development of state-of-the art animal disease surveillance and control systems.

**2.7. Processes of Awarding Research Proposal under SPGR**

BARC shall proceed for invitation, evaluation and award of research proposal following the steps outlined in Fig 4. BARC may outsource the SPGR program to ensure quality and timely completion of entire process.

**2.7.1. Determination of Research Themes**

BARC will determine priority research areas and also assist the institutional capacities of the ARIs for conducting SPGR. Based on the assessment of the capacity of the different institutions BARC will identify different areas for different institutions and for diversified commodities. A prepared list of qualified institutions for different studies and its approval by the Executive Council (EC) of BARC will be needed.

BARC will form different Technical Committees (TC) for different areas with the concerned Member Director of BARC as the Convener. The TC will be composed of five members including two independent subject matter specialists. TC may determine suitable honorarium for the expert members.

The TC will determine research theme and priority areas through series of consultation, dialogue and review of ARIs programs with different stakeholders. TC will prepare elaborate list of thematic areas with priorities and present the report to the EC of BARC for approval.

**2.7.2. Invitation of Proposal from Qualified Institutes and Universities**

Based on approved themes BARC will invite proposal from the list of qualified institutes. The proposal shall be submitted in the specific format (Annex-2).

**2.7.3. Proposal Evaluation**

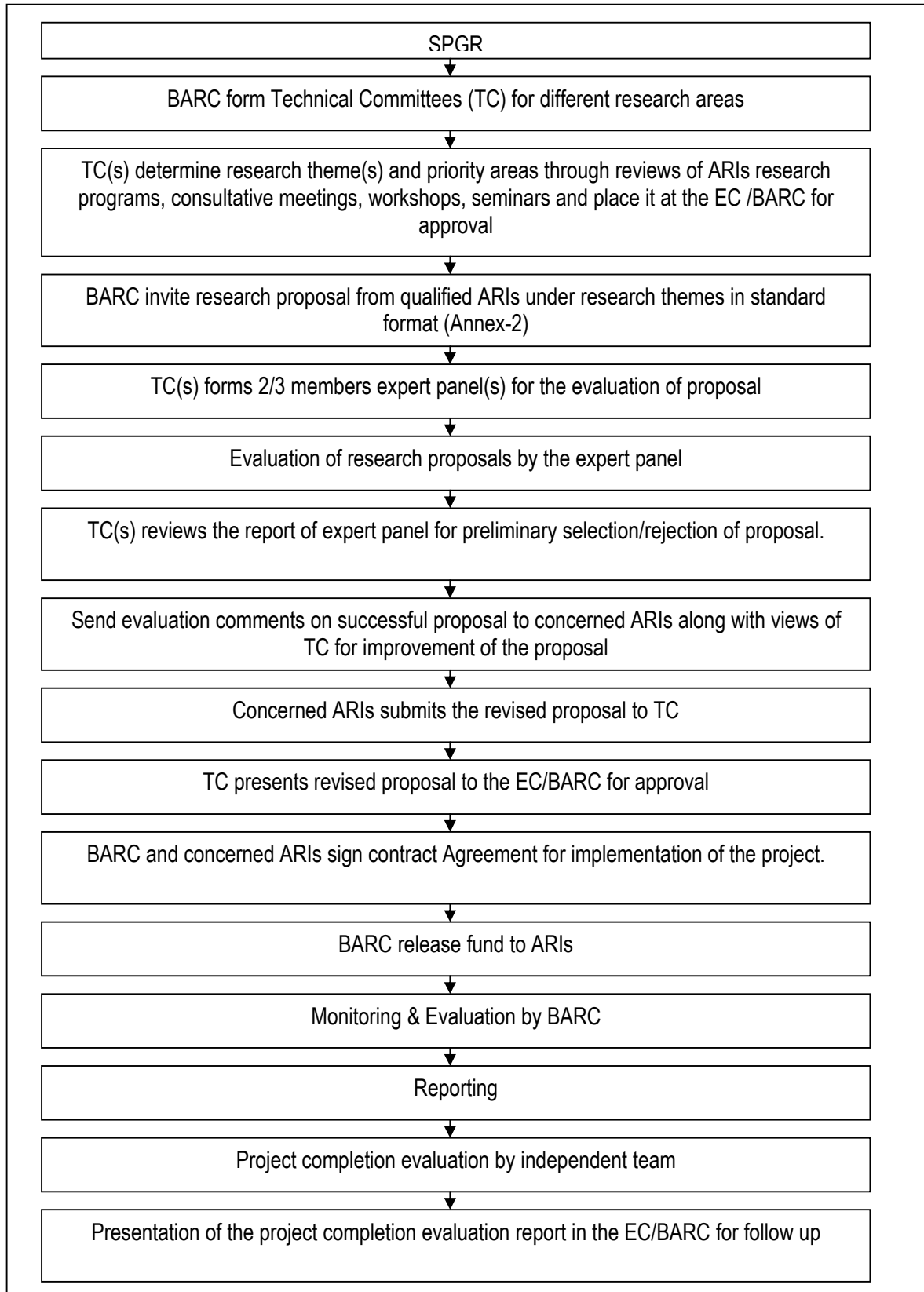
The TC will form 2/3 member expert panel for the evaluation of each proposal.

**Project Proposal Evaluation Criteria**

SPGR reviewers will review the full proposal of the project. At this time they are expected to make narrative statement about the following criteria and assign a score ranging from lowest 0 to highest 10 to each of the criteria:

- i) Review of related studies and literature
- ii) Soundness of technical program and its relevance to expected output
- iii) Competence of investigators and their institutions
- iv) Probability of project success in stipulated time, available resources and under apprehended risks; benefit-cost, and ex-ante analysis
- v) Significance of problem and the project's contribution to solve the problem.
- vi) Immediate impact of the project on productivity and poverty reduction and its measurement mechanism
- vii) Project activity and methodological soundness
- viii) Logical Framework and its use in project performance evaluation
- ix) Uptake pathways of the results
- x) Scientific quality of the project design and description

Fig.4: Processes of awarding research proposals under SPGR



#### 2.7.4. Proposal Approval and Awarding

Executive Council (EC) of BARC shall approve the proposal after the TC presents the revised proposal. The TC shall give its opinion on the priority, suitability and capacity of the implementing agency. After the approval BARC and implementing agency shall sign a Memorandum of Understanding (MOU). A draft MOU is given in Annex-3.

#### 2.8. Monitoring and Evaluation

Team of professionals including finance and administration shall conduct periodic monitoring of the project performance. There will be desk and field monitoring including technical and financial aspects. The standard formats provided in the Attachment A-C will be used for monitoring.

After the completion of project an independent team of experts appointed by BARC shall make performance evaluation and submit evaluation report to Convener, TC/BARC. The Convener, TC will present the report to EC/BARC for any follow up activities.

#### 2.9. Reports

The management of the research project involves preparation and submission of the following reports.

##### Periodical report

A six-monthly report containing technical progress and quarterly financial report to be prepared by the Principal Investigator/Co-investigator. The report will be endorsed by the Head of the institutions for submission to the BARC. Submission of an acceptable six-monthly report 30 days after end of the period is a requirement for release of subsequent funds. The standard reporting format is attached.

##### Annual report

The annual report shall be submitted in required number of copies to the BARC within 30 days from the end of the project year. In the case of coordinated program, one copy each of the component reports should be sent by the Principal Investigator and Co-Investigator to the BARC. After receiving feedback (if any) from BARC, the Principal Investigator shall submit the integrated report in required number of copies to BARC within 15 days after the end of the fiscal year.

##### Completion report

A draft report of the research project shall be prepared by the Principal Investigator and submitted to the BARC at least one month prior to the expiry of the project. After getting feedback/comment (if any) from the BARC, the Principal Investigator shall submit minimum 10 copies of the final report.

For the coordinated project, the Co-Investigator shall submit draft reports to the Principal Investigator of the project.

The Principal Investigator shall then compile and submit a draft copy of the integrated report to the BARC. BARC shall inform of its comment (if any) to the Principal Investigator within 10 days of the receipt of the draft report. The Principal Investigator shall then finalize the report and submit 10 copies to the BARC before the expiry of the project. The copies are to be kept for evaluation and library use by the BARC.

## 2.10 Fiduciary and other relevant issues

**Project Personnel:** Sub-project submitted for SPGR may include hiring personnel for specialized research and support works. Their remuneration will be as follows:

Research Personnel	:	Maximum Tk. 60,000/- per month (will be fixed based on qualification and experience)
Support Staff	:	Maximum Tk. 20,000/- per month (will be fixed as per category)

The actual remuneration will be determined by the proposal evaluation committee of the project depending on the qualification and work experience of proposed research and support workers. The remuneration of support staff should have relevancy with the remuneration described in the DPP (page 122).

**Training allowance:** The cost for SPGR related training and higher studies will be borne from SPGR fund. The training programs will be planned through consultation process in national workshop. The allowances for training and higher studies will be as follows as per DPP and also office memorandum of BARC vide G Avim/ m: c: (C I A\_)/ 8/32/2008/29)

Subject		Allowance in Tk.
1. Monthly stipend for Ph. D ( in service)	:	10,000/-
2. Monthly stipend for MS ( in service)	:	6,000/-
3. Daily allowance for trainees	:	
(a) Officer	:	500/-
(b) Staff	:	400/-
(c) Farmer	:	200/-
4. Daily allowance for support staff	:	100/-
5. (a) Remuneration for course conductor (per hour class)	:	500-1000 (Maximum)
(b) Allowance for course coordinator	:	500-2000 (maximum)

A Ph. D student and a master student will get Tk. 2, 00,000/- (maximum) and Tk. 75,000/- (maximum) as research grant. The fund will be given directly to the University / Professor.

A full time Ph. D student and a full time master student who are not in service or getting any financial support from any source will get Tk. 15,000/- and Tk. 10,000/- per month respectively as fellow provided that the provision should be included in the SPGR sub-project.

**TA/DA:** Consultants/Experts/Members of teams and committees formed by the project authorities will get actual TA for their visit outside Dhaka. In addition, they will also get Tk. 1000/= as DA (Including Food and Lodging) for each over night stay. In special circumstances reasonable actual accommodation and actual other expenses will be reimbursed based on submitted documents. Deputed Govt. Officers will get TA-DA/Actual expenses as per government rules from project or agencies. KGF will operate/device their own TA/DA procedures approved by their Board. TA/DA will be paid from SPGR fund for SPGR related activities.

**Sitting allowance:** Members of committees formed for SPGR related work will get sitting allowance from SPGR fund at the rate of Tk. 1000/- for each meeting.

**Field Monitoring:** Any cost other than TA/DA incurred during field monitoring SPGR activities will be paid from SPGR fund. The actual cost will be paid.

**Honorium / Remuneration:** Personnel of BARC involved in SPGR related activities will be given yearly honorium and remuneration from SPGR fund as admissible by GoB rule.

**Technical Specification:** Person(s) preparing technical specification for SPGR equipment and accessories will get Tk.5000/-for each equipment. Person(s) evaluating technical specification during bid evaluation and verifying specified quality during reception of equipment will also get Tk.5000/-for each equipment including spares and accessories. Payment will be maid from SPGR equipment fund.

