

Quarterly Report

Vulnerability and Risk Reduction Through a Community-Based System for Flood Monitoring and Forecasting

APS: Enhanced Disaster Preparedness in South Asia: Through Community- Based and Regional Approaches

USAID Cooperative Agreement No. 367-A-00-02-00224-00

submitted to



United States of America
Agency for International Development
Mission to Nepal
G.P.O. Box 5653
Kathmandu, Nepal

by



Riverside Technology, inc.
2290 East Prospect Drive, Suite 1
Fort Collins, CO 80525

September 2005

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Quarterly Report

July 1 through September 30, 2005

1.0 Introduction

This project is contracted by USAID to the Colorado-based company Riverside Technology, inc. along with Bangladesh-based partners Center for Environment and Geographic Information Services (CEGIS) and the Bangladesh Disaster Preparedness Centre (BDPC). The project is known in short as the *Community Flood Information System*, or CFIS.

2.0 Program Performance

2.1 Summary

The project made considerable progress towards implementation of the Year 3 Work Plan. Activities include: expansion of community mitigation activities into Dhunail, follow up activities in Bara Bainna, and progress towards replication activities for Year 4. The project also made progress on technical aspects of the workplan including advancements in WATSURF version 2.2 to provide automated text messaging to communities and enhancement of software code and documentation. No international travel took place during this quarter. More detailed information on project activities can be found in the attached Appendices.

2.2 Finances

A summary of project finances is provided in Table 1. Finances and known project expenditures are on target at this time. However, both Bangladesh partners CEGIS and BDPC are slightly behind schedule in providing invoices to RTi for payment.

3.0 Notification

On August 25, RTi submitted a request for additional funding to the Chief Technical Officer in order to implement additional replication activities during project Years 4 and 5.

Table 1: Financial Summary

Ref	Description	OFDA Cost	Own Cost	Total
1	Total Budget for 5-Year Project	\$541,991	\$178,316	\$720,307
2	Cumulative invoiced thru previous quarter	\$231,561	\$101,887	\$333,449
3	Total invoiced this quarter	\$5,607	\$8,821	\$14,427
4	Total thru this quarter	\$237,168	\$110,708	\$347,876
5	Work completed but not yet invoiced to USAID			
	RTI	\$0	\$0	\$0
	CEGIS	\$10,000	\$7,000	\$17,000
	BDPC	\$5,000	\$0	\$5,000
6	Total Work completed but not yet invoiced to USAID	\$15,000	\$7,000	\$22,000

Appendix 1 - Progress Report - CEGIS

Vulnerability and Risk Reduction through a community based system for flood monitoring and forecasting

MEMORANDUM

TO: Dr. Timothy C. Martin
FROM: Ahmadul Hassan
DATE: October 2005
SUBJECT: Progress Report # CEGIS

Summary: Activities from July 2005 to September 2005 are summarized as follows:

Field activities

- 18 gauges had been reinstalled and all the necessary zero values connected and recorded in logbooks from June 2005 to 30th September. Two gauge locations had been shifted this year. Gauge 4115 is shifted to 400m down and Gauge 4116 is shifted to 1.7 km west ahead of Doulatpur bazaar. Water level recording, gauge shifting and other trainings are gave to all 18-gauge readers.
- 18 TBM (Temporary benchmark) RCC pillar (each one 3.5 feet height) have been installed near every gauge locations.
- A leveling & cross section survey had been carried out in Boro Bayna and Dhunail mauza to assess the connectivity and to estimate the threshold elevation above which the flow connection is established with the flood plain. The flag message were only sent when the water levels were above this elevation.
- 16 flag stations were installed and necessary training had given to the flag operator.
- 8 new RCC pillar (each one 11 feet height) installed in Boro Bainya (5 nos.) and Dhunail (3 nos.) and marked as Red, yellow, green as identified by the local community.
- Several field visits were made to assess flood condition and training given to the field managers of BDPC to understand to the SMS message properly and to guide the flag operator accordingly.

