

# Plant Health Services *initiative* (PHSi)

Quarterly Report:

Plant clinic network in Baraigram upazila  
***Establishment and operation of plant clinics***

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## **Acronyms :**

AAS	Agricultural Advisory Society
BAU	Bangladesh Agricultural University
BPH	Brown Plant Hopper
BRDB	Bangladesh Rural Development Board
BRRRI	Bangladesh Rice Research Institute
CABI	
CPDs	Community Plant Doctors
DAE	Department of Agricultural Extension
GPC	Global plant clinic
KGUK	Karbala Gram Unnayan Kendra
NGO	Non Government Organization
PHCs	Plant Health Camps
PHSi	Plant Health Services initiative
RDA	Rural Development Academy
RPC	Rural plant clinic
SAAOs	Sub-Assistant Agriculture Officer
UAO	Upazila Agriculture Officer
UK	United Kingdom

# Plant clinics network in Baraigram upazila

Plant health clinic is a new approach to provide service on plant health management to the rural farmers. The approach has been introduced to the farmers in Natore district of Bangladesh by AAS with assistance from CABI Bioscience. To achieve the objectives of global plant clinic (GPC), AAS decided to establish and manage model plant health management clinics network for providing better plant health management services among the large numbers of farmers in Natore district and later to scale-up the approach in other parts of the country. The service began by an intensive participatory survey to gather knowledge and information on plant health management service during phase-I of the Plant Health Services initiative (PHSi) in three regions of the country. To achieve the objectives of plant health management clinics network, AAS in collaboration with DAE, Baraigram upazila has made significant progress since September 2005 and the progress brief is given below under the following three sections:

## A. Establishment of plant clinics network

During this reporting period from September 2005 to May 2006, AAS has established a total of 15-plant clinics network with 17 agricultural extension service providers in Baraigram upazila of



Natore district. The clinics are established at service provider's campuses across the entire upazila. Mr. S.M. Quamruzzaman, UAO, DAE, Baraigram has provided whole-hearted support to establish such plant clinics network in Baraigram upazila. He is interested in disseminating the tested models in entire Natore district followed by Northeast region of the country. He feels it is worthwhile to scale-up the validated upazila model plant clinics network in the whole country through relevant public, private and NGO sector network.

[Left] Mr. S.M. Quamruzzaman, UAO, DAE, Baraigram, Natore delivering speech at participatory planning workshop at upazila complex, Baraigram

Among the 17 involved service providers, at first Mr. A.Z.M. Arshafuzzaman, Executive Director, Karbala Gram Unnayan Kendra (KGUK) agreed to work on plant clinic concept. Later Mr. Khandaker Abdul Mannan, Head Master, Ramagari High School joined in this. Mr. Arshafuzzaman, and his Agronomist, Mr. N. Zaman strongly supported the idea that like human clinics and veterinary clinics, plant clinics need to be established in our rural areas through involving existing relevant service providers to provide better



Mr. A.Z.M. Arshafuzzaman, ED, KGUK speaks at farmers' motivational meeting for scheduled plant health camp at Ahmedpur college-2 [Left] and Khandaker Abdul Mannan, Head Master, Ramagari High School speaks at participatory planning workshop at ZO, AAS, Bonpara, Natore [Right]

plant health services. They believe the service providers' existing facilities can be used for proposed plant clinics and their relevant staff can be used as community plant doctors for providing plant health services on sustainable and long-term basis. Selection of 17 relevant service providers in different unions of Baraigram upazila was a challenging task for AAS. Among the various service providers, the performance of the clinics established at union parishad's own campus was found to be less attractive at this early stage of the plant clinic project.

Community plant doctors are the foundation element of the plant clinics. 30 such community plant doctors are expected to be involved with 15-plant clinics network. They are locally well known, reputed and respectable persons in their society, and are highly regarded by the farmers. Most of them are born and brought-up in the same society. They are mostly school teachers, college teachers, and agri-input dealers and are already involved in various social services in their respective communities. Their skills on plant health management are planned to be developed through various project supports, training and motivation.