**National Training/ Workshop/ Seminar/ Conference/ Meeting:** The budget of National Workshop, Seminars and Training should not exceed Tk. 750/= for each participant for lunch, dinner morning and afternoon tea, and sitting allowance per day. Logistic support including bag, folder, writing pad, ball pen, eraser, marker etc. should not exceed Tk. 1000. Actual amount will be determined by PD for PCU, Directors for PIUs, ED for KGF and MD for Hortex. Resource person will get Taka 750/= (including handout cost) for each one hour lecture. The cost of National Training/ Workshop/ Seminar/ Conference/ Meeting arranged in relation with SPGR activities will be borne from SPGR fund.

**Honorium for Principal Investigator and Investigators of SPGR sub-project:** Principal Investigator and Investigators of SPGR sub-project will get yearly honorium at the rate as admissible by GoB rule. Person(s) involved in the SPGR sub-project for financial management and procurement and assisting in technical activities may also be given honorium. However, no one is allowed to draw honorium from more than one project.

**Honorium for project proposal and achievement evaluation:** Honorium will be given from SPGR fund to persons evaluating project proposal and achievement at the rate of Tk. 5000/- for each work for SPGR sub- project and Tk. 3000/- for CGP sub- project.

### 3.0. COMPETITIVE GRANTS PROGRAM (CGP)

#### RATIONALE

Agriculture research in Bangladesh is still the responsibility of the public sector institutions and Universities. Private sector initiatives are almost negligible. Higher agricultural productivity is an important component of the rural development strategy for raising farm income, reducing poverty and making agriculture more competitive in the global market. Generation, validation testing and transfer of appropriate production and post-harvest technologies to farmers is crucial to raising agricultural productivity. It is essential to create a competitive environment in the agriculture sector harmonizing the role of public and private sector institutions.

In this context, commencement of a Competitive Grants Program (CGP) would provide an effective mechanism for funding priority agricultural research across different sub-sectors. This mechanism is now increasingly used by many countries to finance and manage agricultural research. Under this system, research providers are selected on a competitive basis through public announcement and peer review of proposals. Potential benefits of such an approach will therefore include;

- Expansion of agricultural research service providers from a predominant reliance on the public sector ARIs to include other agencies, e.g. NGOs, Universities, the private sector
- Improved research quality, innovation and accountability;
- Funding of proposals with time-bound outcomes;
- Stability of funding through diversification of sources of funding, including the private sector, farmer's organizations, NGOs and external donors;
- Redirecting of research towards demand-driven high priority areas; and
- Encouragement to multi-disciplinary and multi-institutional partnerships.

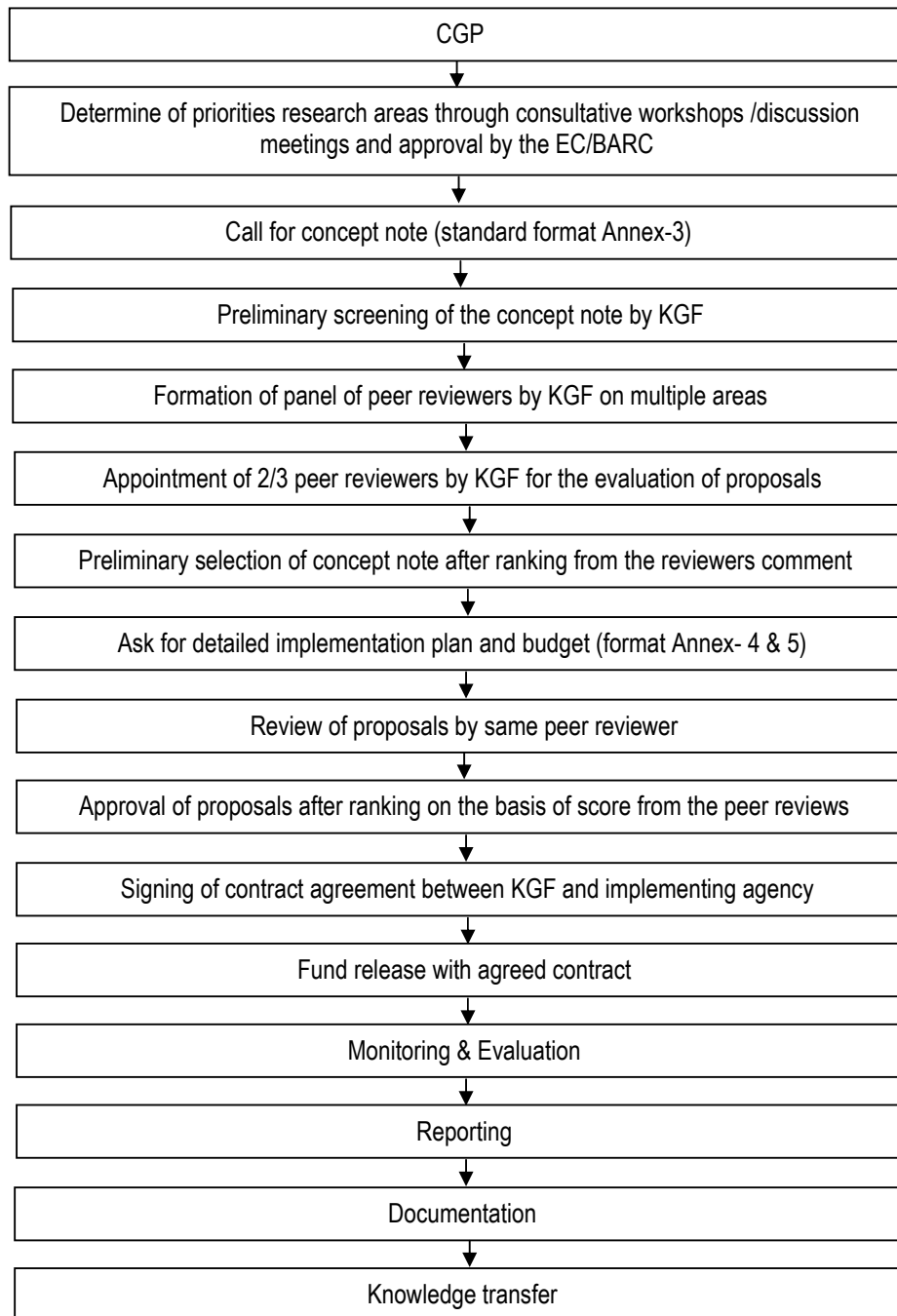
#### 3.1. Management of Competitive Grants Program (CGP)

In order to foster independent character of private sector support to agriculture research a foundation with endowment fund will be established. This will be called Krishi Gabeshana Foundation (KGF), managed by an independent Board of Directors. The processes of awarding CGP are provided in the Fig-5

##### 3.1.1. Krishi Gobeshana Foundation (KGF)

GOB established an independent Krishi Gobeshana Foundation (KGF) having general Body (GB) and Board of Directors (BOD). GB will develop a vision and strategy and also provide guidance to implement the mandate in order to achieve the objective of foundation. BOD will be able to frame its own rules and devise operating procedures for the foundation. KGF shall manage the Competitive Grants Program (CGP) with objectivity and transparency. KGF will invite research proposals from relevant organizations with capacity to under take such work, including NARS institutes, universities, NGOs, and the private sector. By opening the CGP to non-traditional partners, a more competitive pluralistic institutional structure for the NARS will be facilitated. The priority research themes for competitive funding will be demand-led and identified through a participatory process involving farmers and others stakeholders.

Fig. 5 Processing of Awarding CGP



The independent KGF will manage and approve the CGP. The thematic areas for CGP research will be identified through a priority setting process to be coordinated by BARC, and will also include the short term researchable issues identified at the time of preparing the micro-extension plans for the participating unions and reflected in the Upazilla extension plans. The CGP themes will be finalized in Joint Annual Workshops of BARC and KGF. Since this process may take some time, the themes for the first lot of CGP will be identified through a consultative process involving all stakeholders- public and private sector research providers, farmers, extensionists and policy makers; and subsequently prioritized for financing through a joint review by BARC and KGF.

As an independent foundation/agency, the KGF Board will be responsible and powered to approve any adjustment/reallocations/new items etc. of the budget for investment, operation, maintenance etc. for efficient and effective functioning of KGF. The KGF Board is the final authority for any decision for the successful operation of the CGP and the KGF.

3.1.2. The CGP will fund location-specific, pre-identified, high priority, multi-disciplinary, short to medium term, problem-solving research and development. It would help to develop a more pluralistic research system by opening the CGP to the NARS institutes, universities, other research institutes, NGOs, and through co-financing, to the private sector and the international institutes with excellence in agricultural research. The research themes to be supported would be those that are crucial to bridge the yield gaps, respond to the problems identified through micro level priorities and address other demand-based issues for improving agricultural productivity and farm income. Major focus would be on on-farm applied and adaptive research, including marketing, socio-economic aspects and value addition.

3.1.3. To ensure sustainability and stability of funding for the CGP, an endowment Trust Fund would need to be created to generate an income stream of sufficient size to finance CGP research and a portion of the operational costs of the agency established to manage the CGP. External assistance would be required to establish the Trust Fund of a size commensurate with needs of the priority research programs to be financed through the competitive process.

The NATP phase 1 will finance the CGP and its implementation initially until endowment fund of taka 350,00 lakh for KGF is established and ready for funding CGP. The project (NATP Phase-1) will finance costs of KGF secretariat, investment and operational costs, including incremental operating costs, contractual staff (e.g. research associates), goods, including need-based small equipment, training, travel, etc.

### 3.2. Determining Research Priorities

The competition for fund under CGP will be open to all public, private and non-governmental organizations with required competence and necessary infrastructure. This will encourage entry of institutions outside NARS into research on regional problems of multi-dimensional agro-ecosystems of the country.

Specific priority areas of research and pilot testing of technologies already developed for diffusion will be selected through a screening-screening process of consultative workshops and discussion meetings to be arranged by BARC for different thematic areas. Research priorities will revolve around the most important problems of the countries. There could be many issues but not limited to the following important ones:

- Integrated Crop Management (ICM)
- Integrated Plant Nutrient Management (IPNM)
- Integrated Pest Management (IPM)
- Biodiversity
- Post-harvest Technologies and Value Addition
- Agro-processing and Marketing
- Natural Resource Management
- Salinity Management
- Drought Management
- Water Management
- Vertical Improvement and Management of High Value Crops.
- Extension and Technology transfer

- Agri-business management
- Adoption to climate changes

Carefully selected scientists, extension personnel, innovative farmers, NGO representatives, agribusiness representatives and policy planners will join workshops and discussion meetings of different thematic areas. Each group will come out with specific recommendations for on-farm research/adaptive research proposals. Such thematic research proposals will be reviewed and approved by Executive Council of BARC.

### 3.3. Call for Concept Note

Public announcement will be made inviting Concept Notes for research under CGP. The Concept Notes have to be consistent with the developmental needs and priorities identified through consultative workshops arranged by KGF and approved by BARC. The public Announcement will contain information as Guidelines and Standard Format for submission of Concept Note.

#### 3.3.1. Guidelines for preparation of Concept Notes:

Rationale (Concise Statements 2-3 pages covering the following points)

- What is the scope and nature of the problem that you wish to conduct research?
- Importance of the problem, particularly in the context of regional production system development priorities and how it solves the production system problems?
- Explain how the proposed research relates to NATP objectives and criteria.