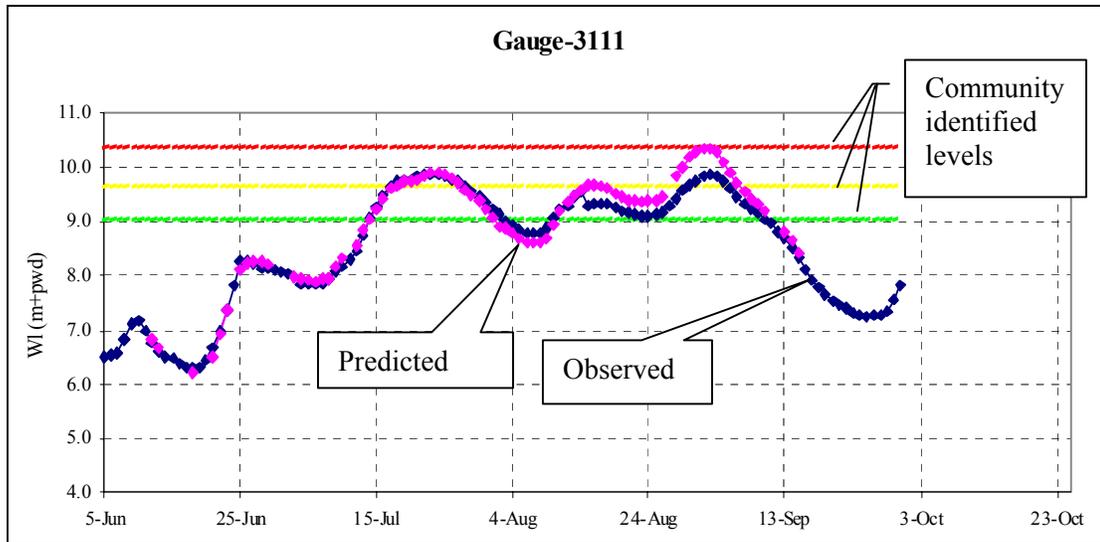
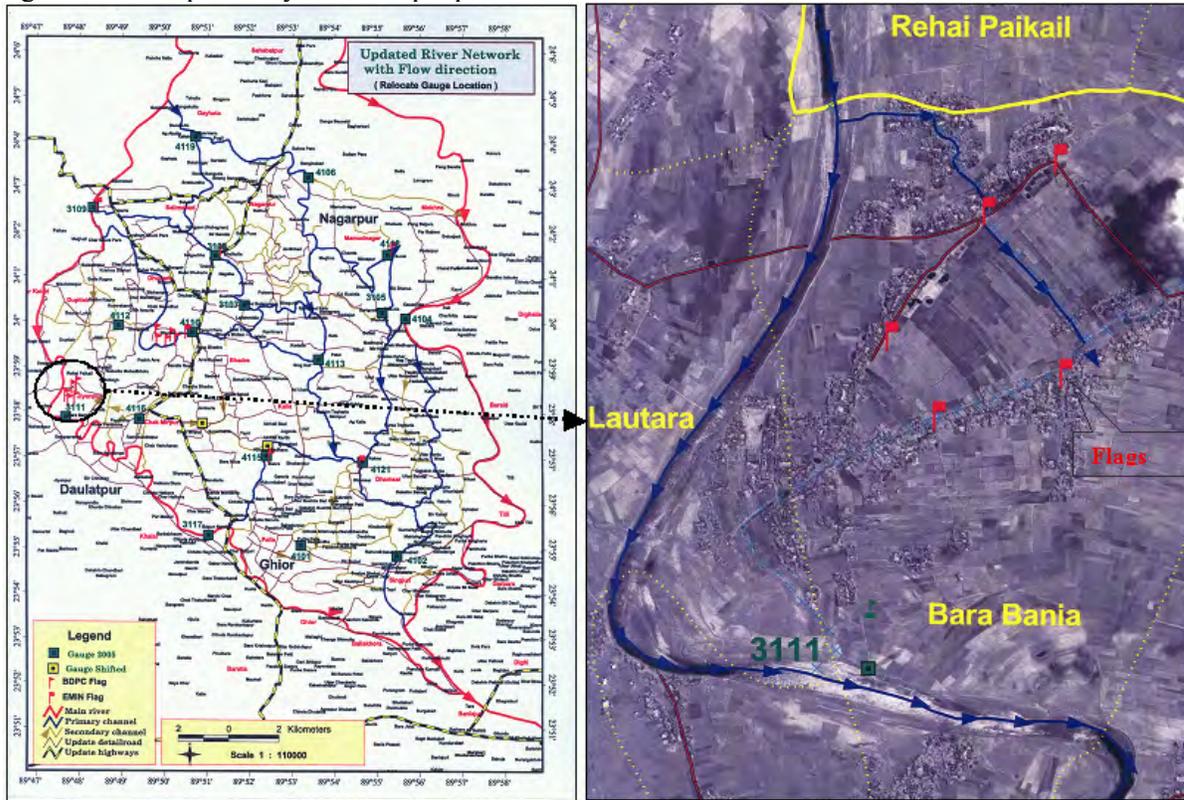
Field Assessment

Boro Baynna:

In Boro Baynna, five flag sites were investigated and found that the WATSURF sent SMS message were in full compliance. Some people in Baynna Bazar were interviewed, their observations in predicted flag message were discussed. Most of them informed that the flag messages have been nicely matched so far with the observed water levels. People were inquiring the flags and prepared mind-set for the safety measures. Moreover they compared the actual water levels with the flag messages. One of them named Nabi Miah asked for long term forecasting so that they will be able to take decision about Aman cultivation.

A channel nearby Bara Bania is connected with Ghior river, this channel controls the flooding in Bara Baynna. When river water spills over the bank, floodwater enters to the Baynna mauza through this canal. Three flood pillars in Boro Baynna were inundated upto green level and two were up to yellow level at around 16th July and stayed till the end of July. Afterwards, the water level started decreasing, and on 26th July the river was disconnected from the canal with its elevated mouth. Hence, the water remains stagnant. Sometimes this disconnected floodplain water sheet is connected to the northeastern small channels, which are dependent on Dhaleswari flows, but the effect is not

significant as reported by the local peoples.



Bohera:

The field experience found to be same as Boro Baynna. Several people including some women were interviewed; the responses were very much positive regarding the flag messages. The people are aware of the flag messages and they understand the meaning of different colors of flags. All the sent SMS found matched with the observed water levels. But for four days in beginning of July the message were not receipt by the flag operator at site. This is a technical issue where EMIN dissemination section should take care.

The flood 2005 was below the normal expectance.

CFIS Tool WATSURF Replication

- Replication strategy of CFIS/WATSURF tool has been formulated for EMIN. The strategy formulation include delineation of potential replicable are in whole Bangladesh with different level of information to the community.
- An workshop on replication strategies was conducted with participation of EMIN, BWDB-FFWC, IWM, WARPO and CEGIS.
 - IWM comments were reviewed and responded. IWM has been asked by FFWC to submit an estimation to do the same task using Mike 11 model for comparison
 - A plan is included to incorporate the flush flood in CFIS tool system according to the workshop's suggestion. WATSURF could be extended in development in this regard. A field visit is planned to flash flood area in Sylhet/Sunamganj, in Northeast part of Bangladesh.
 - The dissemination mechanism of the CFIS has been appreciated by BWDB-FFWC, IWM and WARPO.
 - Replication strategy report has been prepared.
- Several meeting with BDPC and EMIN have been done to implementation and monitoring of CFIS tool in the field level with confidence
- A presentation on CFIS has been done before the Secretary of Ministry of Water Resources of Bangladesh.
- A presentation on CFIS is done before CDMP official and his comments on flag message generation are undertaken.

WATSURF Development

- WATSURF has been tuned with minor adjustments. The threshold elevations for each gauge, below which the river network is disconnected, is incorporated into the system so that WATSURF does not send SMS to the flag site in this situation.
- WATSURF operators of EMIN have been trained to run, generate outputs and sent messages.
- Communication /coordination regarding the fine tuning of WATSURF with active participation and guidance from RTi is being continued. Error trapping code sections enhanced
- WATSURF user manual has been updated as per RTi review and findings
- Flood surfaces generated for the 2.33, 5, 10, 20, 50 and 100 yr return periods

Damage assessment

- The methodology development of Damage Assessment is started. In this regard some topographic maps have been prepared, flood map of different frequencies (1:2.33, 1:5, 1:10, 1:20 yr) have been prepared. RTi input will require for development of efficient methodology.
- Digital Terrain Model is being developed.
- Literature review is done to identify how FAP 20 conducted the damage assessment
- Damage assessment model development in CFIS area using GIS tools is underway

