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Agricultural Advisory Society (AAS)

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Table of Contents

Vision

To promote sustainable agricultural production strategies in order to improve the livelihood of Bangladesh's rural poor

Mission

To create more wealth in the hands of small and poor farmers, by improving their agricultural skills and capacities and by demonstrating ways in which they can better manage their available resources.

Background of AAS

The AAS Approach to Agricultural Development: AAS has, from its earliest days, approached the challenges of agricultural development in Bangladesh from the perspective that Bangladesh, after all, is a rich country, blessed with abundant agricultural resources, (i.e., fertile land, plenty of low cost farm labor and abundant reserves of easily available, continuously renewed fresh water). AAS believes that Bangladesh's endemic poverty is simply a reflection of its lack of capacity to effectively manage its rich endowment of agricultural resources. Furthermore, the nation has been too slow in developing its agricultural production capacity. Accordingly, AAS has focused its available energies on helping Bangladesh's farmers to become more productive; to, in the context of their rich land, small plots, plentiful labor resources and abundant supplies of fresh water, substantially increase their output.

AAS's sustainable agricultural development strategies are focused on:

- **Modifying traditional agricultural practices to accommodate higher yielding production**
- **Advocating the use of sustainable intensive cropping, fishery and livestock production strategies**
- **Using field based demonstrations to model " a higher standard of best practice"**
- **Popularizing its strategies through a network of community based partners**
- **Using state of the art training modules: Farmer's participatory training (FAMPAT) and Focused Group Discussions (FGD) to overcome knowledge and skill deficits**
- **Emphasizing poverty alleviation, gender equity and environmental preservation**
- **Promoting participatory approaches at every stage of project planning and implementation**

Bangladesh has traditionally been a rice-based society; indeed, it remains so today. Now that the country has reached food-grain self-sufficiency, AAS is pioneering the introduction and popularization of high value, non-rice and specialty-rice crops along with their in-field irrigation technique. AAS has made a material contribution to the introduction and popularization of new, higher yielding strains of well-known vegetable, fruits, spices and specialty rice varieties. Through its demonstration based training programs, AAS has helped small plot cultivators adapt their farming practices to accommodate the requirements of higher value, higher yielding crops, fishery and livestock. AAS is using state of the art training methodologies to accelerate the uptake of promising new varieties and improved agricultural technologies. Accordingly, AAS's agricultural programs have materially affected the capacity of Bangladesh's small plot farmers to increase their wealth on the basis of a more efficient use of their quite formidable resources. Their results have been impressive.

Background of AAS Establishment

The idea of establishing an agricultural NGO to provide quality technical support to other, more generic NGOs; developing their capacity in the field of agricultural was first mooted by a group of prominent professionals including Dr. David Gisselquest, Mr. Harun-Ar-Rashid, Dr. A.J.M Azizul Islam, Mr. William H. Derrenger and Dr. Tariful Islam in 1989. With this end in view, this group formed a non-profit, non-political, rural service provider and civil society organization called Agricultural Advisory Services. To meet government and registration requirements the name was later changed to Agricultural Advisory Society (AAS) from January 1991.

Since its inception, AAS has implemented a numerous projects to alleviate poverty among the resource poor and small farmers of Bangladesh. AAS has been working as a bridging organization for technology transfer between farmers, partner organizations (POs), input/output traders, Department of Agricultural Extension (DAE) and other research institutions (eg. BRRI for rice technology, BADC as a source of foundation and certified seed, BARI for non-rice crop technology, etc.)

Project Activities and Achievements

AAS implemented a number of projects/activities to alleviate poverty among the resource poor and small farm families of Bangladesh. The major activities and achievements of AAS during January to December 2004 are as follows:

I. AAS-PETRRA Project Activities

AAS implemented 13 PETRRA (a DIFD funded project of IRRI-BRRI) funded sub-projects/activities with more than 25,000 resource poor farmers (RPFs) through more than 300 resource poor farmer groups (RPFGs) of 74 partner organizations (POs) in 22 districts of Bangladesh. Findings of the PETRRA funded sub-projects are available for dissemination among the targeted farm families with the leadership of the skilled group coordinators of the trained partner organizations (NGOs/CBOs) under the supervision of AAS as a technical apex organization. The AAS-PETRRA project activities are as follows:

A. Strengthening FARMSEED extension method

Seed is the vital element of crop production. Irrespective of variety, quality seed alone can increase production to a great extent; mainly claim at least to 15%. At present only around

5% of available rice seed could be considered as "quality seed". Quality rice seed, almost wholly, supplied through BADC only with small volumes comes from other private or public sources. Substantially all of the remaining 95% of Bangladesh's rice seed requirement, much of which is not of good quality, comes through farmers retained and/or farmers to farmers exchanged seed. The sub-project through, aimed to introduce a FARMSEED extension method through which farmers can produce and exchange quality seed among themselves. Thus, through

implementing the sub-project "strengthening FARMSEED extension methods" AAS intends to enhance the availability of quality seeds to farmers through developing a farmer-to-farmer sustainable seed exchange system. The sub-project has been implemented in 246 villages of Kishoreganj, Habiganj and Moulvibazar districts with around 331 groups including 84 female groups in collaboration with 31 partner organizations (NGOs/CBOs). More than 2,000 resource poor farmers from 161 villages have been trained and enlisted as " Truthfully labeled seed producers" by the FARMSEED network. As a result, the overall rate of FARMSEEE exchange in the sub-project area has steadily increased from about 4.5% in the year 2000 to more than 35% in 2004. AAS has been implementing the FARMSEED strategy in Natore, Pabna and Sirajganj district, in about 50 communities, with it own resources since 2003 T. Aman season. Nevertheless, based on this great achievement and the initial responses of the resource poor farmers, AAS accepts FARMSEED as the preferred standard extension method and is strongly committed to scaling-up the method to a national wide level. AAS has also taken initiative of producing foundation rice seed since last 2002-2003 Boro season. AAS has been taken initiative to test FARMSEED strategy for other crops' seed production such as wheat, Onion, Potato and Mug bean with its own resources.

B. Participatory integrated plant nutrient management

Participatory integrated plant nutrient management for intensive rice-based cropping sub-project funded by PETRRA was executed in Habiganj and Moulvibazar districts during December 2001 to June 2004. The purpose of the sub-project was to encapsulate farmers' indigenous knowledge of soil fertility evaluation and making them to prepare village level soil fertility maps, prescribe integrated plant nutrient management (IPNM) packages for their specific field and increase rice productivity.

During the two and half year tenure, the project reached at 215 villages, formed 429 groups (215 males and 214 females) with 6837 members, trained 8907 farmers (13% women), developed 213 PIPNM packages and prepared 216 soil fertility maps by the 216 skilled farmers extension agents (FEAs) in Habiganj and Moulvibazar districts. Based on the soil fertility maps and research results of the field experiments, a nutrient management packages for grades of soil of the entire village were prepared that was term as participatory integrated nutrient management packages (PIPNM). Based on the field trials' results, field specific final IPNM package was developed in village level workshop. Participating farmers in each village workshop thoroughly discussed on FP (farmer's practice) and IPNM (improved practice) doses, yield and accounted the economic outcome and finally prepared IPNM packages for each grade of soil fertility. The FEAs took the main leadership for dissemination of the PIPNM packages. Thus, the PIPNM packages reached to about 14,000 farmers' field by the end of the project cycle in greater Sylhet district. With this, large-scale dissemination of the process is now very much possible where farmers can make their own nutrient packages with minimum laboratory support.

C. Participatory field trial of rice hybrids

The purpose of the farmer's participatory hybrid rice field trials was to identify location specific adaptable rice hybrid(s) which are suitable for inclusion in a rice yield maximization package for the small plots of the resource poor farmers (RPFs). Six hybrid rice varieties were selected for the field trial. Five imported varieties (Sonarbangla, Jagoran 1, Hira, Aftab-LP50 and Richer 101) were selected along with BRRI hybrid dhan1 as check cultivars during 2003-04 Boro season. In order to implement the sub-project funded by PETRRA, 75 villages of 18 upazilas of 10 districts in Northeast, Northwest and Southwest regions of Bangladesh were selected. Total of 130 trial plots were established and the farmers were harvested 109 trial plots for report preparation.

Among the 6 rice hybrids tested in three regions, Hira was found to be the highest average grain yield producing variety with 7.94 ton/ha followed in order by Sonarbangla1 (7.88 ton/ha), Aftab LP50 (7.85 ton/ha), Richer101 (7.83 ton/ha), Jagoran1 (7.49 ton/ha) and BRRI hybrid dhan1 (6.97 ton/ha) during 2003-2004 Boro season.

The average field duration was highest with about 113 days in BRRI hybrid dhan1 and for the rest 5 varieties; the average field duration was found more or less same (about 104 days).