Objectives (Provide a concise list of key objectives to be achieved)

- (i) Intermediate research findings, (ii) New methodologies/Procedures, and (iii) final outcome and likely impact.
- List what the research would seek to achieve in terms of institutional objectives of NATP, e.g. in terms of developing synergies through collaboration, links with advanced centres of research, learning, education, greater participation of private sector, NGOs or farmers themselves, etc.

Review of Literature

- It should include pertinent work done in Bangladesh/abroad.

Methodologies

- Methodology may be cited by reference. Use only the names if widely known techniques are used. Give an outline if the methods are to be modified.
- Give details of experimental designs/statistical methods.

Work Program

- provide detailed work plan for each objective
- Provide an activity chart for each block of six months and fix milestones for each centre/site.
- Describe follow-up work or research to be done after proposed work is completed with likely funding needs and sources etc.

## Indicators

- Principal Investigator (PI) have to provide a list of process and impact indicators. Process indicators will indicate as to how actively milestones will be achieved and the steps involved. Impact indicators will provide for assessment and evaluation of the impact of research on the socio-economic conditions of farmers, production/productivity, cost of cultivation etc. The indicators provided by the researchers in the proposal, and those recommended by the reviewers and approved will be used to evaluate the project outputs including its quality.

## Budget

- Budget should indicate year-wise and showing head-wise institutional allocations. Budget statement should clearly, indicate the following: (i) Costs to be met by KGF; (ii) Other costs, indicating sources of funding.

## Manner in which project was developed

PIs should certify that he/she had-in-depth consultation with the listed partners and the proposal had been developed with full involvement of the Cooperating Agencies.

## Thematic Areas

Thematic areas for research will be available on request. PI should select one topic of research. The title of the topic will be decided by the PI.

**Personnel:** The description should include, for each of the sub-lines used in the budget form, names of persons, unit cost and duration of each assignment. Monthly rates should be determined, justified and documented on the basis of track record, evidence of previous remuneration and experience in assignments comparable in duration, content and location.

Where no track record can be made available, the following monthly unit rates inclusive of all benefits and taxes can be allowed:

- Principal Investigator: up to Tk 35,000;
- Co-Investigator: up to Tk 25,000;
- Research Assistant: up to Taka 15,000;
- Research Fellow: up to Taka 15,000 for full time Ph.D students and up to Taka 10,000 for full time Master students.

The KGF time to time may review the rates.

**Travel expenses:** Travel expenses within Bangladesh directly related to the execution of the research can be included under this budget line item.

**Operational expenses:** Under this budget line, cost of rent, consumables, utilities, communication and costs for other items related to research activities can be included.

**Workshops and Training:** This budget line includes costs related to the organization and/or participation in workshops, seminars and training activities. For each activity, a possible title and a tentative budget should be indicated.

**Other direct costs:** This covers expenditures directly related to the execution of the research and not elsewhere specified.

**Cost eligibility:** The following costs are not eligible: debts and provisions for losses or debts; interests owed; items already funded in another framework or by previous contractual arrangements under the scheme; purchases of land or buildings and other fixed equipment; currency exchange losses; credits to third parties.

**Eligible indirect costs (Overheads):** A lump sum not exceeding 12% of the total amount of eligible costs may be claimed as indirect cost to cover the administrative overheads incurred by the grant recipient institutions. The lump sum may be paid only once, i.e., it can be shared among collaborating institutions but cannot be charged by the main institution on the overhead charged by a collaborating institution.

### 3.4. Format for Submission of Concept Note

All proposals must be made as per Standard Format shown in Annex-4. Proposals should be prepared in English and typed on A4 size paper. The Format has three parts:

PART A : Summary

PART B : Concept Note Content

PART C : Declaration of Eligibility

### 3.5. Preliminary Screening of Concept Notes by KGF

For screening and reviewing of Concept Notes received through public announcement, KGF will appoint peer reviewers. A panel of 2-3 reviewers will be appointed for reviewing each Concept Note.

#### 3.5.1. Screening Criteria of Concept Notes by Reviewers

Research proposals received by KGF will be reviewed and evaluated by peer reviews on the basis of criteria as shown in Table-1.

**Table-1: Criteria for Scoring of Concept Note.**

Project Title:		Code No.		
SI No.	Indicators	Full Score	Score Obtain	Comment
1.	<p><u>Relevance of the proposal to the topic:</u>            Questions to be justified:            Does the concept address a high priority problem in the identified research theme            (i) Does the concept address a demand-led problem solving issue?            (iii) Are expected outputs/results well-defined and achievable in stipulated period?            (iv) Is it intended to promote research extension-farmer linkages?            (v) Will it strengthen private-public partnership?</p>	10		

2.	<u>Effectiveness of the expected results:</u> Questions to be justified: (vi) Will it increase farm productivity and reduce yield gap ? (vii) Will it promote inter-institutional collaboration? (viii) Are the beneficiary group well-defined and the uptake pathway well explained? (ix) Have the beneficiaries group and uptake pathway institutions participated or contacted in designing the concept?	10		
3.	<u>Feasibility and Consistency:</u> The proposed work plan in achieving the stated objectives(s) making efficient and cost effective use of the allocated resources(human and financial), within the proposed time frame and methodology, without duplication of efforts.	10		
4.	<u>Technical Soundness of the Proposal:</u> Considering, inter alia, clarity in the identification of the problem being addressed and appropriateness of the proposed methodology.	5		
5.	<u>Technical Competency:</u> Technical competence will be assessed taking into account their academic and research background and relevant experiences. Implementation capacity will be assessed against the demonstrated ability of the institution to carry out research of similar nature and size, and availability of facilities and capacities required for executing the research.	15		
6.	<u>Risks and Assumptions:</u> If the proposal has taken into considerations the risks and assumptions?	5		
7.	<u>Socio-economic and Gender Issues:</u> Whether or not the socio-economic and gender issues considered?	5		
8.	<u>Environmental Issues:</u> How the environmental issues and implications have been addressed?	5		
9.	<u>Multi-disciplinary Nature of the Proposal:</u> Proposed effectiveness in promoting collaboration and partnerships among stakeholders.	5		
10.	<u>Indicative Budget:</u> Is proposed budget realistic?	10		
11.	Detailed Budget Summary	10		
12.	Implementation Plan	10		
	Total	100		

Proposals that do not score at least 50% will be rejected and not assessed further.

**Recommendation on Concept Note:**

Qualified and admissible for 2<sup>nd</sup> round call. Please tick one Yes No

Name

Signature

Date

Recommendation on overall proposal after review for 2<sup>nd</sup> round : Admissible and Qualified

Yes No

Name

Signature

Date.

**3.6. Implementation Plan and Detailed Budgets**

KGF will request the PIs of all admissible and qualified proposals to submit detailed Budget Summary Shown in Annex-5 and Implementation plan in Annex-6.

3.6.1. Budget for collaborating institution(s) (for each collaborative institution, please use a separate table and produce a separate detailed description as per point 3.6 and 3.6.2):

3.6.2. Detailed description of individual line items:

Personnel:

Travel expenses:

Operational expenses:

Workshops, consultation and trainings:

Publications:

Other direct costs:

Eligible indirect costs (Overheads: not exceeding 12% of the total cost):

### 3.7. Review of Proposals

After expiration of deadline for submission of proposals for Budget Summary and Implementation Plan, all proposals received by KGF, will be reviewed by the same panel of reviewers appointed for reviewing Concept Notes. Results of scoring will be added to item no 11 and 12 of the scoring Format for evaluating Concept Notes(Table-1).

Reviewers will make recommendations as to the admissibility of each proposal based on overall evaluation scores.

### 3.8. Ranking and Approval of Proposals

The proposals in each sub-sector thematic areas will be ranked based on quality and only those proposals will be finally selected for funding as per procedures to be mentioned in the contract. The implementation progress of the approved research projects will be regularly monitored against agreed targets.

### 3.9 Contract Signing

The Principal Investigator and representative of the partner organization, if any and the KGF are required to enter into a contract by signing a Memorandum Of Understanding (MOU) for compliance of all norms, rules and obligations contained in the MOU for smooth implementation of the Research project. A Draft Model of a MOU is provided in Annex-7.

### 3.10. CGP Outsourcing

The activities of CGP involving monitoring, procurement, maintenance of equipments and evaluation of performance for better implementation of the funded project .As the KGF does not have enough manpower to perform these activities it may however require outsourcing the activities. But KGF will supervise the activities of the hired consulting firm. KGF Board will be the final approval authority for all matters relating to KGF & CGP implementation and operation.

## 4.0. ENHANCEMENT OF RESEARCH INSTITUTIONAL EFFICIENCY

### RATIONALE

The goal of National Agricultural Plan (NAP) and Poverty Reduction Strategy Paper (PRSP) of GOB is to increase agricultural productivity ensuring dependable food security and reducing poverty by 50% within 2015. A team of skilled scientists in different disciplines of agricultural research is essential in order to generate appropriate technologies for contributing in achieving the above objectives. Agricultural research system should not be treated just like any other routine file work of the administrative department in the civil services. Excellent academic records with improved skill, hard working attitude and creative thinking are essential preconditions for research scientists to generate new knowledge, innovation and technology. Special consideration and arrangements must be made to create a favourable working environment with incentive service structure within which scientists can apply their creative abilities in order to enhance the productivity and innovative capability of the NARS. It is important to upgrade the HRMS and prepare a job specific skill based training plan for human resource development.

National Agricultural Research System (NARS) includes 10 (Ten) Agricultural Research Institutes (ARIs) of the country with Bangladesh Agricultural Research Council (BARC) as the apex body. The mandate, organizational structure, outreach stations and human resources vary from institute to institute. Each institute has developed its own structure and facilities and they have their own service rules. Scientific manpower under NARS in 2001 is presented in the Table-2.