Future plan of activities

- Development of WATSURF for whole Bangladesh at macro level for the flood plains
- Development of flash flood forecasting mechanism. For this, some field investigation will be done to assess the problems, issues, requirements and probable measure to generate the forecast information. During the visits, the scope and possibilities of development, community settings and probable dissemination system will be assessed.
- Development of Flash flood forecasting module and incorporate into the WATSURF system.
- The damage assessment activities and documentation will be continued.
- Development of damage assessment module and documentation
- Visit to USA for capacity building of the technical team of CEGIS
- E-mail option for flood message will be incorporated into WATSURF

Appendix 2 - Progress Report - BDPC

Community-based Flood Information System (CFIS)



Third Quarterly Report (July-Septembers 2005)

Prepared for RTi



Bangladesh Disaster Preparedness Centre (BDPC)

House # 52, Road # 13/C, Block-E, Banani, Dhaka

Telephone : 8815074, 8816296, Fax : 8810211,

E-mail : bdpc@glinktel.com

Executive Summary

As already reported, BDPC has been replicating the similar activities in Dhunail under Tangail district as was done in Bara Bainna of Manikganj district last year under the Community based Flood Information System (CFIS) project. Besides, it is implementing the follow up activities in Bara Bainna as per the agreed work plan for 2005. As per the work plan, BDPC is supposed to accomplish the following tasks in Bara Boinna and Dhunail respectively during the quarter ending in September 2005:

- Family and community level discussion by the Change Agents and volunteers,
- Receiving flood warning message and dissemination to the family and community level,
- Household level survey,
- Field testing of IEC materials for the new area (Dhunail),
- Appropriate use of IEC materials in Bara Boinna,
- Monitoring of the CAs activities,
- Performance evaluation of CAs and volunteers,
- Monthly coordination meeting for the VFMC,
- Supervision and monitoring of the operations,
- Mock demonstration for both the areas and Cultural events for new area

According to the work plan we successfully implemented the activities during this quarter, which includes family and community level discussion by the change agents and volunteers.

The details about each of the activity are presented in paragraphs that follow.

Objective

Broad objective of the CFIS project:

- To reduce the vulnerability of the community people from the effects of flood.

Specific objective:

- Empowerment of the community through community based flood information system.

Title of the Project Community-based Flood Information System (CFIS)

Intervention Area Bara Boinna, Zionpur union of Daulatpur upazila under Manikganj district and

Dhunail, Daptiar Union of Nagarpur upazila under Tangail district.

Reporting Period July- September 2005

A. Activities planned for during this quarter:

SL.#	Activities	July 2005	August 2005	Sep 2005
01	Family and community level discussion by the Change Agents			
02	Receive flood warning message and dissemination to the family and community level			
03	House hold level survey			
04	Monthly coordination meeting for the VFMC			
05	Regular meeting with CEGIS			
06	Field testing of IEC materials for the new area (Dhunail)			
07	Appropriate use of IEC materials in Bara Boinna			
08	Performance evaluation of CAs and volunteers			
09	Monitoring of the CAs activities			
10	Supervision and monitoring of the project activities			
11	Mock demonstration for both the areas			
12	Cultural events for new area			

Besides the above mentioned activities, the following activities were also implemented during the reporting period:

- Validation of the number flag points
- Cross checking the status of the flood marker
- Field visit of Mr. W. Robert Laitos

B. Status of Implementation of the Planned Activities:

BDPC is pleased to report that, most of the activities planned during this quarter have been conducted successfully. Implementation status of each of the programme activity is shown below.

SL.#	Activities	Status
01	Family and community level discussion by the Change Agents	Being Implemented as per schedule
02	Receiving flood warning messages and dissemination to the family and community level	Being Implemented as per schedule
03	Conduction of house hold level survey	Being Implemented as per schedule
04	Monthly coordination meeting for the VFMC	Being Implemented as per schedule
05	Regular meeting with CEGIS	Being Implemented as per schedule
06	Field testing of IEC materials for the new area (Dhunail)	Done
07	Appropriate use of IEC materials in Bara Boinna	Done
08	Performance evaluation of CAs and volunteers	Done
09	Monitoring of the CAs activities	Being Implemented as per schedule
10	Supervision and monitoring of the project activities	Being Implemented as per schedule
11	Mock demonstration for both the areas	Partially Implemented
12	Cultural events for new area	Under Implementation

C. Detailed information of implemented activities

C.01 Family and community level discussion by the Change Agents

Agriculture is the main source of income in both the intervention areas. On the basis of their indigenous knowledge people are well aware that June, July and August comprise the monsoon season. That's why almost all the crops were harvested except Jute. Because of this situation, most of the community people were almost free. As they were not so busy in their occupational purpose, Change Agents and Volunteers had conducted the family and community level discussion spontaneously. The discussions were very much participatory as well as interactive.

During this quarter 40 family and community level discussion events were held, out of which 22 were held in Dhunail and 18 in Bainna. In Dhunail 396 participants took part in these discussions, the number of male and female participants being 170 and 226 respectively. Similarly in Bainna 363 participants participated in these discussion sessions, where 227 female and 136 male participants were present. It is