The average cost of production for 6 rice hybrid cultivars were the same as the management of 6 varieties was same for the trial plot of individual farmer. The per hectare net-return on full cost basis was highest with Hira (Tk.24,853) followed in order by Sonarbangla1 (Tk.24,379), Aftab LP50 (Tk.24,142), Richer101 (Tk.23,984), Jagoran1 (Tk.21,298) and BRRI hybrid dhan1 (Tk.17,190). Similarly, the per hectare net-return on cash cost basis was highest with Hira (Tk.45,730) followed in order by Sonarbangla1 (Tk.45,265), Aftab LP50 (Tk.45,019), Richer101 (Tk.44,861), Jagoran1 (Tk.42,175) and BRRI hybrid dhan1 (Tk.38,067).

However, during farmers' participatory evaluation workshop in 3 regions, the most accepted rice hybrids was found Sonarbangla1 (about 36%) followed in order by Hira (about 31%), Jagoran1 (about 11%), Richer (about 10%), Aftab LP50 (about 8%) and BRRI hybrid dhan1 (about 4%).

The overall performance of 5 imported Chinese varieties was found better over the control variety BRRI hybrid dhan1. So the above mentioned 5 Chinese hybrid rice varieties, should be adopted in Boro season within and outside of the project areas.

D. Performance of rice hybrids in Bangladesh

The primary purpose of this study was to assess the actual performance of hybrid rice, particularly the scale of adoption of different varieties and their impacts towards the lives of rural communities in Bangladesh. The study was conducted from middle of April to middle of May 2004 by a small group of experts with diversified experiences in agriculture in Southeast and South Asia. The study methodologies involved individual interviews, focus group discussions, and open interviews and discussions with different levels of stakeholders such as farmers, seed suppliers, dealers, and experts and specialists associated with hybrid rice. In addition, there was extensive field visit by the study team. The study was carried out in 12 different sites across the country where most of the hybrids are grown.

An important parameter to assess the performance of hybrid varieties was the average yields obtained by farmers as against those of non-hybrid modern varieties. The overall findings of the study in all the twelve sites indicate that the yields of hybrid varieties are tremendously higher than those of other modern varieties. Invariable to sites depending on the management practices and the skills of farmers the increases are noticed from at least **14 mounds to as high as 37 mounds per acre.** Considering this average yield increase, overall production per farm family, subsequent income and enhanced rice provision ability attained by a family and the comparative cost and return analysis between hybrids and non-hybrids, it is very obvious to note that the farmers are gradually **shifting from non-hybrids to hybrids**.

Although, at the initial stage there were some speculations that hybrid would perform better only in high fertile soils, but the overall findings of the study indicate that they are doing better also in moderately fertile soils both in single and double cropped areas. Throughout the country, ultimately, the demands for hybrids continue to enhance. In last year (2002/3) hybrids were grown in **67,300 acres** areas, while this year the area expanded to **122,700 acres**. In the coming years the expansion would be far more.

Hybrids have made significant changes towards the incomes and livings of farmers. With the introduction of hybrids farmer's average incomes have increased remarkably, which range from **1000** taka to as high as **42,065** taka per family based on the total areas of cultivation.

E. Production and marketing of fine, aromatic and glutinous (FAG) rice

Although the rice cultivation in Bangladesh is dominated by coarse rice, there is a substantial demand of fine and aromatic rice along with glutinous. The primary purpose of the sub-project is to improve the production and marketing system of FAG rice in northeast Bangladesh. The project has been implemented in collaboration with HEED Bangladesh in Moulvibazar and Habiganj districts during April 2002-June 2004. It organized trials and demonstrations with 22 FAG varieties in 2004 T. Aman and 7 varieties in 2003-04 Boro.

Among the 11 fine and aromatic rice, the performance of 4 varieties were found to be good of which BRRI dhan 34 was found to be very promising particularly for Sylhet region. In the case of the Beruin cultivars, which are very sticky and somewhat glutinous, more or less similar performances were observed. The project selected nine Beruin cultivars, through are suitable for commercial cultivation in Northeast region of the country. The project developed quality seed production system for FAG rice production and marketing through group approach in greater Sylhet district. FAG rice production, nevertheless could be suitable for resource poor farmers, as it is highly profitable on cash-cost basis than full-cost basis.

F. Women-led group extension method

Women do most of the post harvest work including drying and storage particularly in rice. The project introduced innovative women-led extension methods to disseminate drying tables and storage technique to resource poor female farmers (RPFFs). Accordingly, since its inception in November 02, the project has formed and developed the leaderships of 26 women-led groups, 10 in Kishorganj and 16 in Habiganj districts, with around 570 RPFFs of 10 partner NGOs (PNGOs). Using the locally available materials the groups have designed a low cost drying table, and have validated the use of AAS developed plastic drum with naphthalene for rice seed storage. Both the technologies are now being widely used by members and non-members female farmers of the communities, and the method has been seen making good contribution in disseminating the rice technologies.

G. Skilled family members extension approach

The public sector agricultural extension service providers (ESPs) disseminate most agro-technology through trained male farmers in the country. The same is true of the rice technology transfer process. Little comprehensive research has been undertaken regarding the unique role of women in the acquisition and dissemination rice production knowledge with the farming community. However, preliminary research finding from project implemented by the international maize and wheat improvement center (CIMMYT) with local collaborators dissemination of wheat technologies when whole families (all members) were trained together. It assumed that similar approaches would be equally effective with rice technology transfer; i.e, the earlier CIMMYT work assumed that rice cultivation and wheat cultivation task were, in many ways, pretty similar. But no

comprehensive research had ever been conducted on the role of "whole families" in improved rice knowledge dissemination among the resource poor farmers (RPFs).

Accordingly, the "Whole Family" sub-project was particularly aimed to introduce and organize a whole family extension approach as compared with half family (husband & wife), husband alone or wife alone approach on the dissemination of improved rice technologies among the RPFs. The particular purpose of the project, however, is innovative skilled family member(s) extension approach for rice knowledge dissemination among the resource poor farmers of Bangladesh.

The project was implemented in collaboration with three women-led local NGOs in three districts of Rajshahi division. During the one and half year project period, the project trained 639 farmers (315 female farmers) from 314 resource poor farm families (RPFFs) at 12 villages on different aspects of rice productions in different categories as mentioned earlier and 15 staff (11 female staff) of three women-led NGOs and AAS. Demand-led farmers training imparted through a participatory approach, where more than 90% of the participating farmers were involved in all phases of the project (verification, selection and evaluation).

To assess the effectiveness of the four tested methods, the project conducted an independent evaluation. The evaluations were made based on some key parameters such as knowledge and understanding levels of the participants, their uses of technologies, management of the field, decision making and problem solving ability, and finally based on the increases of rice yields and rice provision ability by each categories of the farmers. According to all the tests the half family member group ranked first, while the whole family group ranked second. The husband alone and wife alone group stood third and fourth respectively.

In terms of performance and effectiveness, the differences between the half family and whole family are very marginal. Therefore both the approaches could be considered equal. Half family in a sense is also a family approach. In families where there are no children they could be actually called whole family as well. Again in some families where adult children are engaged in study and therefore are unable to participate in the training, those types of particular families according to the category of the project fall under half family group. Most of the participants at the workshop of four extension service providers (ESPs) highly recommended the "family approach" as an effective extension method for rice technology transfer among farmers including resource poor farmers (RPFs).

H. Extension of the system of rice intensification (SRI)

A new approach of growing rice, globally known as SRI, has drawn much attention for its tremendous potentials of yield increase. Thousands of farmers all across the world have been involved in evaluating the practices in their farms. The introduction of the system of rice intensification (SRI) through this sub-project is to evaluate the opportunities of yield maximization in northeast region of Bangladesh in collaboration with BRRI regional station, Comilla during 2003 & 2004 Boro seasons. The project accordingly organized a number

of trials in Habiganj and Moulvibazar districts. The results in terms of yields, field duration and yield components with the selected set of methodologies, however, noted that the system, at this stage, compare to farmer's practices as well as the improved management practices recommended by BRRI is not performing well. Nevertheless, the methodologies will be reviewed to organize further trials.

I. Arsenic in ground water and food chain

Ground water is the most important source of water supply for drinking and irrigation in Bangladesh. But, arsenic contamination in groundwater is one of the most serious natural calamities to befall Bangladesh. Around 80 million people, more than 65 percent of the population in Bangladesh, live in the arsenic contaminated areas. Ground water, which is the main source of contamination, is also a major source of irrigation. There are controversies that the contaminations are made by ground water irrigation as well. The project intends to establish information on the status of arsenic pollution in water-soil-plant in rice based cropping systems and suggest directions for future research. The project has been implemented in Chapai Nawabganj and Rajshahi districts in partnership with BAU and BRRI.