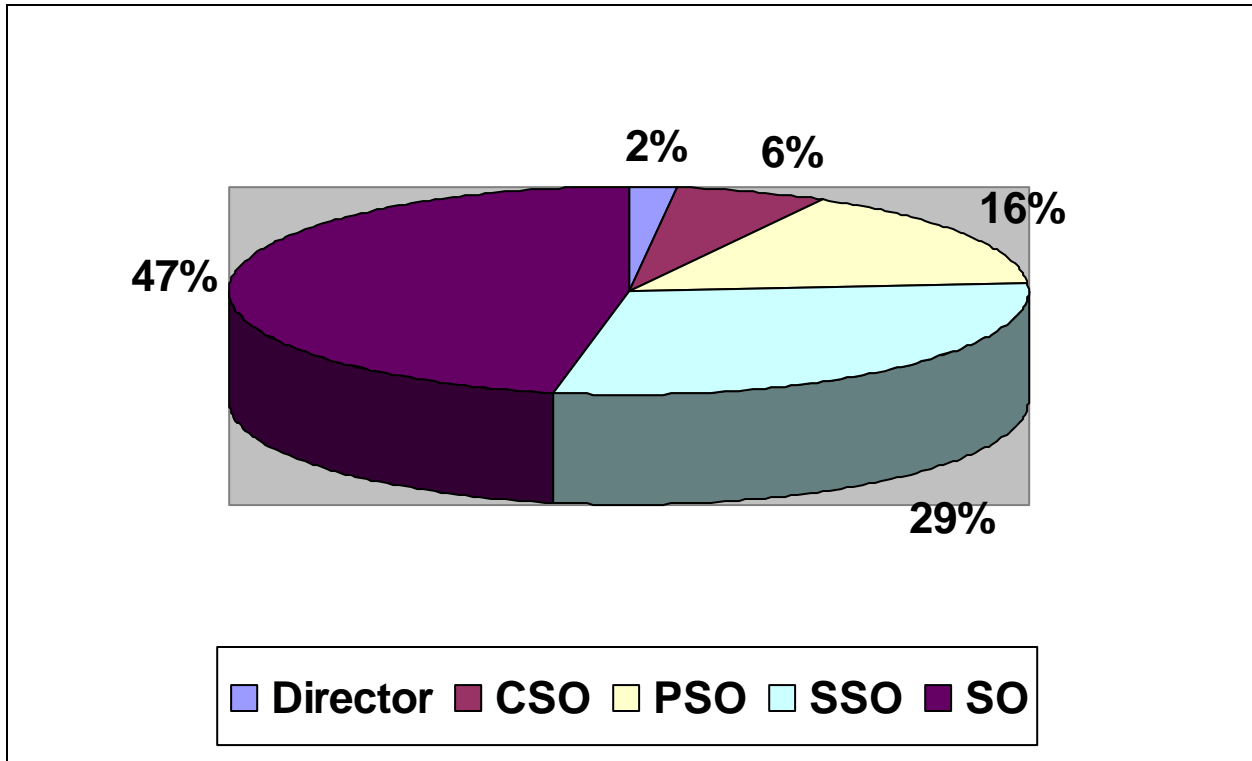
Table-2: Post-wise present scientific manpower under NARS in Bangladesh (June, 2001)

Sl. No.	Organization	DG	Director	CSO	PSO	SSO	SO	Total	Remarks
1.	BARI	1	8	12	65	176	328	590	
2.	BIRRI	1	2	24	39	74	58	198	
3.	BJRI	1	2	17	27	32	51	130	
4.	BINA	1	2	9	14	19	33	78	
5.	BSRI	1	1	6	24	18	10	60	
6.	BFRI	-	1	2	13	23	40	79	
7.	BTRI	-	1	2	7	11	14	35	
8.	FRI	1	2	4	6	22	56	91	
9.	BLRI	1	-	2+Dir-1=3	5	22	17	48	
10.	SRDI	-	1	2	15	34	109	161	
11.	BARC	Ex-Chair-1	MD-7	7+Dir-4=11	15	-	-	34	
	Total	8 (0.52%)	27 (1.80%)	92 (6.12%)	230 (15.29%)	431 (28.66%)	716 (46.61%)	1504	

NB: Ex. Chair=Executive Chairman, DG= Director General, MD=Member Director, Dir=Director, CSO=Chief Scientific Officer, PSO=Principal Scientific Officer, SSO= Senior Scientific Officer, SO=Scientific Officer.

Total scientific manpower of NARS are 1439 and their distribution is shown in Fig.6.

Fig-6: Distribution of Scientific Manpower by different ranks.



BARI is the largest institute with 590 including 328 scientific officers. BIRRI has about 200 scientists with 24 CSO and 39 PSOs. The training wing of BARC has developed a HRD plan upto 2020 (Table 3, 4, 5).

**Table-3 : NARS scientific manpower, its retirement and development plan for the year 2006-2010**

Sl. No.	Organization	Scientific Position (2005)	Ph.D. Position (2005)	Status of retirement			Ph.D Needed from 2006-2010	Post Doc. (10%) from 2006-2010	Short-term training (30%) from 2006-2010	Study tour/ seminar/ workshop from 2006-2010	Remarks
				Ph.D.	MS	Total					
1	2	3	4	5	6	7	8	9	10	11	12
1	BARI	626	165(26%)	20	59	79	43	15	175	54	Obtain 30% Ph.D. increase 4%
2	BRRRI	263	62(24%)	19	13	32	35	6	70	48	Obtain 30% Ph.D. increase 6%
3	BJRI	166	14(8%)	3	15	18	22	1	47	26	Obtain 20% Ph.D. increase 12%
4	BINA	107	24(22%)	8	3	11	16	2	27	30	Obtain 30% Ph.D. increase 8%
5	BSRI	106	19(18%)	4	4	8	17	2	29	16	Obtain 30% Ph.D. increase 12%
6	BFRI	93	15(16%)	5	27	32	9	2	26	10	Obtain 20% Ph.D. increase 4%
7	BTRI	36	2(6%)	2	5	7	7	-	11	8	Obtain 20% Ph.D. increase 14%
8	FRI	200	40(20%)	2	-	2	22	4	51	16	Obtain 30% Ph.D. increase (10%)
9	BLRI	150	31(21%)	4	-	4	18	3	37	10	Obtain 30% Ph.D. increase( 9%)
10	SRDI	191	2(1%)	-	17	17	17	-	50	12	Obtain 10% Ph.D. increase 8%
11	BARC	41	21(51%)	11	8	19	11	2	6	32	Retained (51%)
	Total	1979	395 (20%)	78	151	229	217(11%)	37	529	262	

NB: Increase percent of Ph.D. as per requirement of the institutes, Post Doc. 10% of Ph.Ds. Short-term training 30% of PSO to SO provisions, Study tour/seminar/workshop 200% of CSO and above provisions including junior scientists for attending seminar/workshop abroad in their respective fields.

**Table-4 : NARS scientific manpower, its retirement and development plan for the year 2011-2015**

Sl. No.	Organization	Scientific Position	Ph.D. Position (2010)	Status of retirement			Ph.D Needed from 2011-2015	Post Doc. (10%) from 2011-2015	Short-term training (30%) from 2011-2015	Study tour/ seminar/ workshop from 2011-2015	Remarks
				Ph.D.	MS	Total					
1	2	3	4	5	6	7	8	9	10	11	12
1	BARI	626	188(30%)	31	50	81	62(10%)	16	175	54	Increase 5% Ph.D.
2	BRRRI	263	78(30%)	18	14	32	31(12%)	6	71	48	Increase 5% Ph.D.
3	BJRI	166	33(20%)	5	15	20	11(8%)	2	47	26	Increase 5% Ph.D.
4	BINA	107	32(30%)	9	4	13	13(13%)	2	27	28	Increase 5% Ph.D.
5	BSRI	106	32(30%)	3	5	8	8(8%)	2	29	16	Increase 5% Ph.D.
6	BFRI	93	19(20%)	5	18	23	10(10%)	2	26	10	Increase 5% Ph.D.
7	BTRI	36	7(20%)	2	5	7	4(10%)	1	10	10	Increase 5% Ph.D.
8	FRI	200	60(30%)	6	4	10	16(8%)	4	50	16	Increase 5% Ph.D.
9	BLRI	150	45(30%)	8	1	9	18(10%)	3	36	8	Increase 5% Ph.D.
10	SRDI	235	19(8%)	2	19	21	12(6%)	1	48	12	Increase 5% Ph.D.
11	BARC	41	21(60%)	8	6	14	10(28%)	2	6	30	Increase 5% Ph.D.
	Total	1979	534(27%)	97	141	238	195(10%)	41	525	258	

NB: Increase 5% Ph.D. level provisions, Post Doc. 10% of Ph.Ds. Short-term training 30% of PSO to SO provisions, Study tour/seminar/workshop 200% of CSO and above provisions including junior scientists for attending seminar/workshop abroad in their respective fields.

Table-5 : NARS scientific manpower, its retirement and development plan for the year 2016-2020

Sl. No.	Organization	Scientific Position	Ph.D. Position (2015)	Status of retirement			Ph. D. Needed from 2016-2020	Post Doc. (10%) from 2016-2020	Short-term training (30%) from 2016-2020	Study tour/ seminar/ workshop from 2016-2020	Remarks
				Ph.D.	MS	Total					
1	2	3	4	5	6	7	8	9	10	11	12
1	BARI	626	219(35%)	32	39	71	63(10%)	18	175	54	Increase 5% Ph.D.
2	BARRI	263	91(35%)	17	16	31	30(11%)	7	70	48	Increase 5% Ph.D.
3	BJRI	166	48(35%)	7	14	21	15(9%)	3	45	26	Increase 5% Ph.D.
4	BINA	107	37(35%)	9	8	17	13(13%)	3	28	30	Increase 5% Ph.D.
5	BSRI	106	37(35%)	4	9	13	9(9%)	3	29	16	Increase 5% Ph.D.
6	BFRI	93	24(25%)	5	27	32	10(10%)	2	26	10	Increase 5% Ph.D.
7	BTRI	36	9(25%)	2	5	7	4(10%)	1	11	10	Increase 5% Ph.D.
8	FRI	200	70(35%)	14	19	33	24(12%)	6	51	16	Increase 5% Ph.D.
9	BLRI	150	53(35%)	11	16	27	19(12%)	4	37	10	Increase 5% Ph.D.
10	SRDI	235	29(15%)	5	14	19	15(8%)	2	50	12	Increase 5% Ph.D.
11	BARC	41	23(65%)	7	3	10	9(25%)	2	7	40	Increase 5% Ph.D.
	Total	1979	640(32%)	113	170	283	211(11%)	51	529	272	

NB: Increase 5% Ph.D. level provisions, Post Doc. 10% of Ph.Ds. Short-term training 30% of PSO to SO provisions, Study tour/seminar/workshop 200% of CSO and above provisions including junior scientists for attending seminar/workshop abroad in their respective fields.

#### 4.1. NARS scientific manpower development projection for the year 2006-2010, 2011-2015 & 2016-2020.

It is expected in the year 2005 the total scientific manpower in the NARS would be 1979 and Ph. D would be 395 (20%). It is evident that by the year 2010 a total number of 229 scientific personnel would normally retire from the NARS in which there will be 78 Ph. D holders. To face the future challenges in the field of agriculture research, it is proposed that at least 30% of Ph. D level scientists should be retained in some research institutes on the basis of national interest. By the year 2010, it expected that total number of Ph.D would be 534 out of 1979 scientific manpower. It is obvious that in the year 2011- 2015 about 238 scientists personnel would be retiring, among them 97 are Ph.D scientists. To maintain Ph.D level plus 5% increase of Ph.D level scientists, it is estimated that a total of 195 Ph.D degree holders will be needed for the stated 5 year period in the NARS. By the year 2015 the total number of Ph.D level scientists would be 640 and Post Doctoral training would be encourage for strengthening the scientific output and meet the national demand. It is observed that during the period of 2016 – 2020 the total retiring scientific manpower would be about 283. Among them 113 would be at Ph.D level scientists. To fill in the vacant Ph.D would be needed for five years. It is also mentioned here that during the said period there would be requirement of Post Doc @ 10% over the Ph.D and that would be 51 in number for NARS.