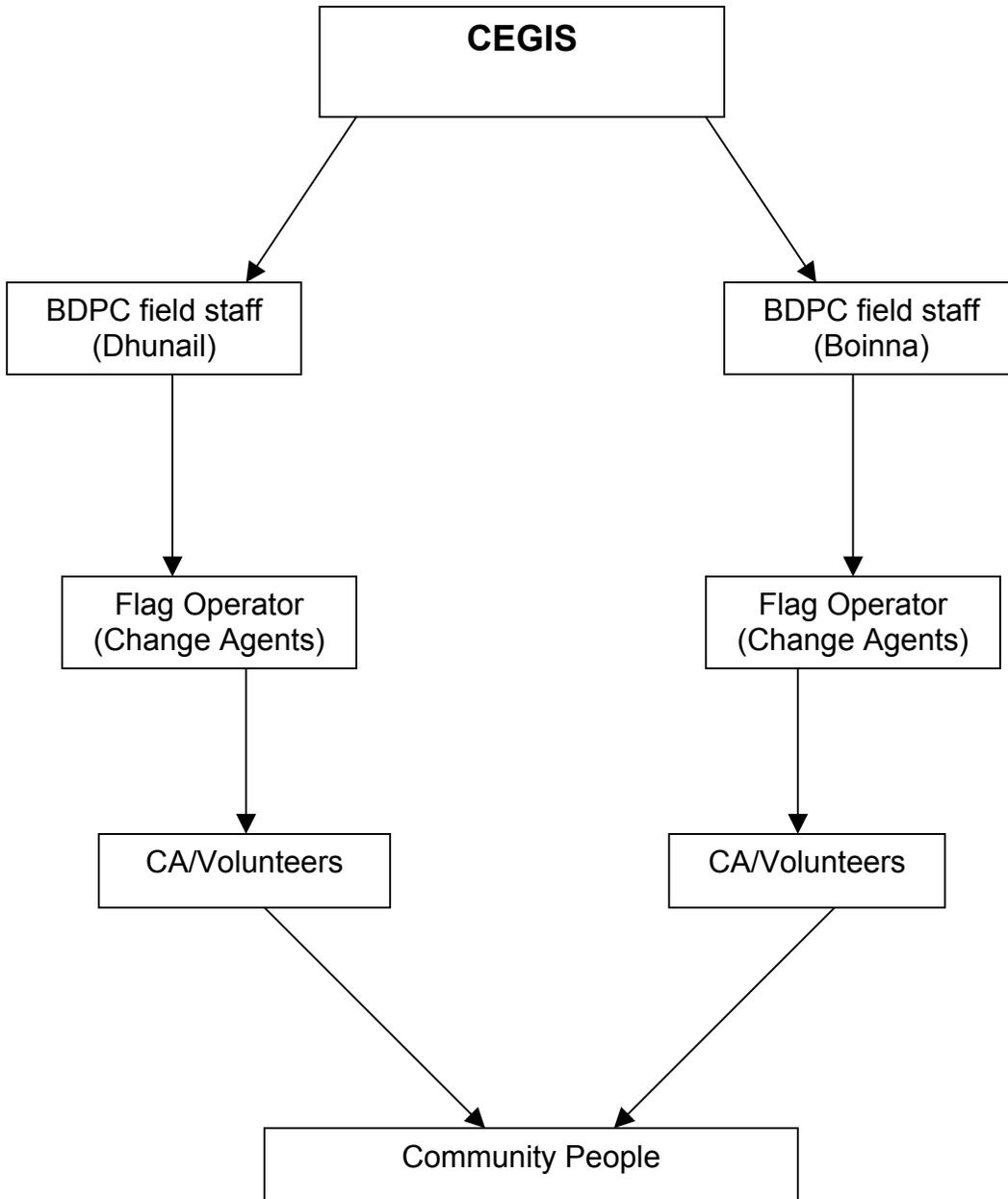
interesting to note that female participants were higher than the male in both the locations as would be evident from the following table:

Family and Community level discussion by the Change Agents at a glance:

Sl#	Upazila	Village	Ward #	Number of discussions session	Number of participants		
					Female	Male	Total
01	Daulatpur	Bainna	01	08	111	47	158
02	Daulatpur	Bainna	02	10	116	89	205
03	Nagarpur	Dhunail	09	22	226	170	396
Total				40	453	306	759

C.02 Receiving flood warning message and dissemination to the family and community level

The following diagram shows the early warning dissemination flow of the CFIS project:



The early warning messages are sent to BDPC's field office from the CEGIS office through SMS. After receiving these messages BDPC's field staff duly entered the messages in the register and disseminated the same physically to the flag hoisting

points, where the designated persons (CA or Volunteer) hoisted the flag according to the message received. Besides this, the change agents and volunteers disseminated the received messages at the family and community level.

The process of early warning dissemination through SMS has been started since 13th July and it will be continued up to the whole monsoon. During the period from 13 July to 17 September 2005 the number of messages received stood at 51, out of which 49 messages were received through SMS and 2 messages through mobile phone. Due to the server failure of the Grameen Phone, we could not receive any message from the CEGIS on 22 July and 30 August.

The following table shows the status of the received message regarding increase and decrease of water:

Area	Color of flags	Total # of messages received form CEGIS	Correct	%	Incorrect	%
Bainna	Blue	16	13	81.2	03	18.8
	White	27	27	100.0	-	-
	No flag	22	20	91.0	02	09.1
Total		65	60	92.0	05	08.0
Dhunail	Blue	18	18	100.0	-	-
	White	31	31	100.0	-	-
	No flag	16	14	87.5	02	14.3
Total		65	63	96.8	02	03.2

The table shows that in 92% and 96.8% cases the messages were correct in Bara Bainna and Dhunail respectively regarding increase or decrease of water. The dissemination process through the flood marker pillar, which reveals the quantity of increase or decrease of water is being monitored to cross check the above findings.

The following table shows the status of the quantity of water on a sample basis:

Date 1	Flag 2	# of interpretation 3	Expected water increase/decrease 4	Reality (water increase/decrease) 5	Name of Village 6
26.08.05	Blue	02	01 hand / 18 inch	02 inch increase	Bainna
27.08.05	Blue	02	01 hand / 18 inch	06 inch increase	Bainna
11.08.05	Blue	02	01 hand / 18 inch	05 inch increase	Dhunail
05.08.05	White	01	Half hand / 09 inch	02 inch decrease	Dhunail

The above table takes into consideration only four messages on a sample basis to understand the situation regarding the quantity of water. As per the messages received, the expected increase/decrease of water vis a vis the actual increase/decrease of water are shown at column 4 and 5 respectively. The people become confused at such a wide variation. The community people suggests that messages regarding increase/decrease of water should be closer to the actual situation.

C.03 Conduction of household level survey

Household survey is one of the important activities implemented by BDPC during this quarter. The main objective of this survey is to identify the impact of the CFIS project. Total 336 households were covered under this survey. Among the respondents, female were 60% and 40% male. During this monsoon the level of water was very low compared to other monsoon seasons in Bangladesh. Due to this reason, the impacts of CFIS activities were not reflected fully as we expected from the household survey.

Most of the respondents of Bara Bainna and Dhunail are housewife (59.8 %) and farmer (25%).

The participants were asked whether they got early warning or not. In Bara Bainna almost 89% mentioned that they got early warning, among them 34% mentioned that they received early warning through flag. In response to a similar question, 92% of the respondents from Dhunail said that they received early warning and that 59% of them got the messages from flag.