This study was aimed to find out the variation of arsenic content in groundwater according to well depth, age of and distance between wells (HTWs, STWs and DTWs) and distance from rivers in Rajshahi (Charghat and Bagha upazilas) and Chapai Nawabganj (Sadar, Shibganj upazilas) districts using GIS mapping to fix the database and plot the various indicators.

Among the three types of wells, arsenic contamination was found to be the highest with HTWs (27%), followed by STWs (21%) and the least with DTWs (7%). The middle layers (i.e., those between 40-160 feet) reflected the highest levels of arsenic contamination in groundwater. The shallower layers up to 35 feet and the deeper layers below 160 feet below the surface showed uniformly low (safe) levels of arsenic. As for age; the 3 types of tube wells tested were found to have no relationship with arsenic contamination. In case of lateral zoning with a 4 km assigned distance, most of the unsafe wells were within the 1st zone and gradually decreased with the increase of distance from the rivers.

It was observed that arsenic concentration started to increase with the beginning of dry season and continued up to May/June. Arsenic concentration started to decrease with the beginning of the monsoon and reached at the minimum level after the monsoon. Further research activities from the preliminary findings confirm that arsenic uptake in different crops including rice and vegetables irrigated with arsenic contaminated ground water is well within safe limits of human consumption.

J. Community based integrated rice-duck farming

Presently Japan Vietnam, China, Taiwan, Korea and Indonesia are adopting "integrated rice-duck farming" as the principle means of organic farming where weed and insect could be managed naturally. Thus it is environmentally friendly; with several other benefits as well.

BRRI validated rice-duck farming as an "exotic technology" in collaboration with FIVDB, BDS and HEED-Bangladesh with founding support from PETRRA. The sub-project operated during 1 July 2001 to 31 June 2004 in greater Sylhet, Barisal and Khulna districts. The sub-project findings are very positive with several benefits and impacts among the participating resource poor farmers (especially farmers) in the project areas. But the sub-project has a missing element. The missing element is: How to cost-effectively disseminate and popularize this revolutionary technology on a broader scale among the resource poor farmers (RPFs). Thus, AAS proposed a project intends to provide the missing link in the context of a community based, integrated Rice-Duck farming extension programme. Mac-Bangladesh in collaboration with AAS conducted farmer's participatory validation on a prospective "community based extension approach" in Srimangal upazila of Moulvibazar district during 2003 T. Aman season. The farmer's participatory, early-validation on "Community Based Extension Approach" findings are, so far, very encouraging. Accordingly, AAS/Mac-Bangladesh conducted pilot test the rice-duck concept as a "Community Based Extension Approach" among resource poor farm families in Moulvibazar and Habiganj districts during 2004 T. Aus season (rainfed) with eight partner organizations (NGOs/CBOs). The overall performance of community based extension approach for dissemination of integrated rice-duck farming among the resource poor farmers was found very encouraging. So integrated rice-duck farming can be disseminated through community based extension approach in northeast Bangladesh.

K. Use of leaf color chart (LCC)

The use of leaf color chart (LCC) for managing N fertilizer in rice, increased grain yields and decreased the use of urea. The grain yield could be further increased when LCC was used with other nutrients as indicated by the LCC. Increased grain yield and simultaneous saving of urea provide additional income to farmers helping them to improve their livelihood.

On the basis of BRRI/IRRI findings on the practical use of LCC in rice production, AAS has taken an initiative with BRRI/IRRI to scaling-up the LCC technology in its working areas during 2003 T. Aman and 2004 Boro seasons. At the beginning of the initiative, BRRI provided practical training to our staffs and farmers on the use of LCC for urea top-dressing in rice production. For this purpose, AAS distributed about 300 LCC among the trained resource poor farmers during 2004. Post distribution monitoring was conducted on the use of LCC in urea application in rice production plots. Farmers' response was found mixed in the project areas in all three rice-cropping seasons.

L. Piloting Bangladesh rice knowledge bank (BRKB)

Bangladesh Rice Knowledge Bank (BRKB) was launched in 2004 by IRRI with Bangladesh Rice Research Institute (BRRI) as leader and RDRS and Agricultural Advisory Society (AAS) as partners for testing its content with relevant stakeholders including farmers and communication feed back from them. BRKB started with materials coming up from PETRRA sub-projects of IRRI/BRRI. The availability of rice knowledge information with audience friendly materials is of utmost importance. Accordingly, the establishment of BRKBs at the regional level is an essential aspect of making BRKB "rice knowledge" available to the widest range of extension service providers and farmers. BRKB is an electronic repository/library of rice knowledge. It contains information of rice technology, rice training, extension method, and even related knowledge beyond rice. However, the problem in the agricultural technology transfer/dissemination process is, that the highest demand rice knowledge for the maximum farmers has not been fully identified. Accordingly, a systematic effort must be undertake to categorize BRKB knowledge according to the priority interest of its several users.

AAS has established its training and information (TI) center at it's zonal office at Srimangal in Moulvibazar district during 2004 with funding support from IRRI/DFID to provide electronic training services to extensionists and their client farmers. IRRI Representative-Bangladesh and PETRRA project manager Dr. Noel P. Magor inaugurated the TI center on 3 July 2004 at the beginning of 2-day regional communication fair 2004.

AAS conducted need assessment survey in order to include farmers demand-led rice knowledge issues in the BRKB content for the farmers of northeast region. The study was conducted in 4 districts of Northeast Bangladesh through a participatory process and organized with four stages at village, upazila and district levels. The four stages based assessment method is found excellent for the survey of specific rice knowledge need assessment. From the survey on specific rice knowledge need assessment for BRKB content in Northeast region of Bangladesh, 15 major rice knowledge issues were found as the major demands for the farmers of this region. Under these 15 major rice knowledge issues, 56 specific rice knowledge issues what are they demanded were selected and categorized as 4 types of demands in Northeast region.

A pilot testing on BRKB content at community was conducted in 37 sessions. Farmers (Primary stakeholders) were from 56 villages of 7 upazilas in 3 districts of Northeast of Bangladesh. At secondary stakeholder level, there were 60 participants from 28 organizations of the region. The BRKB content, concept and strategy seem to have been highly accepted at both the farmer and secondary stakeholders levels. Overall, the acceptability of rice knowledge learning through video show was fund to be unique way of knowledge dissemination. Both levels of stakeholders it was concluded that the future training for the farmers would be effective through multimedia presentation including well-designed picture-rich fact sheets, videos with folk songs, drama, documentary, live sample demonstration, open discussion etc on farmer demanded, specific rice knowledge.

M. Regional Communication Fair 2004

A two-day long regional communication fair on Agriculture technology was organized in Srimangal under the leadership of Agricultural Advisory Society (AAS). AAS organized the fair on behalf of the Northeast Focal Area Forum in collaboration with other stakeholders in the region, such as DAE, BRRI and BADC

The fair was held on the 3rd and 4th July 2004 at Nazrul Community Centre, Srimangal,, Moulvibazar. Dr. M.A. Baqui, Director-Administration of BRRI attended the fair as the Chief Guest. IRRI Representative to Bangladesh and PETRRA Project Manager Dr. Noel

P Magor and Dr. Ekramul Ahsan, Advisor, Food Security Unit of European Commission attended as Special Guests. The inaugural session was presided over by Mr. Hari Pada Majumder, Deputy Director of DAE, Habiganj district. Mr. Harun-Ar- Rashid, Executive Director of AAS delivered the welcome address. Dr. Ekramul Ahsan, Advisor, Food Security Unit of European Commission formally inaugurated the two-day long northeast regional communication fair at the end of the session. BRRI, Director-Administration Dr. M.A Baqui formally inaugurated the stalls of the communication Fair. Dr. Noel P Magor formally inaugurated the Bangladesh Rice knowledge Bank (BRKB) Training and Information Center (TIC) at AAS Zonal Office, Srimangal.

Scientists, investigators and extensionists from BRRI, NGOs and DAE presented relevant research papers in different sessions. Farmers, beneficiaries, officials from Northeastern districts attended the fair and learned lot. Stalls of PETRRA sub-projects displayed communication materials in the form of poster, brochure, booklet, leaflet, video, painting etc for easy understanding of the audience. Through such events PETRRA was interested to communicate information on different innovations to its stakeholders including men and women resource poor farmers, GO-NGO policy makers and extension agents. The 2004 fair successfully brought together stakeholders from the northeast region. Apart from discussions and presentations, sub-project research innovations were presented in the form of Pots songs, Folk songs, Jari Gaan, Puthipath etc by the artists of GO-NGOs and cultural organizations from different districts led by different partner organizations.