[Above] Nurun Nabi, AC, AAS registering farmers and their plant health problem samples during plant health camp operation at Roynavorat, Baraigram

Principal beneficiaries of the project will be farmers from surrounding communities of each plant clinic. The project implementation would be through farmer group approach, and group coordinators (two from each community) will lead the implementation process to ensure the participation of the farmers from the surrounding communities. The skills of these group coordinators will be developed through training and motivation during the project period. The service providing approach to the clinics would be pull approach on long-term basis of the plant clinic strategy. But in the early stage of the project, push approach such as mobile plant clinic, at the community will be used as well.



[Above] Participants of inaugural session of the plant health camp at Ramagari High School, Baraigram, Natore

Demand-led plant health management information is expected to be available to the community plant doctors (CPDs) as well as to the group coordinators through the use of easily readable scientific standard and farmer's friendly fact sheets. Before distribution to the community, the users at the clinics and communities would validate fact sheets. Around 20 scientific fact sheets (draft) have been prepared on different crops on farmers' demand driven basis. Its design and content needs to be further validated by the users before large scale printing and distribution.

Our target through establishing these 15-plant clinics with 30 community plant doctors and 100 group coordinators in more than 50 communities is to provide quality services on plant health management among at least 10,000 farmers in Baraigram upazila of Natore district. We feel the target is too ambitious in practical terms, especially with the allocated funds from CABI Bioscience. But Mr. Nurun Nabi, Area Coordinator of AAS at Bonpara strongly believes that we would be able to reach our target by the end of the project cycle. He is a hard workingman without rest and break like other Bangladeshi farmers who have no weekend and holidays. Mr. Shaik Sazzad



Nurun Nabi, AC, AAS holds diseased Garlic plants [Left] and S.S. Hossain searching nematode infested roots of pointed gourd along with farmer researchers [Right]

Hossain has joined as plant health specialist with plant clinic project of AAS under the technical

assistance from CABI Bioscience. He has recently completed his master in plant pathology from BAU, Mymensingh. Agricultural extension was boring to him during his graduation in agriculture but now he enjoys this very much as he can use his plant protection knowledge among the farmers through using plant clinics network strategy in Natore district.

## B. Training and workshop

At the beginning staff of involved stakeholders and AAS was very curious to know how this concept was working. They were interested to hear the similar experience of rural plant clinic (RPC) operated by Rural Development Academy (RDA) in Bogra. Accordingly, we requested Mr. A.K.M. Zakaria, Deputy Director, Agriculture department, RDA, Bogra to arrange orientation training for those staff. Mr. Zakaria was very much generous to arrange one day orientation training on RPC at RDA, Bogra. 6 staffs, 2 from DAE, Baraigram, 1 from KGUK and 3 from AAS participated in the orientation training



[Above] A.K.M. Zakaria, DD, RDA, Bogra and Harun-Ar-Rashid, ED, AAS at orientation training on Rural plant clinic (RPC) at RDA, Bogra

Based on the training at RDA we arranged a participatory planning workshop in collaboration with DAE, Baraigram at BRDB conference hall, Bonpara on 6 March 2006. A total of 22 staff



Participants of participatory planning workshop at upazila complex, Baraigram, Natore [Left] and S.M.Q. Zaman, UAO, DAE, Baraigram, Natore and Harun-Ar-Rashid, ED, AAS at Participatory planning workshop, upazila complex, Baraigram [Right]

attended the workshop, of which 17 were from DAE, Baraigram, 2 were from NGOs (KGUK & SOPAN) and the rest were from AAS. Sixteen participated SAAOs (Sub-Assistant Agriculture Officer) from DAE, Baraigram, Natore highly accepted the concept of the plant clinics establishment and operation in rural areas. Most of them are also committed to work with model plant clinic concept in Baraigram upazila on long-term basis. During the workshop, the participants developed strategy and a draft action plan for operating plant clinics in Baraigram upazila of Natore district. They, however, recommended for conducting another follow-up workshop to finalize the action plan and the overall strategy of the clinics.