##### 4.1.1. HRD Programs under NATP

The skill of the scientists are the driving forces of the NARS. The HRD training program would upgrade the existing knowledge and reduce the skill gaps. But the appropriate Human Resource Management System (HRMS) would ensure engagement of right number of scientists and entry of qualified scientists into the NARS. Besides, a good HRMS provides attractive incentive package, create research-friendly environment, recognize the outstanding works, provides career development opportunities and promote the scientists based on merit and performance. An effective HRMS is critical for a successful and sustainable HRD program of NARS. Without effective HRMS, the investment in HRD will be of little value. Therefore, it is important that the HRMS problems are also to be addressed along with the HRD training program for NARS. There is a HRD program in the NATP which includes in country and international Ph.D, national training and international training/post doctoral fellowship/study visits Table-6). Out of 90 Ph.D slots, there would be 60 national and 30 international. Year wise breakup are given in (Table-6)



#### 4.1.2. Higher Study Leading to Ph.D:

Candidates for PhD will be selected from NARS and project related organizations as per criteria shown in Annex-8. The preference in selecting scholars will be given to agricultural, livestock and fisheries related subjects. Priorities areas will be Breeding, Bio-Technology, Bio-Chemistry, Agricultural Chemistry, Agronomy, Soil Science, Horticulture, Agricultural Economics, Agricultural Statistics, Agricultural Engineering, Entomology, Pathology, Environmental Science, agro-Processing, Farming Systems and Livestock and Fisheries related subjects and any other subject as need may be felt.

#### 4.1.3. National Training

National training will be on foundation training, professional development, management improvement, executive training for senior level scientists and officers, ICT & MIS, Financial Management, Administration Management, and any other field for skill development of scientists and officers.

#### 4.1.4. International Training/ Post Doctoral Fellowship/ Study Visit

Training, short course and post doctoral fellowship will be mainly on specialized field of research, skill development, ICT & MIS, Database development and any other field as need is felt. Study visit will be for knowledge gathering from foreign organization for improvement of management of research administration planning and governance of GOB organizations. Participants will be selected from the persons who are engaged in negotiation, approval, implementation and monitoring of the project.

#### 4.1.5. Management of National and International Training Programs

The training wing of BARC will organize all training programs under NATP. For efficient and timely performance of the entire training programs, BARC may select a firm with long standing reputation on human resource development. The firm should facilitate organizing training programs by the BARC and it must have wide experiences of working with HRD at home and abroad. A suggested criteria for the selection of a firm is provided in the Annex-9.

## **Safeguard Policy Issues**

### **BANGLADESH: Agriculture Technology Project**

1. The project is not expected to have significant adverse environmental and social impacts and has been classified as a Category C project. However, the project does have the potential to offer significant opportunities to enhance environmental and social development objectives. Safeguards Management Plan has been prepared following Social and Environmental Assessments by independent consultants from the Project Preparation Team.

#### **Key Stakeholders and Consultation**

2. Key project stakeholders include the local farming communities ( including women, marginal and small farmers, Adibasis and Charlanders); project functionaries at different levels, associated line department staff ( agriculture, livestock and fisheries); elected representatives, particularly at the union level; NGOs academia and consulting community; input suppliers and producers (traders, fertilizer and seed associations); external donors; and consumers of agricultural, horticultural, milk and fish products associated with project activities.

There have been consultations throughout the project preparation both by the bank Missions as well as by the environmental and social assessment consultants.

#### **Social and Environmental Assessments**

3. Social Assessment comprise: (i) Beneficiary Assessment (BA), (ii) Stakeholder Analysis (SA), (iii) Institutional Analysis; (iv) Impacts Assessments; and (v) Risk Analysis. BA enabled building socio-economic profiles at the National, Upazila, Union and Village levels; the project beneficiaries' assessment on the current status of research, extension and marketing; and their linkages with governance/management mechanisms. SA resulted in identifying stakeholders at different levels – national, district, Upazila, union, village – and mapping the key expectations, issues and concerns, as related to each stakeholder and the sub-groups thereof. Institutional analysis led to documenting and analyzing the existing institutional arrangements ( both in the public as well as non-governmental sectors), conducting a SWOT exercise, and formulating inputs into designing of the decentralized extension delivery system in consultation/ collaboration with the stakeholders. This was followed by impact assessments and risk analysis. The results helped in designing the delivery system and addressing safeguards, thus ensuring positive and sustainable impacts.

4. Environmental Assessment, complemented with Social Assessment, essentially was based on discussions with experts as well as a review of national and international experiences in sustainable agriculture. It identified issues of significance and the impacts thereof. The latter were in two categories: i) short-term immediate, but smaller scale effects: and (ii) long-term impacts with a bearing on sustainability. Draft Environmental management plans have been discussed with multiple stakeholders and their views reflected in the revised versions.

5. Environmental issues: The project has a broad understanding of the issues likely to crop up in the three components. In agricultural research, issues would relate to : (i) crop/cropping pattern changes leading to higher agro-chemical use and soil degradation; (ii) over exploitation of groundwater resulting in

salinity and arsenic contamination: (iii) loss of biodiversity and natural habits; and (iv) bio-prospecting of biologic products, including genetic enhancement and transgenic products. The extension issue relate to: i) handling and application of agro-chemicals; (ii) water management, ground water depletion and water quality: and (iii) solid waste management. Key issues in respect of supply chains are: (i) phyto-sanitary conditions and related safety measures: (ii) agro-chemical handling and their application related quality and health hazards.

6. Social issues: Key social development issues relating to project implementation are: (i) healthy competition coupled with transparency in transactions, particularly in CGP; (ii) participation by researchers, project functionaries, civil society and farming communities; (iii) inclusion, particularly of the poor and vulnerable sections; (iii) mechanisms to foster participatory planning as well as strengthening the related institutions (including farmers' institutions – CIGs, Farmers Field Schools and Women Self Help Groups; (iv) improving linkages with Union, Upazila, and district Project Management Units; (v) NGO enlisting and their performance; (vi) gender – addressing women-specific requirements; and (vii) Information Education and Communication (IEC) campaign to address these issues.

7. Gender: Women in Bangladesh contribute significantly to the economy, both through their remunerative work on farms and through unpaid traditional domestic work. While their role in rice production continues to be sizeable, their involvement in fisheries and livestock is expanding which has earned them recognition as the primary suppliers of protein to the country. They also play a pivotal role in home gardening and homestead production, contributing to household food security. Their roles and functioning provide an opportunity to seek greater off-farm production options. Given these, the project recognizes that the women participation is crucial to the success of the project. Besides understanding their roles, needs and perceptions, women-centric constraints that limit their participation in project implementation and management should also be appreciated. Further, it is well perceived that addressing gender issues will result in benefits that go beyond the spheres of the project, into the household livelihood improvements, in particular, and food and nutritional security, in general.

8. Project's Gender Inclusive Strategy will aim at recognizing women from the farming households as 'farmers/managers' in their own right and accordingly, the following interventions are planned:

- Capacity Building: This will include: (i) training the researchers to identify and respond to women's technology requirements; (ii) gender sensitive training for all the project functionaries at the national, district and sub-district levels, including the contractual partners; (iii) equipping the NGOs in conducting gender analysis and identifying opportunities for intervention, and (iv) developing a cadre of women agriculture workers from among the local farming communities/self help groups/NGOs.
- Women Mobilization: Special efforts will be made for establishing exclusive women groups and providing them opportunities for participation in demonstrations, shouldering responsibility for input supplies, quality control and output marketing. Effort will be made to organize groups that are exclusively of women.
- Technology Support: Focused attention is planned for promotion of agricultural technology adoption and providing marketing support to the women groups.
- Governance: women representation in bodies shouldering responsibility for approval as well as implementation of research proposals and Union/Upazilla Action plans will be promoted.

9. Information, education and communication (IEC): Given that the project's approach heralds a significant departure from the conventional methods, an effective IEC campaign is recognized for the three components. Component 1 will consist of three distinct elements. First, publicizing the 'project' including the details of rules of engagement so as to attract prospective candidates seeking research grants. The program will be designed to dispel apprehensions on the part of non-traditional candidates (private sector, NGOs, universities etc) and create an enabling environment for their participation. Second, an electronic as well as print media based campaign will be undertaken to serve as a repository of the project activities, and to serve as a platform for discussion and information exchange. Third, creation of an information storehouse for easy accesses to off-the shelf as well as prospective technologies. For the other two components, a strategy and implementation action plan, combining a mix of mass as well as inter-personal media, has been developed and will be implemented as a part of the capacity building activities.

### Safeguards Management

10. Safeguards management is discussed in two parts – first dealing with agricultural research support (component 1), and second dealing with agricultural extension support and development of supply chains (components 2 and 3).

### Part I: Agricultural research support

11. Both competitive grants program as well as sponsored public goods research aim at improving the productivity, stability and sustainability of different production systems. The key elements are: food security, diversification, commercialization, export enhancement and biodiversity conservation. Hence, the impacts are expected to be mostly positive. However, in a few cases, adverse effects could emanate and be implemented. The safeguard measures hence include a Safeguard management Framework which inter-alia comprises; (i) national legal framework; (ii) potential issues and associated checklist of impacts likely to occur; and (iii) a simple screening matrix. These would provide guidance in addressing safeguards as and when a research proposal emerges. Safeguards are not viewed in isolation, but are integration with the overall project management, including sub-project selection and implementation, which will pave the way for offering substantial opportunities to enhance environmental and social development objectives.

12. Selection of all research proposals (sub-projects) will be subject to satisfactory safeguard compliance. Each proposal will contain a safeguards management note as an integral part. This note will broadly contain:

- Baseline information – covering social, economic, demographic, cultural, ecological and other related environmental aspects.
- Stakeholder analysis – identifying key stakeholders and ascertaining their views as well as acceptance.
- Impact assessments – identifying social and environmental impacts that are likely to occur as a result of the interventions, categorize the impacts into positive and negative, draw measures to fructify positive and mitigate negative impacts. Other aspects receiving attention will include: livelihoods, in general, and that of the poor and vulnerable, in particular, gender, land alienation and marginalization: employment: nutrition; drinking water and sanitation etc.
- Monitoring and evaluation arrangements along with indicators.

The safeguard aspects will be duly evaluated deploying simple screening matrix developed as a part of the framework.

12. **Exclusion Criteria:** to ensure that the project meets its overall objectives, and that the national legal as well as Bank's safeguards requirements are met, the following will constitute criteria for the exclusion in the project's ambit the proposed interventions:

- require involuntary land acquisition;
- increase drudgery for women;
- cause damage to wildlife, forests and other natural habitats;
- impact adversely the local people in general, and, vulnerable sections such as tribals, landless, marginal/small farmers and other vulnerable families;
- cause flooding, ground water depletion and saline intrusion;
- result in increasing arsenic contamination;
- promote use, storage, manufacture and distribution of banned/hazardous agro-chemicals;
- result in eliminating/replacing indigenous varieties of species; and
- impact religious places and cultural sites.

## Part II: agricultural extension support and development of supply chains

13. **Social safeguards:** None of the project interventions require involuntary land acquisitions. Hence OP 4.12 is not triggered. While Bangladesh does have tribal population, the Upazilas selected for the First Phase implementation (planned for 5 years)(and the total program is planned for 15 years in 3 phases) are not predominantly inhabited by tribals. Hence, OP 4.10 is also not triggered. However, it is agreed that GOB will, prior to commencing the next phase, re-visit social assessment and ensure, as appropriate, compliance with OP 4.10.