The following table shows the status of receiving early warning:

Status of receiving early warning	Bara Bainna	%	Dhunail	%
Yes	141	89.0	163	92.1
No	18	11.0	14	07.9
Total	159	100.0	177	100.0

The compiled reports of the household survey for Bara Bainna and Dhunail are annexed herewith as annexure-1 and 2 respectively.

C.04 Monthly coordination meeting for the VFMC

Three coordination meetings were held in Dhunail and Bara Boinna on 09, 13 and 14th September 2005 respectively. The objectives of these meetings were to review the performance of the CAs and Volunteers and overall situation of the project activities.



SL #	Village	Date	Ward #	Total # of participation		
				Male	Female	Total
01	Boro Bayna	13 September,05	01	30	07	37
02	Boro Bayna	14 September,05	02	33	06	39
03	Dhunail	09 September,05	09	13	09	22
Total				76	22	98

C.05 Regular meeting with CEGIS

Several meetings were held during this quarter among BDPC and CEGIS/EMIN project personnel both at the central and field level. The main objective of these meeting was to review and identify the gaps regarding the project.

The meetings emphasized about the coordination between all the parties involved with this project for smooth operation of CFIS project.

C.06 Field testing of IEC materials for the new area (Dhunail)

During this quarter, the IEC materials were tested in the new area. The vulnerability map, which was developed during the last quarter through participatory way, is being verified in the current monsoon.

Certain consistencies were identified at the household level regarding its vulnerability. We reproduced the vulnerability map in consultation with the community people.

C.07 Appropriate use of IEC materials in Bara Boinna

According to the distribution plan, BDPC field staff, CA and volunteers have already completed the remaining task under this activity during the first month of this quarter. Each and every household in Baro Bainna now know their vulnerability regarding the severity of flood.

C.08 Performance evaluation of CAs and volunteers

BDPC developed a format to evaluate the performance of CAs and volunteers. According to this format BDPC field staff regularly evaluate the performance of CAs and volunteers through direct monitoring of the activities performed by the CAs and volunteers. They are related as very good, satisfactory and not good based on their performance. In Dhunail almost 55% change agents and 53% volunteers have been found to be very good, while the rest of the CAs and volunteers as satisfactory. On the other hand, in Bara Bainna 30% change agents were found to be good, 55% satisfactory and performance of the rest of the CA's were not found so good.

The following table shows the performance of CAs:

SI #	Name of the area	Status of CAs			
		Total number of CAs	Very good	Satisfactory	Not good
1	Bara Bainna	47	14 (30%)	26 (55%)	07 (15%)
2	Dhunail	22	12 (54%)	09 (41%)	01 (4%)

The performance tables of the CAs and volunteers for both the areas are attached herewith this report as annexure-3.

C.09 Monitoring of the CAs activities

In this stage family and community level discussion by the CAs and volunteers have been monitored by the BDPC field staff. BDPC field staff directly observed 22 and 34 family and community level discussions in Dhunail and Bara Binna respectively during this quarter.

C.10 Supervision and monitoring of the project activities

BDPC central office has been supervising and monitoring the project activities through field visit. During their visit they observed few discussions session being conducted by the Change Agents. They also observed the message dissemination procedure during the field visit. BDPC central office is closely monitoring its field activities under the CFIS project. One of its Programme Officers was sent to the project area for rechecking the household level survey. The findings of this report have been annexed with this report as annexure-4.

C.11 Mock demonstration for both the areas

Mock demonstration is one of the important activities under the CFIS project. Last year a mock exercise was conducted in Bara Bainna. Similarly a mock demonstration was organized in Dhunail on 27th September 2005 at the Dhunail Registered Non-government Primary School Ground. This programme was presided over by Mr. Aminur Rahman Surjo, local UP member. Mr. M Firoz Siddiquee, Chairman, Daptiar Union Parishad and Md. Abbas Uddin, Head Master, were the chief guest and special guest respectively.

As many as 34 change agents and volunteers took active part in performing various roles in the mock demonstration. Regular rehearsals were held during the third week of the month of September 2005 for conducting this event in a befitting manner. The following subjects were incorporated in the mock demonstration :

During pre-flood phase :

- Preparation of work plan of the VFMC
- Determination of flood danger level of the area.
- Conduction of awareness raising activities at work places, educational institutions, social gatherings,
- Family level discussions on topics like colour and implication of flags, raising of plinth of the house, tree plantation, water and sanitation, cattle rearing, storage of seeds and food management etc. and
- Organizing cultural events

During Flood Phase :

- Hoisting of warning flag by VFMC members
- Dissemination of flood warning messages by volunteers through miking and beatings of drums
- Helping the people undertake rescue operation and shifting them to safer places by volunteers.
- Helping people by the members of VFMC and the volunteers in matters of food management, health care, water and sanitation and security.
- Shelter and camp management



Glimpses of the Mock Exercise

C.12 Cultural events for new area

Though this activity is scheduled in this quarter, the community people requested us for organizing the cultural activity during the coming winter. Considering their request we propose to organize the cultural programme in December 2005.

Validation of the number flag points in both the areas

This year, BDPC operated five flag points by the Change Agents. During this monsoon we discussed with the community people of Bara Bainna regarding the number of flag hoisting places. According to their opinion, three flag hoisting points will be good enough for the whole area, though they had identified five locations last year. In Dhunail the three flag hoisting points would be sufficient to serve their purpose, the community people reiterated.

Field visit of Mr. W. Robert Laitos

Mr. W.Robert Laitos from Riverside Tachnology, inc visited BDPC's field area (Bara Bainna and Dhunail) under the CFIS project. Mr. Mozharul Huq, Consultant and Mr. Moly Chaki, Programme Coordinator of BDPC accompanied Mr. Robert.



The objective of the field trip was to monitor on going CFIS progress in each of the villages.

Mr. Robert held discussions with the following groups in both the areas:

- Change Agents
- Volunteers
- Local people
- BDPC staff

Mr. Robert had submitted an elaborate report to all concerned quarters on conclusion of his field visit.

Critical Comments

- The message regarding increase and decrease of water in terms of quantity was not absolutely correct. The message for 1 blue flag, means 9 inches of water may increase within next 48 hours. But reality was that the water had actually increased only 2/3 inches. This slight increase of water was not at all perceptible to the community people. Therefore, the message regarding increase of quantity of water should given in more precisely.
- Coordination problem: Both at the central as well as field level the coordination was not so good between the three parties. At the field level there should be regular coordination meeting between all the parties involved in the process. Lack of understanding among the field staff has been noted. Some of field staff representating a particular agency thought that they are the representative of implementing agency for monitoring the activities of BDPC. For successful implementation of the project initiative all the partner agencies should realise that it is a collaborate effort and they should work in harmony.