II. Rice Yield Maximization

The purpose of the farmer's participatory yield maximization of rice was to demonstrate, how resource poor farmers could maximize rice production with higher income from their small plots. Rice yield maximization trial was conducted with 560 resource poor farmers in seven districts of AAS working Northeast, Northwest and Southwest regions of the country. Three tested high yielding rice hybrid cultivars (Sonarbangla-1, Hira and Aftab LP50) were used in participatory rice yield maximization trial during 2003-4 Boro seasons. The overall performance of rice hybrids was found tremendous and very much encouraging the approach to replicate all over the country with all categories of farmers including resource poor farmers.

III. Plant health services initiatives

The Participatory survey was undertaken to know the consensus opinion of the farmers about the plant health problems and their management practices. Necessary information related to plant health problems was collected in a participatory manner using focus group discussion. Thus AAS/CABI Bioscience conducted the survey in 2004 Summer-I, Summer-II and Winter crop seasons at 35 villages in Natore, Norsingdi and Moulvibazar districts. In the survey, farmers were asked to express their opinion on existing plant health problems, status of the pest infestation, pest identifying characters, nature of damage or symptoms, favourable conditions of pest attack, period of pest severity and the existing pest management practices. In the survey gathered huge local knowledge on plant health problems and their management, which can be useful information for plant health problems and their management strategy. Indiscriminate use of authorized and unauthorized pesticides at very higher rates of application and very frequent in crop protection was found very common in survey areas. Farmers of the survey area were inclined to apply some unauthorized highly toxic pesticides as few insects have already gained greater resistance against chemicals. Some vegetables were found to spray pesticides almost everyday to control their infestation. Few farmers were found to spray pesticides frequently only for selling their vegetables in the market and uninterested to consume themselves. Due to application of pesticides excessively or using the wrong chemicals, about one third of the farmer’s vegetable crops revenue is spent on buying pesticides. Moreover excessive and indiscriminate use of pesticides in crop protection has been creating hazards in many ways, as result farmers noticed several consequences such as extinction of fishes, frogs, birds etc and physical sufferings/disorders of human body in the survey areas. The "plant health services initiatives in Bangladesh" project was funded by CABI Bioscience, UK under the authorization of NGO Affairs Bureau (ABBU/PRO-2/AAS/836/2003-141, Date: 26.02.2004 for the period of 8 months during March 2004 to December 2004.

Besides the frequent pesticide application, few farmers were found to successfully control some major pests through the used of some innovative methods. In the survey of three crop seasons, a total of 35 innovative methods were identified in three districts where about 10-13 methods were found to be highly effective to control the pest. Some innovative methods were found to be cost effective, readily available and very effective against the pest where it has become difficult to achieve control by pesticides. The project has developed an effective plant health management system for providing a better flow of information about diseases and pests to the scientists, researchers and extensionists in the country.

IV. Field trial on short duration rice cultivars

Farmer's participatory field trial on three Nepalese short duration rice cultivars (Pant dhan 10, Judi 582 and PNR 381) was conducted during 2004-05 Boro seasons with 5 partner NGOs (PNGOs) in Moulvibazar, Habiganj, Jhenaidah, Sirajganj and Natore districts. This field trial on short duration rice cultivars was undertaken in collaboration with the centre for Arid Zone Studies-Natural Resources (CAZS-NR), University of wales, Bangor, UK under a project on "Improvement of Rainfed Cropping Systems in the high Barind tract of Bangladesh", funded by DFID, UK. Three Nepalese short duration rice cultivars were tested against BRRI dhan 28 and Aftab LP 50 (F_1) at 6 communities in Northeast, Northwest and Southwest regions. Seeds of Pant dhan 10, Judi 582 and PNR 381 received from PROVA (a local NGO), Rajshahi.

Recommended cultural practices were followed during production cycle of the crop. Decided data/information was collected from the trial plots for preparation of the report on the field trial of short duration of rice cultivars.

The paddy yield of three short duration rice cultivars failed to produce higher yield than BRRI dhan28. Growth duration of the three cultivars was found little higher than BRRI dhan28. Aftab LP 50 (F_1) produced significant higher yield than four short duration rice cultivars including BRRI dhan28 with very little higher duration. Yield, growth duration, tiller production and yield components of rice are provided in the following table:

Table: Comparison of different characters of five rice cultivars

Parameters	Pant dhan 10	Judi 582	PNR 381	BRRI dhan28	Aftab LP 50	Average
1. Paddy yield (t/ha)	5.64	5.96	5.39	5.53	7.25	5.95
2. Growth duration (days)	138	140	141	136	142	139
3. Maximum tillers/hill (Nr.)	27.71	27.15	32.62	30.37	23.43	28.26
4. Panicles/hill (Nr.)	16.51	15.93	18.39	22.57	14.94	17.67
5. % Effective tiller	66.32	69.76	61.11	74.31	74.81	69.26
6. Filled grains/Panicle (Nr.)	104.60	103.91	71.18	103.07	115.40	99.63
7. Unfilled grains/panicle (Nr.)	50.10	33.29	52.01	18.97	46.46	40.17
8. % Filled grain	61.54	75.78	67.13	84.46	71.39	72.06
9. 1000 grain weight (gm)	24.0	24.0	23.0	22.0	31.03	24.81

V. Operating Fish Hatchery

AAS has been operating its fish hatchery at Alampur, Kushtia with trained fishermen on contractual agreement since 2000. Under such sub-contract system a total of 455 Kg quality hatchlings of the following seven different carps and Thai Sarputi has been produced and distributed among the resource poor fish farmers and fisherman in Kushtia district during the reporting period:

SL #	Carp type	Quantity (Kg)
1.	Rohu	80
2.	Mrigal	60
3.	Catla	70
4.	Silver carp	80
5.	Big head	65
6.	Common carp	40
7.	Grass carp	20
8.	Thai Sarputi	40
Total		**455**

VI. Seed production and distribution

Potato

A total of 14 acres seed potato (tuber) plots was established and produced 126 MT of different generations of Diamant and Cardinal potato seed in Chuadanga district during 2002-03 Rabi season for distribution among the AAS trained potato seed farmers in Natore and Pabna districts. Variety wise potato seed production detail is given below:

Variety	Generation	Area	Seed Production
Diamant	A to B	5 Acres	52 MT.
Diamant	B to C	7 Acres	56 MT.
Cardinal	B to C	2 Acres	18 MT
Total		**14**	**126 MT**

Total of 126 MT of Diamant & Cardinal potato Seed of different generations were produced and stored (Jessore) with the contractual understanding with private seed Co. (Agro-concern Ltd). Total quantity of stored seed potato (B & C) distributed among AAS partner resource poor farmers and small farmers on cost basis in Natore and Pabna districts during 2003-04 Rabi season.

Onion

A total of 6 acres as demonstration Onion Seed (Var. Taherpuri) plots were established with partner contract farmers of Agro-Concern Ltd in Natore district during 2003-04 Rabi season. A total of 1800 kg quality seed was produced from 6 acres onion seed plots. Total quantity of produced seed was procured and stored in Chuadanga. AAS seed Agronomists /Specialists monitored the quality of seed during storing period. Seed packaging was done under the supervision of AAS assigned seed Agronomists/Specialists for marketing/ distribution among the partner resource poor farmers and small farmers of AAS network POs during 2004-05 Robi Season.

Rice

AAS distributed a total of 29250 kg of 2 hybrids, 3 MVs, 4 fine & aromatic and 9 glutinous rice seeds among partner resource poor farmers during 2003-4 Boro and 2004 T. Aman seasons in 3 working zones. Season wise quantity of rice seed distributed among the resource poor farmers on cost basis in three working zones is given below.

Season	Varity (Type)	Seed (Type)	Quantity (Kg)	Seed Source
2003-4 Boro	Modern Varieties (MVs)	Foundation Seed (FS)	10,000	BADC
	Hybrid	TLS/Certified seed (CS)	12,000	MSC, SSC, ABL
2004 T. Aman	MVs	FS/CS	6,000	BADC, BRRI
	Fine, Aromatic & glutinous (FAG)	TLS/Farmers seed	1250	Farmers

VII. Uptake of high value crop varieties

AAS, from its earliest days, has focused most of its resources and energy on promoting high value crop production in Bangladesh. The overall fertility of the land, the small plot size and cultivation intensity; the easy availability of supplemental irrigation supplies all argue in favor of increased cultivation of high value cash crops in Bangladesh. Accordingly, wherever appropriate, AAS introduces new, high value cash crops and accompanying production packages. More than 90% of these available high value crop varieties and production packages have been demonstrated through AAS partner farmers/partner organizations. Of these, more than 50 crops and associated production packages have been accepted by farmers at the field level and have reached a high level of commercialized of production. The high value crop uptake process is participatory and is demand-led by the involved farmers.