The follow-up workshop was organized at the Zonal Office of AAS at Bonpara on 6 May 2006. A total 16 representatives from 14 agricultural extension service providers participated in the



Harun-Ar-Rashid presents at participatory planning workshop at ZO, AAS, Bonpara [Left] and participants of participatory planning workshop [Right]

workshop. The workshop participants finalized the action plan along with the specific strategies for operating the plant clinics network in Baraigram upazila of Natore district. It was exciting among the participants to form a steering committee with current chairman of the committee. All participants unanimously selected Mr. S.M. Quamruzzaman, UAO, DAE Baraigram as the founder chairman of the steering committee of plant clinics network project for one-year period effective from 6 May 2006. Participants also unanimously selected AAS's Zonal Office, Baraigram, Natore as the secretariat for operating plant clinics network in Baraigram, Natore. The participants unanimously selected Mr. Harun-Ar-Rashid as a member secretary of the plant health clinics network in Baraigram upazila of Natore district. They agreed that the plant clinics network in Baraigram would be established and operated under the guidance and supervision of the steering committee headed by the chairman of the committee.

### C. Operation of plant clinics

Plant health camps, a campaign to create awareness about plant clinics among farmers through providing them immediate service have been organized at 15-plant clinic venues in Baraigram



Participants at plant health camp at Ramaigari High School, Baraigram [Left] and Chief guest (ADC-General, Natore) speaks at inaugural session of the first plant health camp at Ahmedpur College-2 [Right]

upazila of Natore district during March-May 2006. Before conducting plant health camps

(PHCs), the concept and implementation strategies were shared with all the involved service providing organizations. They compared the service of these plant health camps with that of eye camps, which are very popular in the rural areas. Highly experienced national and international plant health specialists were made available at all the plant health camps. Overall achievement and success of plant health camps was found enormous in many ways. A total of 320 farmers attended the camps with 317 problems in 54 crops and their 181 varieties. Out of these 317 plant health problems, plant health specialists provided prescription, suggestion and recommendation on 306 problems. The number plant health problems diagnosed by the plant health specialists were highest with insects (169) followed by physiological disorders (88), fungal diseases (60), virus diseases (41), nematode (8), and bacterial diseases/mycoplasma/soil problems (2).



[Above] Plant health problems: (a) Sodoptera caterpillar of Onion flower, (b) Jackfruit borer, (c) Mealy bug of Mango trees, (d) Root knot of nematode of Pointed gourd and (e) Mosaic virus of Mung bean

There were about 20 unknown plant health problems. The management practices suggested against those problems was highest with pesticides cum cultural practices (142) followed in order by pesticide only (90), balanced fertilizer application only (60), cultural practices only (48), balanced fertilizer cum cultural practices (18) and resistance variety use (17). About 10 plant health problem samples were collected by Paula Nash, CABI Bioscience for further investigation and solution at GPC laboratory in UK.

Few mobile plant clinics on Brown Plant Hopper (BPH) and Zinc deficiency in rice, and virus problem in garlic (?) were organized with the assistance of rice entomologist and pathologist from BRRRI and Prof. Phil Jones, Virologist from Rothamsted Research, UK and Paula Nash, CABI Bioscience, UK. Demand-led mobile plant clinic will be conducted during the next winter season in selected communities to develop awareness among the targeted farmers about plant clinics and its service availability for plant health problems. The community plant doctors will organize such mobile plant clinics with technical support from the project plant health specialists and in collaboration with the group coordinators of the community plant clinic groups.