Recommendations:

- Since the community people are often confused with the five colour of the flags as well as their interpretation, it would in the fitness of things to reduce the type of flags from five to two, i.e. white and blue.
- For ensuring smooth coordination between three parties a 3/4 members team should be formed with representatives from BDPC, CEGIS and EMIN.

Conclusion:

The activities during this quarter have been successfully completed as per work plan except in the following cases:

- Capacity enhancement for the members of UzDMC for Nagarpur Upazila
- Refresher course for the the members of UzDMC for Daulatpur Upazila
- Cultural events for new area

The capacity enhancement training and the refresher course for UzDMC Nagarpur and Daulatpur respectively will be implemented in the next quarter. The cultural event will be organised in the last quarter. However it is our earnest hope that the activities implemented so far in the two project intervention areas will hopefully leave positive impacts for flood preparedness at the family and community levels.

Pictorial View of the Activities Conducted during the Quarter



Family level discussion



Family level discussion



School Orientation



Field visit by Robert



Meeting of VFMC



Plantation Activities

Picture on Mock Demonstration



Mock Demonstration (Continued)



Annexure-1

Household level survey Report

Area: Bainna

Respondent

Type of Respondent	Number	%
Male	63	39.6
Female	96	60.4
Total	159	100

Age

Age group	Number	%
16-20	01	00.6
21-30	17	18.7
30+	141	88.7
Total	159	100

Occupation

Type of Occupation	Number	%
Housewife	92	57.9
Farmer	34	21.4
Day Labour	05	03.1
Small Business	11	08.9
Service	03	01.9
Livestock farming	--	--
Others	14	08.8
Total	159	100

Monthly Income

Taka	Number	%
0-1000	08	05.1
1001-2000	22	13.8
2001-3000	77	48.4
3001+	52	32.7
Total	159	100

Education

Education Level	Number	%
Illiterate	41	25.8
Can Sign	90	56.6
Primary	16	10.1
Below SSC	05	03.1
SSC	07	04.4
Total	159	100

Do you know about flood warning flag and it's interpretation?

1

Response	Number	%
Yes	142	89.3
No	17	10.7
Total	159	100

If yes, Please explain

Flag Color	Correct		incorrect	
	Number	%	Number	%
Red	99	62.3	43	27.1
Yellow	70	44.1	72	45.3
Green	99	62.3	43	27.1
Blue	141	88.7	01	00.6
White	142	89.3	--	--

* Multiple responses

Have you got early warning?

Response	Number	%
Yes	141	88.7
No	18	11.3
Total	159	100

If yes, what was the source of information?

Response	Number	%
Observed flags	79	56.0
Neighbors	13	09.2
Other family members	38	27.0
CAs	41	29.1
Volunteers	45	32.0
Observed Flood marker	08	05.7
Observed bulletin board	07	05.0
Others	--	--

*Multiple responses

If yes, what was the authenticity of the received message about water increase and decrease?

Response	Number	%
Correct	137	97.2
Incorrect	04	02.8
Total	141	100

2

Was that received information useful to you for reducing losses?

Response	Number	%
Useful	25	17.7
Partially useful	103	73.1
Useless	13	09.2
Total	141	100

If useful or partially useful, what were the areas of utilities?

Response	Number	%
Take safe place	--	--
Farming	111	86.7
Livestock management	40	31.3
Food storage	09	07.1
Fuel Storage	03	02.3
Children/women/ elderly care	--	--
Health care	02	01.6
Ensuring safe water	19	14.8
Making raft	25	19.5
Making Macha	07	05.5
Others	--	--

*Multiple responses (128 respondents)

Annexure-2

Household level survey Report

Area : Dhunail

Respondent

Type of Respondent	Number	%
Male	67	38.0
Female	110	62.1
Total	177	100

Age

Age group	Number	%
16-20	03	01.7
21-30	13	07.3
30+	161	91.0
Total	177	100

Occupation

Type of Occupation	Number	%
Housewife	109	61.5
Farmer	52	29.4
Day Labour	03	01.7
Small Business	04	02.3
Service	04	02.3
Livestock farming	--	--
Others	05	02.8
Total	177	100

Monthly Income

Taka	Number	%
0-1000	01	00.6
1001-2000	27	15.3
2001-3000	73	41.2
3001+	76	42.9
Total	177	100

Education

Education Level	Number	%
Illiterate	21	11.9
Can Sign	92	52.0
Primary	25	14.1
Below SSC	31	17.5
SSC	08	04.5
Total	177	100

Do you know about flood warning flag and it's interpretation?

1

Response	Number	%
Yes	163	92.1
No	14	07.9
Total	177	100

If yes, Please explain

Flag Color	Correct		incorrect	
	Number	%	Number	%
Red	118	66.7	32	22.5
Yellow	89	50.3	59	41.5
Green	108	61.0	39	27.5
Blue	163	92.0	--	--
White	155	87.6	08	05.6

*Multiple responses

Have you got early warning?

Response	Number	%
Yes	163	92.1
No	14	07.9
Total	177	100

If yes, what was the source of information?

Response	Number	%
Observed flags	105	59.3
Neighbors	--	--
Other family members	88	49.7
CAs	59	33.3
Volunteers	53	29.9
Observed Flood marker	--	--
Observed bulletin board	--	--
Others	--	--

*Multiple responses

If yes, what was the authenticity of the received message about water increase and decrease?

Response	Number	%
Correct	163	94.2
Incorrect	10	05.8
Total	173	100

2

Was that received information useful to you for reducing losses?

Response	Number	%
Useful	36	22.1
Partially useful	109	66.9
Useless	18	11.0
Total	163	100

If useful or partially useful, what were the areas of utilities?