14. **Environmental Safeguards:** Although the project will not finance pesticides, there is a possibility of negative impacts due to induced increased pesticide and fertilizer use associated with diversification and intensification. Judicious water management is also equally important. Towards addressing these issues, an Environmental Management Plan (EMP) has been prepared which provides guidance on integrating approaches to effectively manage pests (with a strong Integrated Pest Management focus), agro-biodiversity, water conservation, waste management, soil management, promotion of organic and safe agricultural and milk products and marketing, and sustainable livestock and fisheries management. In particular, the project would support an extensive integrated pest management (IPM) and integrated nutrient management (INM) programs and promoting production of organic and safe foods. These programs along with improving disease surveillance, sanitation in the villages, are all reflected in the Environmental Management Plan.

15. The EMP efforts will be supplemented by capacity-building approaches such as training, development of effective environmental knowledge bases and analytical capacity and effective stakeholder consultation, awareness, extension and outreach to promote environmentally-sustainable agriculture. Annual workshops will be organized by BARC jointly with KGF to discuss/disseminate best practices on sustainable agriculture and natural resource management.

## Monitoring and Evaluation

16. A strong monitoring program has also been designed to monitor various environmental and social parameters and to promote their use for adaptive management. It will be monitored as a part of the overall component wise as well as sub-project particularly in component 1) progress monitoring. Indicators will be of two types – one, generic, reflecting on the project as a whole, and the other, reflecting a particular component/sub-project, as emanated from the respective safeguards management framework. In addition, PCU will enlist the services of an external consultant to conduct a safeguards assessment twice during the project implementations, at the end of 12<sup>th</sup> and 36<sup>th</sup> month. Result of the evaluation will be used for mid-course corrections (if needed). The first six research proposals from Component 1 will be shared with the Bank for comments before approval. Public disclosure arrangement viz., making available information related to all components, individually as well as the project, as a whole, will be made.

## Institutional Arrangement

17. Safeguards management has been integrated with the overall project's governance and management institutions/arrangements. At the Apex level, the project Steering Committee (PSC) will guide and oversee the safeguards management. Component specific issues will be addressed by: the National Extension Coordination Committee (component 2), BARC (SPGR) and KGF (CGP), respectively. Key decision making will rest with the Project Coordination Unit. Operational responsibility for managing safeguards for the project will rest with the respective Implementation Units, each of which has a variety of proposals/tasks and hence, outsourcing will be done. For this, PCU will develop an inventory of experts available in and outside the country.

## Disclosures

18. Detailed Social and Environmental Assessment reports, including stakeholder consultation deliberations and technical notes, are available with the PCU. Impact Assessment checklists and the simple screening matrix, prepared as a part of the project preparation, are also available on the portal. Executive Summary of the Social and Environmental Assessments have been translated into Bengali language and the same has been disseminated widely across the country. In accordance with the Bank's disclosure policy, environmental and social safeguards management notes prepared as a part of each sub-project proposal will be discussed locally with the stakeholders and disseminated widely and made available on the project's portal.

## Research Proposal Format for SPGR

### Bangladesh Agricultural Research Council (BARC)

#### Technical Information

1. Project title
2. Project goal
3. Project purpose
4. Project period
5. Project location
6. Project status
7. Background (Significance and importance of the problem)
  - (a) Literature Review
  - (b) Bibliography
8. Benchmark information
9. Output activity and activity chart
10. Risks and assumptions
11. Methodology as regards activity and achievement of output
12. Benefit-cost and ex-ante analysis (where applicable)
13. Environmental impacts, socio-economics and gender issues
14. Targeted beneficiary and
15. Result/ output path-ways.

16. Detailed Budgetary Information:

#### Summary of Budget

Line Item /Year	Year-1	Year-2	Year-3	Year-4	Total
a. Contractual Staff Salary					
b. Office Suppliers/Services					
c. Travel					
d. Fuel, Oil and Maintenance					
e. Field Research					
f. Publication					
g. Workshop/seminar					
<b>Sub-Total</b>					
Other Expenses:					
a. Furniture					
b. Small Equipment, tools, etc.					
c. Transport (Two-wheeler)					
<b>Sub-Total</b>					
<b>Grand Total</b>					

### Details of Contractual Salaries

Name, Designation and No.	Monthly Rate of Contractual Salary/Honoraria*				
	Salary				Total for one year
A. Principal/Co-Investigators					
<b>Sub-Total</b>					
B. Contractual Scientific Staff Including Research Students, Post-doc Fellows (Designation and No.)					
<b>Sub-Total</b>					
C. Contractual Support Staff (Designation and No.)					
<b>Sub-Total</b>					
<b>Grand total</b>					

### Details of Operating Expenses

Line Item	Year-1	Year-2			Total
<u>1. Office Supplies, etc.</u> - Printing - Stationary - Utilities - Computing					
<b>Sub-Total</b>					
<u>2. Travel</u> Traveling Allowances					
<b>Sub-Total</b>					
<u>3. Fuel, Oil and Maintenance</u> Fuel, Oil and Lubricant Repair and Maintenance of Transport and Equipment					
<b>Sub-Total</b>					
<u>4. Field Research/Lab Expenses and supplies</u> Seed, Fertilizer, Chem., etc Contract Labour, Field Demonstration expenses, others, like hiring of services.					
<b>Sub-Total</b>					
<u>5. Workshops/Seminars</u> <u>Contingencies</u> All other expenses not enumerated, above					
<b>Sub-Total</b>					
<b>Grand Total</b>					

Other Expenses

Line Items	Specification	Price.	Year-1	Year-2			Total Cost
A. Furniture and Supplies							
B. Small Equipment, Tools, etc.							
<b>Sub Totaltotal</b>							
C. Small Transport (Two-wheeler)							
<b>Sub-Total</b>							
<b>Grand Total</b>							

MODEL MEMORANDUM OF UNDERSTANDING FOR SPGR

This memorandum of understanding (hereinunder called the MOU) is made ----- the day of the month of - ----- 200, between the Bangladesh Agricultural Research Council (hereinafter called the BARC and -----(the name of institution) hereinafter called the institution). [In the case there is a joint coordination arrangement between/among more than one institution, each of them will be jointly and separately named and be separately liable to the BARC for obligations under this MOU ]

WHEREAS

(a) The institution(s) has expressed interest to implement.....

(b) The institution(s) having represented to the BARC that it (they) has (have) the required professional skill and personnel and technical resources to implement the project, the BARC has agreed to sanction the project to it (them) for implementation on the terms and conditions set forth in this MOU.

NOW THEREFORE, parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form the integral part of this MOU:

- 1. BARC approved project proposal and
- 2. Reporting requirement formats attached (Attachments A and B)

2.The mutual rights and obligations of the BARC and the institution(s) shall be as set forth in this MOU:

- (a) The institution(s) shall carry out the implementation of the project in accordance with the provisions of this MOU; and
- (b) The BARC shall disburse funds to the institutions with the provision of this MOU.

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be signed in their respective names as of the day, month and year written above.

FOR AND ON BEHALF OF THE BARC

By \_\_\_\_\_  
Authorized representative of the BARC

FOR AND ON BEHALF OF THE INSTITUTION(S)

By \_\_\_\_\_  
Authorized representative of the Institution

## COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF MOU

- Effectiveness of MOU:* This MOU shall come into effect on the date the MOU is signed by both Parties.
- Commencement Project Implementation:* The institution(s) shall be carrying out the Project implementation thirty (30) days after the date the MOU becomes effective, or at such other date as may be specified below
- | Day | Month | Year |
|-----|-------|------|
|-----|-------|------|
- Expiration of MOU:* This shall terminate at the end of such time period after the Effective Date as is communicated by BARC.
- Modification:* Modification of the terms and conditions of this MOU, may only be made by written agreement between the Parties and shall not be effective until the consent of BARC has been obtained.
- Force Majeure Definition:* For the purposes of this MOU, "Force Majeure" means an event which is beyond the reasonable control of a Party and which makes a Party's performance or its obligations under the MOU impossible or so impractical as to be considered impossible under the circumstances.
- No Breach of Contract:* The failure of a Party to fulfill any of its obligations under the MOU shall not be considered to be a breach of, or default under, this MOU insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this MOU, and (b) has informed the other Party as soon as possible about the occurrence of such an event.
- Extension of Time:* Any period within which a Party shall, pursuant to this MOU, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.
- Payments:* During the period of their inability to perform the project implementation as a result of an event of Force Majeure, the institution shall be entitled to continue to be paid under the terms of this MOU, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of project implementation and in reactivating the process after the end of such period.
- Termination:* The BARC may terminate this MOU, by not less than thirty (30) days' written notice of termination to the institution, to be given after the occurrence of any of the events specified in paragraphs (a) and (b) and sixty (60) days' in the case of the event referred to in (c).
- (a) If the institutions do not remedy a failure in the performance of their obligations under the MOU, within thirty (30) days' after being notified or within any further period as BARC may have subsequently approved in writing.
  - (b) If, as the result of Force Majeure, the institutions unable to perform a material portion of the project implementation for a period of not less than sixty (60) days; or
  - (c) If the BARC in its sole discretion, decides to terminate this MOU.

## GENERAL OBLIGATIONS OF THE INSTITUTIONS

The institutions shall perform the services and carry out their obligations with all due diligence, efficiency, and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe methods. They shall always act, in respect of any matter relating to this MOU or to the services, as faithful cooperators of BARC and shall at all times support and safeguard BARC legitimate interests in any dealings.

BARC shall not be held legally responsible for any acts of the institution/universities whose project are funded by the BARC.

## PUBLICATION

In the case the results of the project are published in any journal, periodical, newsletter, etc. the financial assistance of the BARC for the research work shall be acknowledged.

The patent right of the technology developed under the project activity, may become a joint property of the BARC and the institution after expiry or the termination of the MOU.

The BARC may help take suitable steps to carry such results of the Project into practice as are of practical value to the farmers/beneficiaries in collaboration with BARC and other relevant public and private institutions.

## CONTRACTUAL RECRUITMENT RESPONSIBILITY

Recruitment in all approved temporary posts under the Research Project shall be made only on contractual basis on a fixed consolidated monthly salary by the institution following standard procedures and upon intimation to BARC for a period not exceeding the project period provision. All such employees under the Research Project shall have no claim for absorption/re-employment either by the research institution or by the BARC after termination of their services or of the project. For all such appointments, the employee and the employer shall execute a contract on a non-judicial stamp clearly stating the terms and conditions of such contractual appointment.

Periodic review meetings as and when convened by BARC shall be attended by the Principal Investigator or Co-investigator.

Concerned personnel of research organization(s) must be available and offer full cooperation during technical and financial monitoring, supervision and review visits and audits by the BARC or by auditor(s) appointed by the BARC.

The head of the institution(s) must obtain the BARC's consent in advance for any change of the Principal Investigator and or Co-Investigator. In the case this change is unavoidable, the BARC considers the institution to be fully responsible for any matter related to the project.

Commodities and equipment procured by the institution for the research project shall remain the property of the institution after expiration or termination of the Project. An inventory report of the commodities should be submitted to BARC.