AAS has been continuing to introduce new varieties of high value cash crops with appropriate production packages in all of its project areas. AAS has demonstrated about 250 different new cash crop varieties during the reporting period in 3 working zones. The varieties are presented in the following list:

Crop	Varieties
Papaya	**OP:** Kashimpuri, Gazi, Sweety
	F_1: Marvalous, Red Laddy
Radish	**OP:** Tasakisun, Durbar, Rocky 45, Early 40, Mino-early, Prinky, Anarkali, White Rocket
	F_1: Rocket, Averest, Topical Sweet
Lalshak	**OP:** Altapeti, Local (Rajshahi), Champabanu, Raktaranga
Corriander	**OP:** L.B. 60, Sugandha, Lotus, Bilati Dhania
Cauliflower	**F_1 (Early):** White Short, SC-2-33, Snow Queen, Rain master, Heat master, Early bonus, White Diamond
	F_1 (Mid Early): Camellia, Elora, White Contensa, Snow star
	F_1 (Optimum): Monalisa, Sagorika, Sirajiku, White flash, Snow crown
	F_1 (Late): White stone, Chameli, Miky way, Snow grace, Kashmiri, Candid charm
Cabbage	**F_1 (Heat tolerant):** Super tropic, Summer boy, K-K cross, K-S cross,
	F_1 (winter): Green Diamond, Helmat, Laurels, Autum Queen, Altas-70,
Tomato	**OP:** Ratan, Pusharobi, Marglobe, Roma VF
	F_1: Lovely, Hightom, Surokha, Mohua, Wonderful, Genius, Noyantra, Ruposhi, Utshab, NS-815, Summer Best, Epoch, Jamuna, Delta, Shobol, Shathi, Rupali, Rojoni
Chilli	**OP:** Balijuri, Bindu, Magura, Chatmohor, Zia, Pusha jwala, Major
	F_1: Mohona, Balijuri, Bindu, Roshni, Sonic, NS-1701, Dewali
Brinjal	**OP:** Singnath, Uttara, LIV
	F_1: Chomak, Ullash, Utshob, Hashi, Khushi, Banani
Khira	**OP:** Naogaon green, LIV
	F_1: Shatapdi, Sital
Cucumber	**OP:** Baromashi, Green King, Shila, LIV
	F_1: Nice green, Even green, Express green, Ninja, Beautiful, Titumir, Hemel, Machranga, Alavy, Shohagi
Bitter gourd	**OP:** Goj Korala, LIV, Taj-88
	F_1: Teea, Eureka, Jumboo, Good boy, Wiseman, Manik, Moni, Green long, Green Rocket, Tuta, Unique
Pumkin	**OP:** Baromashi, Bikrampuri, LIV
	F_1: Suprema, Sweety, Shanti, Bangkok-1, Bangkok-2, Maxima,
Okra	**OP:** BARI-1, Arkaonamika, Parbonikranti, OK -285, Silvia
	F_1: Porosh-2, Apurba, Niribili, Shobuj bangla, Aleya, Sirajdollah, Robin, Lucky-7

Dantha	Katua, Bash pata, Panna, Red Tower
Carrot	**OP:** New Kuroda 35
	F_1: Yellow rocket, TI-95
Bottle gourd	**OP:** BARI Lao-1, Khet lau-1,
	F_1: Martina, Jamali, Jhenai, Green beauty, Kaberi, Dalisay
Yard long bean	**OP:** Kagornotica, Toki, Testy Thai, Yamuna
Country Bean	IPSA-1, IPSA-2, BARI Seam 1 & 2, LIV
Onion	**OP:** Taherpuri/Faridpuri, Nasik Red N-53, Puna red, Jumbo EW 40
Spinach	Kopi Palong, Sathi, LIV
Kholrabi	**F_1:** Pride of Mollika, Challenger, Unique ball, Early 005, Early ball
Potato	Raja, granula, Diamant, Binella, Cardinal, Patronese, Multa
Garlic	LIV
Sugarcane	Isd-16, Isd-20, Isd 21, Isd 2/54, LJ-C
Groundnut	Maizerchar Badam (DAC-1), Basanti Badam (DG-2), Tridana Badam (DM-1), Jhinga Badam (ACC-12), BARI china Badam-m (M-5), BINA china Badam-1, 2 & 3
Maize	**F_1:** Mukta, 90 M, Puja, Pac-984, QPM-2000, Modhu 3, Modhu 4, Pop-Burst, Pac-11, Super Sweet Pac-10
Broccoli	**F_1:** Premium crop, Royal green, Lidia
Capsicum	**OP:** California wonder, Yellow wonder
Ridge gourd	**F_1:** Hero, Hercules, Green Sword, Nilima, Boundary, Ishakha, Padma, Maloti, Diet, Luxury, S-5, NS-1218
Indian Spinach	LIV (Rajshahi), Madhuri
Ash gourd	**OP:** Duranta, Durabar, Pole star
	F_1: Publi, Jupiter, Pole Star
Banana	AAS Sagar-1, Amita Sagar, Sobri, Mehar Sagar
Sorghum	Hybrid sorghum (GK 4009)

VIII. Building capacity of partners

AAS has presented a series of agricultural training programmes for the benefit of more than 1800 staff of AAS and its partner organizations (NGOs & CBOs) along with relevant public & private sector organizations since its founding in 1989.

About 160 staff of AAS partner organizations (POs) along with relevant public and private sector organizations received training under PETRRA's sub-projects and other current project supports during their reporting period. Chief executives and staff of POs, public and private sector organizations attended in various workshop, seminar, meeting, and field days etc on the relevant issues during this reporting period. Partner organizations participated in various trials, demonstrations, and studies during this reporting cycle. AAS has

undertaken a series of training sessions and courses in several important areas including the following:

- ✓ Participatory training on FARMSEED method
- ✓ Improved seed technology for rice and non-rice
- ✓ PIPNM strategy and its extension
- ✓ Training on rice hybrid technology dissemination
- ✓ Orientation training on rice hybrid study
- ✓ Production and marketing of FAG rice
- ✓ Use of women-led group extension method
- ✓ Use of family approach in Agricultural technology transfer
- ✓ Extension of SRI strategy
- ✓ Awareness on Arsenic in ground water and food chain
- ✓ Introduction of community based integrated rice-duck farming
- ✓ Use of LCC in Urea top-dressing for rice production
- ✓ Practical use of BRKB content at TI centre
- ✓ Orientation on BRKB content and its need assessment.
- ✓ Orientation on uptake of high value crop varieties
- ✓ Sustainable rice yield maximization strategy
- ✓ Orientation on Plant health services initiatives
- ✓ Small scale fish hatchery management
- ✓ Farmer group approach for sustainable agriculture
- ✓ Method of modern rice production
- ✓ Intensive carps poly culture
- ✓ BDS strategies for Agriculture
- ✓ Gender issue and their development strategy
- ✓ Low cost irrigation system establishment and management.
- ✓ Introduction of In-field irrigation techniques
- ✓ Nursery establishment and management
- ✓ Strategy on establishment of exotic fruit orchard

IX. Developing skill and capacity of partner farmers

AAS has been using participatory training and motivational approaches to develop the skills and capacities of its partner farmers since it's founding in 1989. AAS conducted series of training and motivational activities under different projects to develop the skill and capacity of more than 20,000 farmers in its three working zones in the country during this reporting period. AAS provided practical training and orientation on several issues including the following areas to more than 20,000 farmers including resource poor farmers (RPFs); 30% of who were resource poor female farmers:

- ✓ Quality seed production through FARMSEED approach
- ✓ Participatory integrated plant nutrient management in rice production
- ✓ Improved production practices for hybrid rice
- ✓ Improved production practices for modern rice
- ✓ Improved production practices for FAG rice
- ✓ Improved production practices for rice seed
- ✓ Improved production practices for Onion seed

- ✓ Improved production practices for non-rice crops
- ✓ Orientation on Women-led group extension method
- ✓ Orientation on family approach extension method in technology transfer
- ✓ Orientation on SRI strategy
- ✓ Awareness on Arsenic in ground water and food chain
- ✓ Orientation on community based integrated rice-duck farming
- ✓ Practical training on the use of LCC
- ✓ Audio-video multimedia live sample training at community on rice
- ✓ Practical training on rice yield maximization
- ✓ Safe and effective use of pesticide in crop production
- ✓ Intensive fingerlings production method
- ✓ Intensive carps polyculture in pond
- ✓ Production techniques for exotic crop varieties
- ✓ Intensive crop production in charland
- ✓ Community based commercialized high value crop production strategy
- ✓ Orientation on BDS for agricultural products
- ✓ Nursery establishment and management
- ✓ Low cost irrigation system establishment and management
- ✓ Role and responsibility of women in agriculture
- ✓ Practical training on In-field irrigation technique

X. Formation of farmer groups

A total of 650 farmer groups have been formed with 14380 partner farmers in 73 upazilas of 24 districts in 3 working zones up to December 2004. These are all informal agricultural production/seed production groups and committed to create their own wealth using AAS's strategies throughout the year. Total of 150 farmer groups with 3605 partner farmers were formed in 3 working zones during January-December 2004. Each farmer group has received various training courses and motivational activities since it formed at each community. The zone-wise total number of farmer group formed during the reporting period is given below:

Zone	# of farmers group	# of Partner farmers
North	55	1320
South	30	660
East	65	1625
Total	**150**	**3605**

XI. Agricultural technology and technological materials collection and documentation

AAS was sub-contracted by IRRI to identify suitable agricultural technologies; to collect related materials for documentation; make selections and prepare the selected materials for storage in the Bangladesh Knowledge Bank. The purpose of this was to allow the project's targeted

farmers timely access to the selected technologies and appropriate explanatory materials (Leaflets, brochures, booklets, manuals, etc.).