Response	Number	%
Take safe place	--	
Farming	121	74.2
Livestock management	125	76.7
Food storage	04	02.5
Fuel Storage	30	18.4
Children/women/ elderly care	--	--
Health care	--	--
Ensuring safe water	03	01.8
Making raft	--	--
Making Macha	--	--
Others	--	--

*Multiple responses (130 respondents)

Annexure-3

The performance of the CAs at a glance

Village: Dhunail

Upazila: Nagarpur

SI #	Name of the CAs	Very good	Satisfactory	Not good
01	Bçjeαl lqjje pŞkÑ	✓		
02	qjçhhαl lqjje	✓		
03	çejjC Q¾cÐ çhnÄjp	✓		
04	®jix lçgL çjuj		✓	
05	®jix nijpαm qL		✓	
06	qeαgj ®hNj		✓	
07	njçqçj pαmajej	✓		
08	®jjRj: p-eLj ®hNj		✓	
09	-jjRj: ESjmj ®hNj		✓	
10	-jjRj: j-ejujlj ®hNj	✓		
11	-jjRj: Qfmj hjmj	✓		
12	Jpjje NçZ	✓		
13	®jix ejçRI EçYe		✓	
14	®jix üfe jjqjαc	✓		
15	®jjRj: ®leα ®hNj		✓	
16	®jjRj: ®gl-c±p£	✓		
17	®jjRj: Sjqjejlj ®hNj	✓		
18	-jjx çpljSαm Cpmij	✓		
19	-jjx gSmαm qL			✓
20	®jjqiÇjc Bm£		✓	
21	Bîjp Bm£	✓		
22	®jjRj: pijmj		✓	

The performance of Volunteers at a glance

Village: Dhunail

Upazila: Nagarpur

SI #	Name of the Volunteers	Very good	Satisfactory	Not good
01	-jix Ljil'cjje	✓		
02	fjil'm Bš²j	✓		
03	l£ej lje£ Bš²j	✓		
04	®jix pi-Scæm Lçlj		✓	
05	®jix ®pi-qm ljei		✓	
06	®jix SijçLI ®qi-pe		✓	
07	®jix çmVe	✓		
08	®jiRix gjçqji Bš²j		✓	
09	®jiRix Sueh Bš²j		✓	
10	®jix jipæca lqjje	✓		
11	eSlim Cpmij	✓		
12	nçqcæm	✓		
13	®jix ®jijnjlg ®qi-pe		✓	
14	-jix nçgEm Cpmij			✓
15	li-pm jiqjæc		✓	
16	çnOf£ Bš²j	✓		
17	çecm	✓		
18	nçqcæm	✓		
19	®RiVe çjuj			✓

At a glance the performance of the CAs

Village: Bara Bainna

Ward No-1

Upazila: Daulatpur

SI #	Name of the CAs	Very good	Satisfactory	Not good
01	-jix Bh ^α e Dj		✓	
02	®jix h q c ^α lqjie	✓		
03	®jix j j ^α e			✓
04	®jix L mij		✓	
05	®jix i o e ®nM	✓		
06	-jix Bhc ^α m q çmj		✓	
07	®j Rix q çRe h e ^α	✓		
08	®j Rix S æ a Bl		✓	
09	®j Rix g ç c Bš ² l	✓		
10	®j Rix e ^α S q e	✓		
11	®jix Dj e Bm£		✓	
12	®jix L çgm N S£		✓	
13	®jix BSNI Bm£ ®j ð	✓		
14	®jix Bhc ^α m l çq	✓		
15	®jix p j c ®nM		✓	
16	f-ln n£m			✓
17	-jix Sc ^α ®nM	✓		
18	-jix ® S Em		✓	
19	®jix q ç hh ^α ð q	✓		
20	®j Rix p mq		✓	
21	®jix ®p mC çpLc l		✓	
22	®jix m ÖV ^α çju		✓	

At a glance the performance of the Volunteers

Village: Bara Bainna

Ward No-1

Upazila: Daulatpur

SI #	Name of the Volunteers	Very good	Satisfactory	Not good
01	ৱজিখ নিচজি চজুি		✓	
02	ৱজিৱজিখ পৱচজি BŞ²il	✓		
03	ৱজিখ হসমৱল লজিie		✓	
04	ৱজিখ qSla Bm£	✓		
05	ৱজিখ Bhcৱm Mj-mL	✓		
06	ৱজিখ Sচq!içYe		✓	
07	ৱজিখ Bhcৱm Sচmm			✓
08	-জিখ প-জS Bm£	✓		
09	ৱজিখ মjম চজুি		✓	
10	ৱজিqjখ নq£c NjS£		✓	
11	ৱজিখ Cuic Bm£		✓	
12	ৱজিখ নিq Bmj	✓		
13	ৱজিৱজিখ Ljmj	✓		
14	ৱজিৱজিখ S-hcj			✓
15	-জিখ ৱSjEm		✓	
16	ৱজিখ qjçhhৱðjq	✓		
17	fçl-aio Lৱjil			✓
18	ৱজিখ çpljSৱm Cpmij			✓
19	fĐija Lৱjil	✓		
20	ৱজিখ jjæje	✓		
21	-জিqjখ নিq£e Bmj			✓
22	ৱজিখ qjçeg			✓
23	ৱজিjখ Bm jjæe	✓		
24	ৱজিৱজিখ ৱSpçje	✓		
25	ৱজিৱজিখ fjM£			✓

At a glance the performance of the Volunteers

Village: Bara Bainna

Ward No-2

Upazila: Daulatpur

Sl #	Name of the Volunteers	Very good	Satisfactory	Not good
01	-jix lqjL cpLcjl	✓		
02	@jix Bhcām Sîjl		✓	
03	@jix jçgS			✓
04	@jix @jijSjqil		✓	
05	@jix pj-ljujl			✓
06	@Nifjm ljs hwn£		✓	
07	@jijRix gj-ajj		✓	
08	@jijRix j-ejujlj			✓
09	@jijRix Sαçm		✓	
10	fcEj lje£	✓		
11	-jijRix plhjeα		✓	
12	@jijRix pαçguj			✓
13	@jijRix çnOf£		✓	
14	@jijRix pjCmj		✓	
15	@jijRix j-ejujlj			✓
16	@jix jipαçal Cpmjj		✓	
17	@jix BRilçYe			✓
18	@jix jjjαc Bm£			✓
19	@jix Eαm			✓
20	@jix pjijc	✓		
21	@jix hαYα		✓	
22	@jix lJne	✓		
23	@jijRix çhmçLp @hNj		✓	
24	@jix @jijql @nM			✓
25	@jijRix Sçlej		✓	
26	@jix CEεαp		✓	