[Above] Prof. Phil Jones, Virologist, PPI, Division, Rothamsted Research, UK and Paula Nash, CABI, UK with garlic farmers during their visit in chalanbeel of Gurudashpur, Natore

Additional information of plant clinics network is provided in Annexes I-VII:

**Annex. I:** List of service providers of the plant clinics network in Baraigram upazila

<b>SL #</b>	<b>Name of Service Provider</b>	<b>Name of plant clinic</b>	<b>SAAOs, DAE</b>	<b>Chief Executive (Name, Designation and Mobile)</b>
1	DAE, Baraigram	Involved with 4 clinics	4 SAAOs, DAE	S.M. Quamruzzaman, UAO, Baraigram
2	Ahamadpur College- 2	Ahamadpur	-	S.M. Asad-uz-Zaman, Principal
3	KGUK (NGO)			A.Z.M. Asarif-uz-zaman, Executive Director
4	Ramaigari High School	Ramaigari	-	Khandokar Abdul Mannan, Head Master
5	Rayna Varot fertilizer dealer	Rayna Varot	SAAO, DAE	
6	Merigachhi High School	Merigachhi	SAAO, DAE	Md. Bashir Uddin, Head Master
7	Perbagdob Madrasa	Perbagdob	-	
8	Sopan (NGO)	Moukhara	-	Mrs. Tasmiara, Executive Director
9	Tirail DTW Samabay Samity	Tirail	-	Abu Bakker Siddique Pramanik, President
10	Chandi UP	Natabaria	-	
11	Beshas (NGO)	Goarmati	-	Abul Kashem, Executive Director
12	Chandi High school	Chandi	SAAO, DAE	Md. Motin Sorkar, Head Master
13	Dasgaon Senior Madrasa	Dasgaon	-	Abdul Awal Principal
14	Jagoroni Samaj Unnayan Sangstha (NGO)	Jonail	-	Md. Ali Siddeque, Executive Director
15	N.S. Enterprise	Agran	-	Md. Abdus Samad, Proprietor
16	Joari UP	Joari	SAAO, DAE	Chad Mohammad Chairman
17	Kachua High school	Kachua	-	Md. Oas Kuruni, Head Master

**Annex. II:** List of plant clinics their venues, service providers and CPDs

PC#	Plant clinic Name	Venue	Plant clinic space	Service Providers	CPD name
1	Ahamadpur	Ahamadpur College- 2		1) Ahamadpur College- 2 2) KGUK	i) Md. Nuruzzaman ii) S.M. Bokul Hossain
2	Ramaigari	Ramaigari High school		Ramaigari High School	i) Dijendronath ii) Md. Enamul Haque
3	Rayna Varot	Dealer Shop		Rayna varot fertilizer dealer	-
4	Merigachhi	Merigachhi High school		Merigachhi High School	i) Md. A. Bashar ii) Md. Aksad Ali
5	Perbagdob	Perbagdob Madrasa		Perbagdob Madrasa	i) Md. A. Sattar ii) Md. I.H. Ripon
6	Moukhara	Sopan office		Sopan office	i) Md. A.H. Kafi ii) Mst. Banesa Khatun
7	Tirail	Tirail DTW office		Tirail DTW Samabay Samity	i) Md. Shahjahan Kabiraj ii) Md. Korban Ali
8	Natabari	Chandi UP		Chandi UP	-
9	Goarmati	Dealer Shop		Beshash (NGO)	i) Md. Shahidul Islam ii) Mst. Raseda Khatun
10	Chandi	Chandi High School		Chandi High School	i) Md. Samsul Islam ii) Md. M. Hossain
11	Dasgaon	Dasgaon Senior Madrasa		Dasgaon Senior Madrasa	i) Md. Habibur Rahman ii) Md. Didar Hossain
12	Jonail	JSUS		JSUS (NGO)	i) Md. Abu Hossain ii) Didarul Alom Ripon
13	Agran	Dealershop, Agran		N.S. Enterprise	i) Md. Abdus Samad ii) Md. Saiful Islam
14	Joari	Joari UP		Joari UP	-
15	Kachua	Kachua High school		Kachua High school	i) S.M. Sohedul Islam ii) Md. Kofil Uddin