Agricultural Advisory Society (AAS) undertook the assigned task in behalf of IRRI-Dhaka in the context of EC's "Food Security for Sustainable Households Livelihood" (FoSHoL) project. In this regard AAS conducted an agro-based regional technology search and collected related materials from a variety of source. As per its assignment, AAS documented the potential agro-based technologies along with their materials and earmarked the best of these for storing in the knowledge bank for future use by all other interested users in the country.

During implementation of this agro-based regional technology search and related materials collection and storage; several processes were fine-tuned; these are (a) The Three step process for technology identification (b) The Six step process for focus group discussions (FGD), (c) The Seven step process for district workshop and (d) The Four steps process for technological materials collection and storage.

A total of 998 potential technologies (on-farm and non-farm) were identified/selected for eleven districts through implementation of "three steps process" of agro-based technology search in seven regions of the country. The number of technologies selected for non-rice crops was highest with 273 (41.3%) followed in order by livestock (142), rice (134) and fisheries (112).

A total of 1824 technological materials were enlisted, of which 1682 (92.2%) technological materials were enlisted under on-farm and 142 (7.79%) technological materials were enlisted under non-farm. Out of enlisted 1824 technological materials, 803 (44%) technological materials were selected for BKB, of which 748 (41%) technological materials were selected for on-farm and only 55 (3%) technological materials selected for non-farm. Out of 1824 technological materials, 1808 were documented with hard copy and 16 with soft copy.

The number of selected technological materials for BKB was highest for crop sector with 385 (51.5%) technological materials followed in order by PETRRA innovation (214), fisheries sector (73), and livestock sector (63). 736 technological materials were proposed for validation before storing in BKB by the farmers. Secondary stakeholders proposed a total of 147 technological materials for validation before storing in BKB.

XII. Technology for char dwellers

AAS conducted an agro-based regional technology search for the dwellers of charland in Faridpur, Jamalpur and Noakhali districts during 2004-2005 under the funding support from IRRI/EC's FoSHoL project. As per its assignment, AAS documented the potential agro-based technologies suitable for charlands for storing in the knowledge bank for future use by all other interested users in the country. During implementation of this agro-based regional technology search, several processes were fine-tuned; these are (a) The three process for technology identification; (b) The six step process for focus group discussion; (c) The Seven step process for

district workshop. Brief description on selected technologies for charlands in Jamalpur, Faridpur and Noakhali districts is given below:

Faridpur: During two FGDs, on the basis of the small and marginal farmer's existing practices, problems and requirements, location specific demand-led 41 technologies were identified. In district workshop, out of this 41 technologies, 7,16,10 and 8 technologies were classified into four sectors such as rice; non-rice, livestock and fisheries. During illustration of ITDG documented non-farm technologies, out of 107 technologies, the participated farmers accepted 53 technologies. During district stakeholders meeting, out of 35 suggested technologies, 19,3,9,3 and 1 technologies were classified into 5 sectors such as rice, non-rice, soil health management, livestock, fisheries and non-farm based technology respectively. During district workshop, out of 38 suggested technologies, 20,6,7 and 5 technologies were classified into four sectors such as rice and non-rice, livestock, fisheries and non-farm activity based technology respectively.

Jamalpur: Eight-five technologies were suggested by the charland group of district workshop participants for the small and marginal farmers of charland during the group work in the workshop. Among the 85 technologies 8,37,18,17 and 5 technologies were classified as rice, non-rice, livestock, fisheries and non-farm technologies respectively.

Noakhali: Eighty-eight technologies were suggested by the charland group of district workshop participants for the small and marginal farmers of charland during the group work in the district workshop. Among the 88 technologies 7,57,5,11 and 8 technologies were classified as rice, non-rice, fertilizer, fisheries and livestock based technologies respectively.

XIII. Technology for Hoar (Sunamganj)

AAS conducted an agro-based technology search for the dwellers of Hoars in Sunamganj district during 2004-2005 under the funding support from IRRI/ECs' FoSHoL project. As per its assignment, AAS documented the potential agro-based technologies sustainable for Hoar areas for storing in the knowledge bank for future use by all other interested users in the country. During implementation of this agro-based technology search for hoar dwellers; several process were fine-tuned; these are (a) The three step process for technology identification, (b) The six step process for focus group discussions and (c) The seven step process for district workshop. A total of 74 potential technologies were selected where 22 technologies were rice based, 12 technologies were non-rice based, 16 technologies were livestock based, 11 technologies were fisheries based and 13 technologies were non-farm based for hoar dwellers in Sunamganj district.

XIV. Post flood Agro. Rehabilitation

AAS was involved in post flood agri–rehabilitation programs of 2004 devastating floods in its seven working districts with 36 partner organizations (NGOs/CBOs) under the direct funding support from IRRI and GROS-Belgium and additional resources along with logistics from AAS.

In this regards, AAS distributed 30,000 Kg foundation seed of BRRI dhan28 and 29; 6000 Packets of vegetable seed and 1500 Kg rice hybrid seed as the part of post flood agro-rehabilitation of 2004 devastating floods among the flood affected 11,500 resource poor farm families at about 250 communities in seven districts of Northeast (Moulvibazar and Habiganj districts), Northwest (Natore, Sirajganj and Pabna districts) and Southwest (Jhenaidah and Magura districts) regions during 2004-05 winter seasons.

AAS distributed foundation seed of 10,000 Kg BRRI dhan 28 and 20,000 Kg BRRI dhan 29 for seed production (3 Kg/farmer/variety) under the FARMSEED strategy of AAS with 10,000 resource poor farm families in Northeast and Northwest regions respectively. This seed production programme was under taken in collaboration of 200 AAS existing FARMSEED farmer groups and their partner organizations in Northeast and Northwest regions.

AAS distributed 6000 Packets of vegetable seeds (Radish, Lalshak and pumpkin) among the 6000 resource poor farm families of FARMSEED groups to grow such vegetable within their homestead during 2004-05 winter and 2005 Summer-I seasons.

AAS distributed 1500 Kg Chinese rice hybrids seed among 1500 resource poor farm families (1Kg/family), of whom about 85% was women-led families of AAS established women-led groups in Northeast, Northwest and Southwest regions.

Organizational Particulars, Strength and Strategy

Year of Establishment: 1989

Chief Executive: Md. Harun-Ar-Rashid

Mailing Address

<table>
<tr><td colspan="3">Head Office</td></tr>
<tr><td colspan="2">Agricultural Advisory Society (AAS)
House # 8/7, Block - B, Lalmatia, Dhaka-1207
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<tr><td>Zonal Office</td><td colspan="2">Area Office</td></tr>
<tr><td rowspan="2">Northeast
Agricultural Advisory Society (AAS)
Varaura Road, R/A
Srimangal, Moulvibazar</td><td rowspan="2">Agricultural Advisory Society (AAS)
Motkhola Road, Pakundia Bazar
Pakundia, Kishoreganj</td><td>Agricultural Advisory Society (AAS)
College Road, Jamalpur</td></tr>
<tr><td>Ballah gate, Sayestaganj, Habiganj</td></tr>
<tr><td>Northwest
Agricultural Advisory Society (AAS)
Mirdha Para
Bonpara, Boraigram, Natore</td><td>Agricultural Advisory Society (AAS)
Rangpur Road, Bangali Pur
Saidpur, Nilphamari</td><td>Agricultural Advisory Society (AAS)
College Road, Tarash, Sirajganj</td></tr>
<tr><td>Southwest
Agricultural Advisory Society (AAS)
Adarsha Para, Jessore Road,
Jhenaidah</td><td>Agricultural Advisory Society (AAS)
Zaman Manzil
1, Goalchamot Road
Faridpur</td><td>Agricultural Advisory Society (AAS)
Satla, Uzirpur,
Barisal</td></tr>
</table>