At a glance the performance of the CAs

Village: Bara Bainna

Ward No-2

Upazila: Daulatpur

SI #	Name of the CAs	Very good	Satisfactory	Not good
01	-jix jicel jām	✓		
02	©jix ©j¼Vα -nM	✓		
03	©jix ©hö jjahI	✓		
04	©jix BI-nc Bm£ NjS£	✓		
05	n£dij IjShwn£		✓	
06	©jx ©Nimjf jām		✓	
07	©jIRix B-jei Mjaæe		✓	
08	©jIRix ©hNj		✓	
09	©jix Bhcam mçag		✓	
10	©jix hLαm		✓	
11	©jIRix BeSα ©nM		✓	
12	©jix pijmj ©nM			✓
13	©jix pijic		✓	
14	©jix jDeαçYe		✓	
15	©jix Mj-mL ©nM			✓
16	©jix ijoje ©nM	✓		
17	-jix Bmj EçYe			✓
18	©jix Lçlj			✓
19	çhjm IjShwn£		✓	
20	©jix Ijö jām		✓	
21	©jIRix gçlca-æRj		✓	
22	©jIRix cαdSje		✓	
23	©jIRix Sl£ej		✓	
24	©jix jçaEl Iqjje		✓	
25	©jix Bpjc			✓

Annexure-4

Central Monitoring of CFIS Project

Duration : 20 September to 24 Sept. /05

Monitoring Area : Boro Bonna
Dhunail

Total Percipient : Boro Bonna- 30
Dhunail –30

1) There is no big deviation between previous survey and present rechecking regarding the following issues

- Type of respondent
- Age
- Occupation
- Monthly income
- Education

2) In case of flood warning received, there are some deviation

<u>Previous survey</u>	<u>Central Monitoring</u>
Yes – 93%	87%
No. – 7%	13%

3) In case of flag color, the previous survey, they did not ask any question about Red and Yellow flag.

On the other hand my findings that maximum people know about only White and blue colour flag. Green, Yellow and Red color is difficult to remember for them.

4) Maximum villagers(47%) get information about flood from observing the flag. They do not observe flood marker and bulletin board.

5) Maximum villagers (77%) mentioned that this project is very much useful for them.

6) 60% beneficiaries say that this warning system is helpful for their farming

Comments :

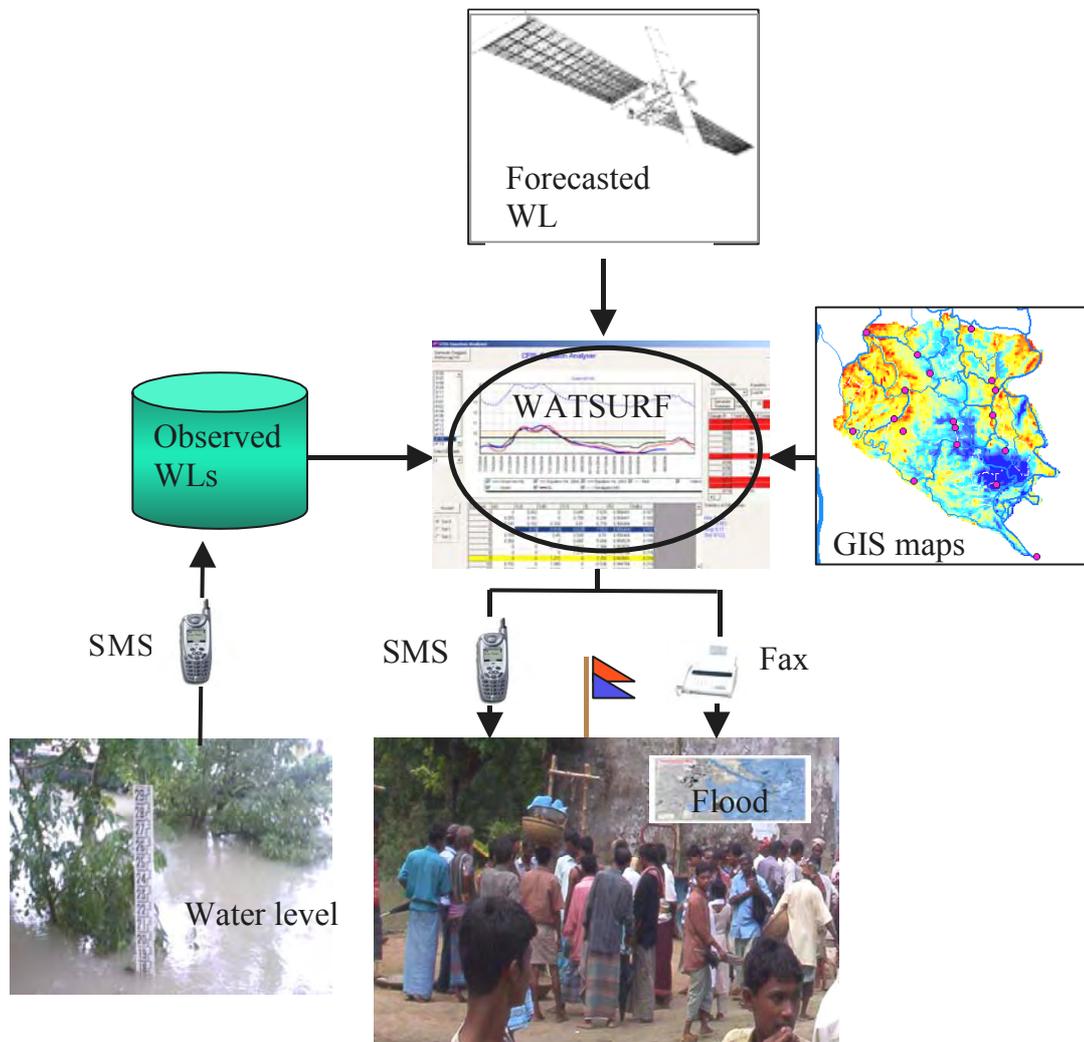
- Useful project for flood affected people
- Previous Household survey is 90% correct
- Community wants more accurate information interms of increasing or decreasing of water.
- Community wants to get information about flood situation more then one month before.
- More village based training is necessary for Red, Yellow and Green color flag.

Appendix 3 - Replication Strategy Working Paper

The following is the cover page and table of contents for the Replication Strategy Working Paper. The full text will be sent to USAID as an electronic file and is also available from RTi upon request.

Working Paper

Replication Strategy of CFIS/EMIN Local Level Flood DST



Dhaka

August 2005

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