**Annex. III:** Summary achievement of 15-plant health camps

SI #	Issues	Total	Average/Clinic
1	Number of farmers attended	<b>320</b>	<b>21</b>
2	Number of problem investigated	<b>317</b>	<b>21</b>
3	Number of unknown cases (Problems)	<b>11</b>	-
4	Number of samples collected for further investigation	<b>8</b>	-
5	Number of crops/plants	<b>54</b>	<b>4</b>
6	Number of variety	<b>181</b>	<b>12</b>
7	Number of plant doctor contributed	<b>50</b>	<b>3</b>
8	Number of Specialist contributed	<b>50</b>	<b>3</b>

**Annex. IV:** List of crops / plants with health problem of 15 plant health camps

SL #	Crop / Plant	SL #	Crop / Plant	SL #	Crop / Plant
1	Brinjal	19	Apple	36	Castor (Venna)
2	Mango	20	Ground Nut	37	Indian Spinach
3	Mug bean	21	Maize	38	Pumelo
4	Bottle gourd	22	Sugarcane	39	Ber
5	Lentil	23	Bitter gourd	40	Data (Amaranthus)
6	Wheat	24	Banana	41	Black Berry
7	Garlic	25	Bullocks heart (Atta)	42	Lemon
8	Country Bean	26	Rice	43	Data Palm (Khejur)
9	Tomato	27	Coconut	44	Jute
10	Litchi	28	Melon (Bangi)	45	Carambola (Kamranga)
11	Chilli	29	Cucumber	46	Mehogany
12	Onion	30	Betel-nut	47	Drum Stick
13	Pointed gourd	31	Pomegranate	48	Guava
14	Okra	32	Sesame (Til)	49	Bamboo
15	Jujube	33	Silk-cotton (Simul)	50	Fan palm (Tal)
16	Sweet gourd	34	Betel-leaf	51	Grape
17	Papaya	35	Gheeto Kanchan (Alovera)	52	Snake gourd
18	Jackfruit				

PHC= Plant health camp

**Annex. V:** Summary plant health problems diagnosed and recommended management practices

SL #	Problems/Management	Total	Average/Camp (Nr.)
<b>A: Plant health problems</b>			
1.	Insect	173	12
2	Disease		
(a)	Fungi	60	4
(b)	Bacteria	2	-
(c)	Virus	41	3
(d)	Nematode	8	1
(e)	Mycoplasma	2	-
3	Soil Problem	2	-
4	Physiological Problem	88	6
5	Unknown Cases	15	1
<b>Total:</b>		<b>391</b>	
<b>B. Management Practices</b>			
1	Pesticide only	90	6
2	Cultural practices only	48	3
3	Pesticide cum cultural practices	142	10
4	Balance fertilizer application only	60	4
5	Balance fertilizer cum cultural practices	18	1
6	Resistant variety use	17	1
7	No advice	21	2
<b>Total:</b>		<b>396</b>	