## BUDGET AND DISBURSEMENT OF FUNDS

Bank current accounts must be maintained separately for the project. Six monthly reports of expenditure and technical progress certified by the appropriate authority of the institution shall be sent to the BARC along with a bank statement. Payment shall be made normally according to the following schedule, subject to fulfillment of other conditions:

- ⊖ 25% of the year-1 budget upon signature of the MOU.
- ⊖ 50% of year-1 budget on submission of inception report.
- ⊖ 25% of year-1 budget on submission of half-yearly report.
- ⊖ The rest on half-yearly installment as budgeted annually.
- ⊖ 20% of the last installment budget upon submission of completion report
- ⊖ The schedule may be changed depending on the project period or as decided by the BARC.

Funds for a half yearly installment shall be released upon receipt of acceptable progress and financial reports of the previous six months. The unspent amount of the previous installment shall be adjusted with subsequent half yearly installment. Under no circumstances, in the last year of the project, the fund of last half yearly installment shall be spent beyond the project period.

The expenditure incurred from the grant may be audited by BARC or any other agency appointed by BARC. Upon notification of such audits, the research institution shall make themselves available during the period of audit and the books of accounts and vouchers, etc. shall be kept ready for inspection of the audit. All records of expenditures, including vouchers, shall be preserved for a minimum period of three years after expiry or termination of the MOU for audit purposes or for a period as found necessary by BARC.

Cash receipts or sales proceeds, if any, accrued during the implementation of the project shall be credited to the grant fund of the BARC and shall be so indicated in the statement of expenditures and bank statement at the end of each year. These funds may, however, be allowed by BARC for use in the project, if so requested and required, or otherwise these shall be adjusted with the subsequent release of funds.

Savings, if any, on any line items of the research project shall not be used for any other purpose without the prior approval of BARC. At the end of the project unspent money/savings shall be refunded to the BARC.

### Note:

If the implementing institutions are more than one, all of them should appear as signatories in the above manner.

## DESK MONITORING FORMAT

Project title :  
 Research Code no.  
 A. Financial Aspect

Project duration:  
 From.....To.....

	Fund Released			Total	Fund Spent		
	1	2	Total		1	2	Total
<i>Year 1</i>	25%	50%		25%			
Planned							
Actual							
Difference							
<i>Year 2</i>							
Planned							
Actual							
Difference							

## Status of Reporting

Date	Half-yearly Report		Field Monitoring Report		Annual Report	
	Due	Received	Due	Received	Due	Received
Year 1						
Year 2						

## B. Technical Aspect

Activity status	Project started	Project Completed	% Completion of annual Activity Scheduled				Cumulative % Completion of total Project Activity				
			Yr 1	Yr 2			Yr 1	Yr 2			
Planned			100	100							100
Actual											

Difference										
------------	--	--	--	--	--	--	--	--	--	--

Attachment-C

### FIELD MONITORING FORMAT

Date of Field Visit -----

Coverage of Monitoring Report

From To

1. Project Name

2. Institution Name

3. Principal Investigator/Co-Investigator

4. Project Duration Start Date Completion Date

#### Financial

Budget for the Reporting Period:

Funds Received: Date Amount

Delay (if any) in receipt of funds:

Expenditure (Total):

Incurred

Committed

Anticipated/Actual Balance/Deficit

Overall Impression About Financial Progress

#### Technical

Activities Scheduled for the Period and Their Status/Progress

Deviation from/Change in the Planned Activities

Trial/Experimental Methodology, its Appropriateness and Adherence to Original Plan

Efficiency/Deficiency of Data Collection Method

Activities, Outputs and their Expected Contribution to the Achievement of Project purpose

Reporting Status (Inception Report, Six-Monthly Report, Annual Report, etc.)

Highlights of Achievements - Problems and Opportunities

Suggestion with Justifications :-

To Continue the Project as Planned

To Modify (with specified areas of modification) the Project

To Terminate the Project

Field Monitor  
Name and Signature

Date:

## KRISHI GOBESHANA FOUNDATION

## Competitive Grants Program

## FORMAT FOR SUBMISSION OF CONCEPT NOTE

For Official Use Only	Applying for ((Please <input type="checkbox"/> tick any one):
ID No KGF/CGP:.....	(a) Adaptive Research(AR)
Received on:.....	(b) Pilot Testing (PT)
By.....	Note: Duration for PT AR 1-3 years
Decision:.....	

## PART A: SUMMARY

(Please Fill in this part not exceeding one page)

- i) Title of the proposal: .....
- ii) Researchable topic/theme(s) (Please select from those included in the call for proposals):  
.....
- iii) Start and end dates: Start: ...../...../..... End: ...../...../..... iv) Duration: ..... Months
- v) Total budget proposed: Tk .....
- (In words Taka: .....)
- vi) Name of applying institution: .....
- vii) Collaboration with other institution/departments/centres (Please circle one): Yes No  
If yes, write the name (s): a).....  
b)..... c).....  
d)..... e).....
- viii) Declaration and certification by the Principal Investigator: I hereby declare that the proposed research was not submitted elsewhere for funding and is not receiving funds from any other sources.  
Signature: ..... Date: ...../...../.....  
Name: ..... Position: .....  
Address (with institution): .....
- Tel. No: ..... Cell No: ..... Fax No: ..... Email: .....
- ix) Endorsement by Head/Appropriate authority of the organization:  
Signature: .....; Date: .....  
Name (Capital letters): .....  
Position: ..... Address: .....  
.....  
Tel: ..... Cell No. .... Fax: ..... E-mail: .....

## PART B: CONCEPT NOTE CONTENT OF CGP

1. Title of the Thematic Areas:

2. Research topic:

3. Principal Investigator:

4. Other personnel: Principal Investigator/Co-Investigator/ Research Fellow/Research Assistant  
(Name, address, Tel. No;  
Cell No. Fax and E-mail):

5. Applying institution:

- i. Date of establishment :
- ii. Mandate of the Institution :
- iii. Full Address of the Fax/E-mail :
- iv. Name and Address of the Head of Institution :
- v. Brief details of work done in the area  
of Agricultural Research :
- vi. List of Scientific Manpower available with Name,  
Designation and area of Specialization :
- vii. List of Research Projects presently handled by  
Principal Investigator, Period, Costs and Source  
of Funds thereof :
- viii. Collaborative program with other :  
Research Centres – Title, Institutions involved,  
Project Costs, and Source of Funding  
(a) On-going :  
(b) Completed :
- ix. Major Achievements/ Technologies emanating  
from the Centre :
- x. Management Structure of the centre (R&D only) :
- xi. Annual Budget for R&D ( Separately for Agricultural  
and Non-agricultural Research)
- xii. Justify how the Centre is equipped to implement the  
Research Program under NATP :

6. Collaborating institutions (Name, address, Tel. No; Cell No. Fax and E-mail):

7. Rationale (about 250 words):

8. Review of literature (up to 400 words):

9. Objectives and expected outputs (about 300 words):

10. Methodology (about 500 words):

11. Work Plan:

List of major activities:

12. Monitoring Indicators (about 200 words)

13. How was the Proposal Developed (about 200 words)

14. Indicative Budget

### Indicative Budgetary Estimate

#### Year-wise and head-wise Allocation (Total Project Costs)

Items of Expenditure	Year	Year	Year	Total
<b>A. Recurring Contingencies</b>				
1. TA				
2. Workshops				
3. Contractual services (SRF etc.)				
4. Operational costs				
Sub-total of A (1-4)				
<b>B. HRD Component</b>				
5. Training				
6. Consultancy				
Sub-total of B (5-6)				
<b>C. Non-Recurring</b>				
7. Equipment				
8. Furniture				
9. Works (new/renovation)				
10. Vehicle (hiring only)				
11. Specify/Books or any other items				
Sub-total of C (7-11)				
□ Institutional Charges*				
Grand Total (A+B+C+D)				
<b>E. Cost Sharing</b>				
(i) NATP				
(ii) Institution/other				
Source (name)				

**Important Note:** Use a separate sheet for each centre including lead institution and use above format. Also provide an abstract of budgetary summary for the whole project proposal. Cost sharing may be in terms of pay & allowances of regular staff & contributions from other projects or on-going research program at the centres/institutions.

15. Budget for collaborating institution(s) (for each collaborative institution, please use a separate table as per point 14).

16. Information about the researcher(s):

### Researcher's Information

(Please do not exceed one page per researcher: *PI, CI, Research Assistant/Research Fellow*)

**Position in the Proposed Research Proposal** (*PI/CI/Research Assistant /Research Fellow*):

Name (Capital letters):

Position (in the affiliated/working organization):

Office address:

(Tel. No; Cell No., Fax No. , E-mail@)

Residence address:

(Tel. No; Cell No., Fax No. , E-mail@)

**Academic Background:**

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Degree	Year	University	Location	Major Field	Minor Field
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---

Master

PhD

Others (Please specify)

---

**Research Experience (Indicate area of expertise with duration):**

In Bangladesh:

Outside Bangladesh:

List of latest related publications (maximum 10):

17. Risks and Assumptions

18. Socio-economic and Gender Issues

19. Environmental Implications

14. Detailed Budget Summary (format to be used for the entire proposal or for individual institutions-Please specify):

Name of Proposal:.....

Name of Organization: .....

Name of PI/ CI: .....

Period:.....

Sl#	Line Items	Unit	Unit cost	QUARTERS												Total	% of total
				1		2		3		4		5		6			
				Qt.	budget	Qt.	budget	Qt.	budget	Qt.	budget	Qt.	Budget	Qt.	budget		
1	Personnel	Per Month															
	(i) P. Investigator																
	(ii) C. Investigator																
	(iii) Res. Fellow																
	(iv) Res. Asst.																
	Sub-total (1)																
2	Travel expenses (specify)																
	Sub-total (2)																
3	Operational expenses (specify)																

Sl#	Line Items	Unit	Unit cost	QUARTERS												Total	% of total
				1		2		3		4		5		6			
				Qt.	budget	Qt.	budget	Qt.	budget	Qt.	budget	Qt.	Budget	Qt.	budget		
	Sub-total(3)																
4	workshop/seminar (specify)																
	Sub-total(4)																
5	Other directs costs (specify)																
	Sub-total(5)																
	Total (1+2+3+4+5)																
6	Eligible indirect costs (overheads)-maximum 7% of the total of 1 to 5																
	Grand Total																
<i>Note: Please specify the nature of units i.e.: PM= Person Month, PW= Per Week, PD= Per Day, RT= Round Trip; WS = Workshop, UT= Unit; MN = Per Month, etc.</i>																	

DETAILED IMPLEMENTATION PLAN

11b. Activity chart (in months)\*- this is an example; please follow this style for your proposed research proposal:

Activities	Months																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Data collection	→																		
Data analysis						→													
Training	→																		

\* The arrow (→) indicates the start (tail) and completion date (head) of each activity.

# KRISHI GOBESHONA FOUNDATION

Annex-7

## DRAFT MODEL

### MEMORANDUM OF UNDERSTANDING FOR CGP

For Implementation of CGP Sub-projects

This contract in the form of Memorandum of Understanding (hereinafter called the MOU) is made on this.....day of.....200.....