Legal Status

AAS's Registration information:

Organization / Authority	Registration's #	Date
i) NGO Affairs Bureau	No. 1015	Date: 4.3.1996/11.7.2002 (renewed)
ii) Society Registration, Joint Stock Companies	No. 1379 (13) 91	Date: 5.2.1991
iii) Seed Wing, Ministry of Agriculture	SPMI/0432/2000	Date: 3.1.2000

Operational Areas

Working areas and involved PNGOs:

District	Name of Upazila	Nr. of Union	Nr. of Village	PNGOs (Nr.)
Zone: Northeast				
Moulvibazar	Sadar, Srimangal, Kamalganj, Kulaura	22	54	9
Habiganj	Madhobpur, Chunarughat, sadar, Bahubol, Baniachaung, Lakhai	25	49	12
Sylhet	Sadar, Companiganj, Jaintapur, Fenchuganj	6	14	4
Sunamganj	Sadar, Bishwamvarpur, Tahirpur, Jamalpur, Derai	6	12	3
Kishoregonj	Pakundia, Sadar, Hossainpur, Karimgonj, Kotiadi, Bajitpur, Kuliarchar	37	71	15
Mymensingh	Nandail, Gofargoan, Sadar, Muktagacha	7	14	5
Narsingdi	Sadar, Shibpur, Raipura	8	18	3
Jamalpur	Sadar, Madarganj, Melandoha, Sarishabari	10	35	1
Zone: Northwest				
Gaibandha	Polashbari	2	6	2
Rangpur	Pirgonj	2	6	1
Nilphamari	Saidpur	1	4	1
Dinajpur	Kaharol	2	3	2
Sirajgonj	Tarash, Shahzadpur, Ullapara, Raiganj	20	53	7
Natore	Sadar, Gurudashpur, Boraigram, Singra, Lalpur, Bagati Para	25	97	9
Pabna	Sadar, Atgharia, Santhia, Sujanagar, Bera	12	23	6
Rajshahi	Charghat, Sadar	8	21	2
Chapai Nawabganj	Sadar, Shibganj	10	25	1
Naogaon	Atrai	1	5	1
Zone: Southwest				
Faridpur	Sadar, Madhukhali	9	19	5
Jhenaidah	Sadar, Kaligonj	6	32	5
Jessore	Sadar, Sharsha, Jhekorogacha	6	12	1
Magura	Sadar, Salikha	6	22	4
Kushtia	Sadar, Kumarkhali	6	16	5
Rajbari	Sadar, Baliakandi	4	12	1
24	**73**	**241**	**623**	**105**

AAS working areas and infrastructures: Since its inception, AAS has implemented a numerous projects to alleviate poverty among the resource poor and small farmers of Bangladesh. Thus AAS has been implementing its project activities at more than 600 villages in more than 200 unions under more than 70 upazilas of 24 working districts with about 100 partner NGOs in three working zones (Northeast, Northwest and Southwest) of the country. Since inception, AAS has been established offices and relevant infrastructures (Training centres, TI centre, fish hatchery etc) in the three working zones to implement its project activities at the grassroot levels

Collaborating and sponsoring agencies

1. CABI Bioscience, UK	2. IRRI	3. DFID	4. GROS, Belgium
5. CIMMYT	6. CAZS, University of Wales, UK	7. BRRI	8. DAE
9. BADC	10. Seed Wing, MoA	11. BARI	12. BSMRAU
13. DLS	14. DoF	15. BINA	16. BRAC
17. Kushtia Seed	18. Aftab B.M. Co.	19. Jamalpur Seed	20. Zillion Seed Co.
21. Agro-Concern	22. Supreme Seed Co.	23. RDA, Bogra	24. EC
25. RDRS			

The AAS Executive Committee (EC)

Name of Persons	Designation	Occupation	Years of Term of Office
Md. Harun- Ar- Rashid	President	ED, AAS	1991- till today
Mr. Bazlur Rahman	Vice-President	Consultant, IRRI	2000- till today
Mr. Muktadir Ahmed	General Secretary	Director, KBAL	1995- till today
Mr. Khandoker Anisur Rahman	Assistant General Secretary	ED, PRISM Bangladesh	2004- till today
M.A. Bani Amin	Treasurer	Director, IDE	1995- till today
Mr. Faisal Murshed	Member	Director, KBAL	1995- till today
Mr. A. Mannan Sarker	Member	MD, KABL	1995- till today

The AAS Advisory Board

Name of Persons	Designation	Occupation	Years of Term of Office
Dr. A. J. M. Azizul Islam	Director	Former DG, BRRI	1996-till today
Prof. Dr. Shamsul Haque	Director	Professor	1996-till today
Dr. David Gisselquist	Director	World Bank Consultant	1991- till today
William H. Derrenger	Director	Business Consultant	1991- till today
Md. Harun- Ar- Rashid	Director	Executive Director, AAS	1991- till today

AAS Partner NGO Network

AAS has historically implemented its rural based, agricultural productivity enhancing projects through its large network of rural based Partner Organizations (NGOs/CBOs). AAS has been strengthening and expanding its "partner NGO network" all over the country since 1989. At present about 150 NGOs directly and indirectly are involved with AAS partner NGO network. Moreover, 105 NGOs are involved for implementing AAS developed intensified crop management strategies with their client resource poor farmers in 3 working zones. A total of 93 AAS partner organizations (NGOs and CBOs) were responsible for implementing PETRRA funded thirteen sub-projects and special activities in 62 upazilas of Moulvibazar, Habiganj, Sylhet, Sunamganj, Rajshahi, Chapai Nawabganj, Natore, Pabna, Sirajganj, Bogra, Naogaon, Jessore, Jhenaidah, Kushtia, Magura, Rajbari, Faridpur, Gopalganj, Mymensingh, Jamalpur and Gaibandha districts under the umbrella network of AAS. A total of 91 partner organizations have received training on PETRRA project activities for its implementation with their partner resource poor farmers in three working zones. Total of 36 AAS partner NGOs have been developed for a partnership network all over the country in 3 working zones for extension of intensive carp poly-culture, fish fingerling production and distribution with donor support in future.

One of AAS's great strengths is that it is able to work through a large network of experienced grassroots partner organizations. Large number of the skilled staffs, established relevant infrastructures and sufficient micro-credit of the members of AAS partner NGO Network are the foundation strength of AAS to implement the suitable project activities on the cost-effective basis. AAS maintains strong relationship with relevant private sector agricultural inputs supply agencies. Accordingly, AAS, being a relatively small organization itself, is able to cast a very big shadow over a large area. AAS could have such an impact on the basis of its own resources alone. Rural youth groups, women groups, other CBOs and local NGOs representing diverse rural constituencies are all part of the AAS-Partnership Network. Accordingly, AAS gains strength from its network partners. On the other hand, AAS maintains close and collegial relationships with a large number of well funded and staffed public sector and international organizations that have solid agri-technical credentials. These include IRRI, BRRI, BARI, BARC, BADC, DAE, BARD, CIMMYT, FAO, CABI Bioscience and others with whom AAS maintains and sustains long-term collaborative relationships.

Staff strength

Besides it's permanent staff, AAS employs personnel as per the requirements of its individual projects. Moreover, AAS also utilizes personnel on a voluntary basis. The personnel of AAS are posted at district, thana, union and village levels to work in close contact with its client farmers, the resource poor.

AAS has a total of 53 staff, of which 41 are permanent, 6 consultants and 6 advisors, as well as part time and seasonal staff for implementing its program activities in 24 districts. Out of 53 staff, 42 staff are technical staff, specialized in Agriculture, Irrigation and water management, Environment, Seed technology, Aquaculture, Business Management, BDS etc. AAS personal are all experienced, highly qualified professionals in their own field, who contribute to the success of its projects and the development of Bangladesh's agricultural capacity. The AAS staff is fully committed to building the skill and technical capacity of poor farmers; to create wealth for them in order to improve their livelihoods. Our dedicated staffs play a key role in this.

Financial status, experience and management

The financial transactions are maintained following the international accounting standards and rules of the government of Bangladesh. An annual audit is conducted at the close of every calendar year by the reputed audit firm.