**Annex. VI: Action plan on plant clinics network in Baraigram upazila of Natore district**

**Action Plan**

Expected Output	Activity	Responsibility		Period	Remarks
		Management	Implementation		
1. Establish and manage 15 plant clinics network	1.1 Selection of relevant agricultural extension service providers (AESPs)	AAS	-	Yr.1	
	1.2 Finalize of plant clinic sites	AAS, DAE	AESPs	Yr.1	
	1.3 Finalize of clinic space at each plant clinic site	AAS, DAE	AESPs, GCs	Yr.1	
	1.4 Staff selection from selected AESPs as community plant doctors (CPDs)	AAS, DAE	AESPs	Yr.1	
	1.5 Skill development training and motivation for 30 CPDs	AAS, DAE	AESPs	Yr.1-3	
	1.6 Essential equipment and materials supply for plant clinics	AAS	AESPs	Yr.1-4	
	1.7 Community selection	AAS, DAE	AESPs	Yr.1	
	1.8 Farmers selection and group formation with group coordinator (GC)	AAS, DAE	AESPs	Yr.1	
	1.9 Prepare guidelines and tools for plant clinics	AAS, DAE	AESPs	Yr.1-3	
	1.10 Conduct plant health camp	AAS, DAE	AESPs, GCs	Yr.1-3	
	1.11 Day basis plant clinic operation	AAS, DAE	AESPs, CPDs, GCs	Yr.1-4	
	1.12 Select 100 group coordinators (GCs) for plant health management	AAS, DAE	AESPs	Yr. 1-4	
	1.13 Arrange skill training and motivation for GCs	AAS, DAE	AESPs, GCs	Yr. 1-3	On the basis of resource availability
	1.14 Seasonal field visit for GCs	AAS, DAE	AESPs, GCs	Yr. 1-4	-Do-
	1.15 Provide up-date information on plant health management	AAS, DAE	AESPs, GCs	Yr. 1-4	-Do-
	1.16 Supply practical plant health management information (fact sheet etc) for plant clinics	AAS, DAE	AESPs	Yr.1-3	
	1.17 Distribute Farmers' demand led document (farmers' fact sheets)	AAS, DAE	AESPs, GCs	Yr.1-4	
	1.18 Develop linkages between plant clinics and knowledge sources (BRRI, BARI, BINA, CABI etc)	AAS, DAE, relevant institutes	AESPs, GCs	Yr.1-3	
	1.19 Conduct "going public" at public/market places	AAS, DAE	AESPs, GCs	Yr.1-4	
	1.20 Document on plant health management practices	AAS, DAE	AESPs, GCs	Yr.1-4	
	1.21 Conduct mobile clinic at community	AAS, DAE	AESPs, GCs	Yr.1-4	
	1.22 Conduct monitoring on the operation of plant clinics	AAS, DAE	AESPs, GCs	Yr.1-4	
	1.23 Ensure specialists service on plant health management	AAS, DAE	Plant health specialists (Project)	Yr.1-4	

## Action Plan (Contd.)

Expected Output	Activity	Responsibility		Period	Remarks
		Management	Implementation		
2. Establish a central plant clinic	2.1 Finalize space for a central plant clinic	AAS, DAE	-	Yr. 2	
	2.2 Procure equipment and furniture for the central plant clinic	AAS, DAE	-	Yr. 1-4	On the basis of resource availability
	2.3 Place full time project plant health specialists and staffs	AAS	-	Yr. 2	-Do-
	2.4 Establish mini laboratory	AAS, DAE	-	Yr. 2	-Do-
3. Develop farmers' innovative methods for plant health management	3.1 Selection of farmers' innovative methods for plant health management at community for validation	AAS, DAE, BSMRAU, CABI	AESPs, GCs, farmers	Yr. 1-4	
	3.2 Validation of selected methods by the scientists and farmers	AAS, DAE, BSMRAU, CABI	BSMRAU, BRRI, BARI, BINA, CABI	Yr. 2-4	
	3.3 Conduct participatory workshop on innovative method selection	DAE, BSMRAU, CABI	AAS, AESPs, GCs	Yr. 2-4	
	3.4 Document on the selected innovative methods	DAE, CABI	AAS, BSMRAU	Yr. 3-4	
4. Develop demand-led 200 types of scientific and farmer fact sheets	4.1 Prepare and print 200 types of fact sheets on plant health problems and their management of different crops (scientific & farmers)	AAS, DAE, CABI	Plant health specialists and farmers	Yr. 1-4	Printing on the basis of resource availability
5. Plant health management knowledge and information preservation and distribution	5.1 Preserve project developed fact sheets on plant health management with involved stakeholders including AAS	DAE, CABI	AAS, AESPs	Yr. 1-4	-Do-
	5.2 Distribution of fact sheets at community through GCs and their respective AESPs	DAE, CABI	AAS, AESPs, GCs	Yr. 2-4	

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