Between

The Krishi Gobeshana Foundation (hereinafter referred to as KGF) as the 1<sup>st</sup> PARTY

And

.....a.....having Its Registered office at .....  
.....which expression Shall include its successors hereinafter called  
the 2<sup>nd</sup> PARTY;

WITNESSETH:

WHEREAS

On the basis of the Rules and regulations framed for the proper implementation of the sub-project entitled ..... under CGP of KGF, the Memorandum of Understanding entered by among members AND other laws prevailing in Bangladesh; on the terms and conditions herein set forth.

NOW, THEREFORE, in consideration of the premises and covenants and conditions herein contained, IT IS HEREBY AGREED between the Parties as follows:

- 1) THAT the partners agree to work and cooperate with each other and with others for the implementation of the sub-project approved by KGF and to achieve the objectives of the sub-project.
- 2) The first party shall finance the investment and operational costs and some of the identified personnel costs of the member of second part to the extent provided for the agreed program/ Consortium/research sub-project.
- 3) THAT the member of the second party shall implement the project/sub-project as per the guidelines and covenants prescribed by the KGF from time to time.
- 4) THAT the member of the second party shall appoint staff within one month from the date of final signing of the MOU/receipt of 1<sup>st</sup> installment fund for KGF.

- 5) THAT the member of the second party shall provide land, laboratory, equipments, physical facilities and other facilities required for the project.
- 6) THAT the member of the second party shall provide services of competent scientific, technical, administrative and ancillary staff as well as skilled and semi skilled labour as provision of the approved project document.
- 7) THAT the member of the second party shall not transfer/shift the staff deployed for the project without the concurrence of the KGF.
- 8) THAT the member of the second party shall use the staff exclusively for the implementation of the CGP research project.
- 9) THAT the member of the second party shall use the funds provided under the project exclusively for the project work.
- 10) THAT the member of the second party shall maintain and render records and accounts adequate to reflect the operations, resources and expenditure in respect of the project in accordance with sound accounting practices to the KGF. Reporting Formats for such activities will be available at KGF after signing the MOU.
- 11) THAT the member of the second party shall keep the project funds in a separate bank account with separate cash book to be operated as per the existing instructions of the KGF.
- 12) THAT the member of the second party shall send audited statements of expenditure as per the prescribed schedule and required of KGF.
- 13) That the KGF shall not be responsible for absorption of any staff deployed for the Project work after completion/termination of the Project/Scheme.
- 14) That the implementing agency shall permit the above staff, depending upon the requirement, to attend trainings, impart trainings, attend the review meetings and workshops and present their reports/data etc. for discussion and review.
- 15) That the member of the second party will allow monitoring of the progress of the program and activities by KGF/the World Bank, and provide all assistance including all information required and access to the Project sites.
- 16) That the member of the second party will comply with the Financial Reporting and its management in accordance with the Guidelines/instructions of the Financial Management System as agreed between by the KGF/Govt. of Bangladesh and the World Bank.
- 17) That the member of the second party will follow the Guidelines and Procedures of Procurement as agreed between the KGF/Govt. of Bangladesh and the World Bank.
- 18) THAT the parties agree that in case of any dispute it shall be solved as per the Rule and Regulations of the KGF.

19) THAT the Rights to any Intellectual Property developed at any time, as a part of the activities of the research project shall be vested by the KGF to in the BARC. The BARC shall be the absolute owner of these rights.

20) The KGF can enter into a Material Transfer Agreement for purpose of evaluation/multiplication and uses in research to further technological developments.

In witness whereof, the Parties through its authorized officers has set its hand and stamp on this.....day of.....200.....at.....

The seal of.....was hereto duly affixed by.....this  
.....day of.....200.....in accordance with its bye-laws and this guarantee were duly signed  
by.....and.....as required by the said bye-laws.

1. \_\_\_\_\_  
FIRST PARTY

(Executive Director)  
Krishi Gobeshana Foundation  
Address:

2. \_\_\_\_\_  
SECOND PARTY

[Name, designation and full address]

**Witness:**

1) Name:  
Full Address:

Signature:

2) Name:  
Full Address:

Signature:

## CRITERIA FOR SELECTION OF Ph. D CANDIDATE

**Bangladesh Agricultural Research Council  
New Airport Road, Farmgate  
Dhaka-1215**

APPLICATION FOR THE FIELD OF:

LEADING TO Ph.D.

<p>Instruction: please furnish the following information correctly and completely. Type or in ink. Read carefully and follow all directions. If you need more space, attach additional pages of the same size. Be sure to sign and date their form. Application form must accompany clearance certificate from the employer. The applicant must be a citizen of Bangladesh.</p>												
1. Full name (Block letters):												
2. Permanent address:												
3. Mailing address:												
4. (a) Date of birth:				(b) Place of birth				(c) Citizen				
5. Marital status:				Single				Married				
6. Language ( List mother tongue first)	<b>READ</b>				<b>WRITE</b>				<b>SPEAK</b>			
	Excellent	Good	Fair	Slight	Excellent	Good	Fair	Slight	Excellent	Good	Fair	Slight
Bengali												
English												
Urdu												
Arabic												
7. Qualifications:												
(a) Academic:												
High School/Colle ge/University Name & Place	Years attended						Certificates/Degrees and Academic distinctions (class/Division)	Main Subject				
	From			To								
(b) Professional:												
(i) Training: Annexure-1												
(ii) Participation in international seminars, workshops etc.												

(iii) Others qualifications, if any:			
8. Evidence of contribution in technology generation with scale of adoption or academic/research contribution award, if any:			
9. List professional societies/activities you are associated with			
Annexure-II			
10. Employment Records:			
Title of positions	Place of posting	Period	Remarks
11. Field of study applied for:			
12. List scientific publications (please attach your publication list as indicated with the scoring sheet).			
Annexure-III			
13. State other relevant facts, if any:			

For Official Use: By the nominating institution/ organization

Annual Evaluation record: Last 3 years annual evaluation records to be indicated with tick mark by your Head of Division/Organization.												
Evaluation Year		Extra Ordinary			Very Good			Good		Average		
I certify that the statements made by me are true and correct to the best of my knowledge and belief. I understand that any false statements or any required information withheld from this form may provide grounds for the withdrawal of any offer of fellowship or cancellation.												
Date: _____						Signature: _____						

BARC Approval: .....

**SELF SCORE SHEET OF THE CANDIDATE FOR HIGHER DEGREE  
LEADING TO Ph.D. IN COUNTRY/ABROAD**

1. Name of the candidate :.....  
(Block Letter)
2. Present Position :.....
3. Organization :.....
4. Application for the field of :.....

Leading to :

Sl.No.	CRITERIA	FULL SCORE	SCORE BY THE CANDIDATE
1.	Academic records	16	
2.	Service Length	25	
3.	Age	15	
4.	Annual Evaluation	15	
5.	Publications	25	
6.	Award	4	
	Total	100	

I certify that the statements made by me are true and correct to the best of my knowledge and belief. I understand that any false statements or any required information withheld from this form may provide grounds for the withdrawal of any offer of fellowship or cancellation.

\_\_\_\_\_  
(Candidate's Signature)

Recommendation by the concerned Head of the Division:

\_\_\_\_\_  
(Signature)

Nomination by the Head of the Organization:

\_\_\_\_\_  
(Signature)

( Note: Please score with the help of procedure provided overleaf)

**PROCEDURE OF SCORING OF CANDIDATES FOR SELECTION OF HIGHER DEGREE LEADING TO  
Ph.D. OF NARS.**

SL.No	CRITERIA	FULL SCORE
1.	Academic Records	16
2.	Service Length	25
3.	Age	15
4.	Annual Evaluation	15
5.	Publications	25
6..	Award	4
	<b>Total</b>	<b>100</b>

1. Academic Records : Full points -16

	S.S.C.	H.S.C.	Bachelor	Master
(a) For Ph.D 1 <sup>st</sup> Division/Class	4.00	4.00	4.00	4.00
2 <sup>nd</sup> Division/Class	3.00	3.00	3.00	3.00
(b) For M.S 1 <sup>st</sup> Division/Class	5.33	5.33	5.33	
2 <sup>nd</sup> Division/Class	4.00	4.00	4.00	

(Note: For M.S. Candidates scores will be counted upto Bachelor degree and for Ph.D candidates upto Master degree. The best score will be counted for one bachelor or one Master degree in case of candidates having more than one Bachelor or Master or Master degree).

2. Service Length : Full Points-25

- (a) Service at H.Q.-1 point/year
- (b) Service at regional or sub-stations – 2 points/year .

(Note: Duration of six months and above may be given full point of the year)

3. Age: Full Point- 15

- (a) Upto -30 years-09 points
- (b) 30.1 – 33 years – 12 points
- (c) 33.1 – 36 years – 15 points
- (d) 36.1 – 39 years -12 points
- (e) 39.1 -42 years – 09 points
- (f) 42.1 – 45 years -06 points

(Note: For Ph.D abroad age of maximum of upto 40 years and local upto 45 years may be considered)

4. Annual Evaluation Reports: Full Points 15( Past 3 years)

- (a) Extra ordinary – 5 points/years
- (b) Very good (A-grade)- 4 points/years
- (c) Good(B-Grade) - 3 points/years
- (d) Average(C-Grade)- 2 points/years

5. Publications: Full Points-25

- (a) Full Paper in Periodicals:
  - Principal Author – 3.00 points/paper
  - Associate Author – 2.00 points/paper
- (b) Scientific Note, Technical Paper in Workshop, Seminar etc.
  - Principal Author-2.00 points/paper
  - Associate Author-1.00 points/paper

(Note: Only published article may be considered, abstract and letter of acceptance of any article may not be considered).

6. Award : Full Points- 4 ( Academic/research Contributions Award)

## Eligibility Criteria for Selection of Firm for the Management of Training Programs

### International Training Management Firm:

Given the significant number of foreign training programs to be implemented via this project, prior experience in large-scale foreign training management should be considered as an essential element in the selection of the most suitable firm. To ensure the selection of a competent firm, the following eligibility criteria are suggested to be taken into consideration. While selecting international training management firm, a number of organizations apply who have no significant exposure to foreign training management

- 10 years of experience in managing short-term and long-term foreign training originating from Bangladesh.
- Experience in managing short and long-term foreign training/ study tour in agriculture, fisheries & livestock sector from Bangladesh and other developing countries.
- Evidence of implementing at least two foreign training projects as a lead firm, worth US\$1,00 million or more for the Government of Bangladesh
- Evidence of having international quality assurance standards.
- Experience in managing foreign training programs for different ministries in Bangladesh
- Evidence of office base and representation in Bangladesh as well as destination countries.
- Evidence of local staff, registration, vat and tax documentation in Bangladesh.

### Local Training Management Firm:

To ensure the selection of a competent local training management firm, the following eligibility criteria are suggested to be taken into consideration.

- 10 years of experience in managing and implementing local training programs
- Evidence of implementing at least two local training projects, worth Tk. 50 lacs or more for the Government of Bangladesh
- Evidence of implementing training programs all over Bangladesh
- Experience in organizing training programs for different ministries in Bangladesh
- Evidence of Dhaka based office and permanent training staff and resource pool
- Evidence of registration, vat and tax documentation in Bangladesh.