The internal audit team periodically checks the financial transactions and justifies the utilization of fund and report to the Executive Director. The accounts and finance personnel control the fund utilization according to the budget and physical output. The external audit team of registered audit firm usually checks the books of accounts and records and report to the CEO. The Executive Committee, the Advisory Board and the General Committee of AAS approve the financial Audit report. Audited revenue Income and expenditures of AAS for 2004 is given below:

Statement of Income and Expenditure
1 January to December 31, 2004

Income	**Taka**
Overhead received from PETRRA	696,091
Guest House	34,758
Fund received from PETRRA (Sch-3)	4,387,692
Fund received from PETRRA (Workshop)	520,681
Fund Receive from IRRI etc for Agri-Rehab. Project	100,500
Total Income	**5,704,964**
Expenditure	
Salary & Allowance	215,350
Office Expenses	65,339
Communication Expenses	13,682
Travel & D/A bill	30,860
Rent & Utilities	294,949
Carrying Charge	1,700
Seed Purchase	1,450
Audit Fee	4,000
Guest House	36,194
Post flood Agri-Rehabilitation	100,500
PETRRA regional workshop	520,681
PETRRA sub-projects expenses	4,387,692
Depreciation (Sch-1)	32,399
Write off	14,185
Total Expenditure	**5,718,981**
Excess of Income over Expenditure transferred to Balance sheet	**20,741**
Total	**5,739,722**

Management of AAS

The Executive Committee headed by the president of the society does the project Activities of AAS and policy planning. The Executive Committee is elected/approved by the General Committee. The Executive Director of AAS implements the projects and programs through AAS staff and its partner organizations in the working areas. The Executive Director carries out the activities of AAS with the assistance of a group of professionals appointed by him and approved by the Executive Committee. The Executive Director is accountable to the Executive Committee, General Committee and Advisory board of the AAS. The hierarchy is strictly maintained according to the organogram of the organization. The plan of activities is implemented according to the guideline of the organization through the field personnel and assures the best quality of outputs.

Monitoring, Evaluation and Reporting

The input and output is continuously monitored by the program personnel and evaluated according to the result oriented monitoring indicators (ROMI). The sponsors according to their guidelines also evaluate the outputs. Moreover, the donor-funded projects are monitored and evaluated on basis of agreed indicators at Goal, Purpose, Outputs and Activities levels of the logical framework of the projects. The monitoring and evaluation of the projects are implemented through using participatory approach. The monitoring and evaluation team is ensured, the participation of the primary beneficiaries during monitoring and evaluation of the progress and impact of the projects.

The monitoring, evaluation and reporting requirements for AAS's program initiatives are always carefully specified in each project's contract documentation and are usually based on the log frame that defines the level of resources being committed to each project and the expected, verifiable outcome of the project. Accordingly, AAS is accustomed to doing its work in the context of the customary, international standards of Monitoring, Evaluation and Reporting that are currently prevailing in the multi-national donor community.

In this regard, AAS is known to rigorously follow the Monitoring/Evaluation and Reporting requirements specified by each of its donor sponsors. Generally speaking, there is a brief inception/need assessment or benchmark survey report which describes the beneficiaries to be served; the work to be done, the resources being committed to the work, the specific work sites and activities to be undertaken during the course of the project (Work plan/Time Line). Consideration is given here to areas where problems may be encountered how these might be mitigated and also to whether subsequent phases of the project are contemplated. Finally, the initial report sets out the agenda of clearly defined, achievable and objectively verifiable project result/outputs to which AAS is committed.

With this as the backdrop, AAS normally provides its sponsoring funding agencies with quarterly progress reports that compare its projected results with the actual results achieved for each reporting period. AAS is accustomed to providing its donor sponsors with an externally prepared Certified Financial Report on an annual basis. At mid-term in each project (usually annually) AAS is accustomed to submitting its fourth quarter report as an internal evaluation report, which summarizes the project's achievements to date; detailing its successes and failures. In addition, AAS is accustomed to giving its full cooperation to a mid-term or end of phase external evaluation which is initiated/scheduled and funded by the sponsoring donor

AAS Publications

The publications (Scientific papers, reports, proceedings, seminar papers etc) prepared during the reporting period are given below:

- Proceedings of the Workshop on Arsenic in the Food Chain: Assessment of Arsenic in the Water-Soil-Crop Systems
- Family approach in extension. In Innovations in Rural Extension: Case study from Bangladesh
- Village soil fertility maps. In Innovations in Rural Extension: Case study from Bangladesh
- FARMSEED: putting farmers at the heart of the seed system. Innovations in Rural Extension: Case study from Bangladesh
- Breaking down barriers: village women spread the word. In Innovations in Rural Extension: Case study from Bangladesh
- Performance of 7 Cultivars of FAG Rice in Srimangal and Sadar Upazilas of Moulvibazar District, 2002-3 Boro Season
- Performance of 28 Cultivars of FAG Rice in Moulvibazar and Habiganj Districts**,** 2003 T. Aman Season
- Performance of 7 Cultivars of FAG Rice in Moulvibazar and Habiganj Districts, 2003-4 Boro Season
- Summarized Survey of Local Plant Health Knowledge
- Completion report on technology identification and documentation for knowledge bank of FoSHoL project
- Performance of Six Rice Hybrids Under Bangladesh Conditions, 2003-04 Boro Season
- Prospects and Potentials of Rice Hybrids in Bangladesh, 2004
- Participatory Integrated Plant Nutrient Management in Intensive Rice-based cropping, Seasonal Report of T. Aman 2003
- Report on specific rice knowledge needs assessment for BRKB content (Northeast region)
- Report on pilot testing of Bangladesh Rice Knowledge Bank (BRKB) with farmers and secondary stakeholders (Northeast region)
- Domestic export marketing system study for rural based fine, aromatic and glutinous (FAG) rice
- Evaluation report on production and marketing of fine, aromatic and glutinous (FAG) rice through farmer's participation in the northeast region of Bangladesh
- Completion report on production and marketing of fine, aromatic and glutinous (FAG) rice through farmer's participation in the northeast region of Bangladesh
- Completion report on strengthening FARMSEED (farmer to farmer seed exchange System) extension method
- Evaluation report on skilled family members extension approach for rice knowledge adoption
- Completion report on skilled family members extension approach for rice knowledge adoption

- Validation of the system of rice intensification (SRI) in eastern part of Bangladesh. In proceeding of the national workshop on system of rice intensification (SRI)
- Evaluation report on extension of the system of rice intensification (SRI) through verification
- Completion report on extension of the system of rice intensification (SRI) through verification
- Evaluation report on participatory integrated plant nutrient management for intensive rice-based cropping
- Completion report on participatory integrated plant nutrient management for intensive rice-based cropping
- Phosphorus availability in acid piedmont soil due to organic and inorganic amendments under aerobic and anaerobic conditions. In W.J. Chardon and G.F. Koopmans (Eds) critical evaluation of options for reducing phosphorus loss from agriculture, 16-19 August 2004, wageningen, the Netherlands
- Farmers participatory soil fertility mapping and integrated nutrient management for sustainable development, 7-10 June 2004, Erzurum, Jurkey
- Imbalance nutrition in rice: A cause of poor yield in Bangladesh, paper presented in Thursday seminar on January, 2004 at BRRI, Gazipur
- Farmer's indigenous knowledge of soil fertility evaluation, submitted for publication in international Journal
- Village level soil fertility map for field-specific nutrient management in rice, submitted for publication in international Journal
- Availability of Arsenic, phosphorus, potassium, Magnesium and Iron to Various vegetables grown in Northwest Bangladesh

AAS's Resources

SL #	Item	No
1	Head Office (Rented)	1
2	Zonal Office (Rented)	3
3	Area Office (Rented)	3
4	Training Center (Rented)	5
5	TI Center	1
6	Fish Hatchery	1
7	Computers (Sets)	20
8	Laptop	2
9	Multimedia	2
10	AC	4
11	IPS	5
12	Vehicles (Members-EC/Board)	2
13	Motor Cycles	8
14	By Cycles	30
15	Tables (All)	30
16	Chairs (All)	200
17	Moisture Meter (All)	10
18	Digital Camera	3
19	Generator	2
20	Fans (All)	40
21	Fax Machine	1
22	Telephone	8
23	Steel Almirah etc	25
24	Balance Normal	10
25	Electronic Scale (in grams)	1
26	Sealing Machine (All)	10

List of current referees

The following list of current clients who can confirm AAS's competency in the designated areas:

List of current or former referees

Dr. Noel P. Magor IRRI Representative-Dhaka House 9, Road 23, Block-B, Banani, Dhaka-1213 Phone: 8813842, 8817639-40 E-mail: nmagor@bdonline.com	Dr. M.A. Hamid Miah House 9, Road 23, Block-B, Banani, Dhaka-1213 Phone: 8817639-40 E-mail: h_miah@bdonline.com
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Mujibar Rahman Zillion Seed Co. 145, Siddique Bazar, Dhaka-1000 Phone: 7162766 E-mail: jamalpurseed@yahoo.com	Mr. Masud Alam Khan, Project Manager, FoSHoL Project ActionAid Bangladesh House # CWN (A) 32, Road # 43, Gulshan-2 Dhaka-1212 Phone: 9888006
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ORGANOGRAM OF AAS