

Rural Housing & Affordable Innovation

Implementing Building for Safety in Dinajpur District, Northern Bangladesh

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August 1997

***A report on
Housing & Hazard's pilot project with Chetonar Dak
in two volumes:***

Volume 2 : WORKSHOP MANUAL & FLIPCHARTS

Project dates : September 1996 to May 1997

Report presented to the first Housing & Hazards UK Seminar,

Exeter, 17th November 1997.

The main objective of the Housing & Hazards Group is to make safer houses available to vulnerable people in regions of the world affected by natural hazards.

The Group's first pilot project was designed to explore appropriate methods for communicating building for safety information within a rural low-income community where the written word is not always understood.

This report may be quoted freely but please acknowledge its origin as the Housing and Hazards Group Report ERC/97/115.

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Preface

This is the second part of a two-volume report on Housing and Hazards' first Action Research programme that looked at house construction processes in rural Bangladesh and worked with a rural community to develop practical affordable improvements in technologies.

This volume describes the workshop processes used to share information among and with the community. The process was developed after consultation with Dr Ian Davis, to whom the group is most grateful for his support.

The processes and presentational materials are given as they were presented to the community groups. A subsequent study (Housing & Hazards and the Workshop process: Realizing Potential, 1999) reviewed the medium term impacts of this work.

Others are welcome to use and adapt these materials provided that they acknowledge the original source and provide feedback to the Group.

We express our gratitude to Matt Carter and to the many enthusiastic volunteers who have followed his lead to face the challenges of providing affordable durable homes for the low-income families of Bangladesh. The work started by this programme is continuing at various levels in Bangladesh. We would be pleased to know of similar work in other countries facing similar challenges.

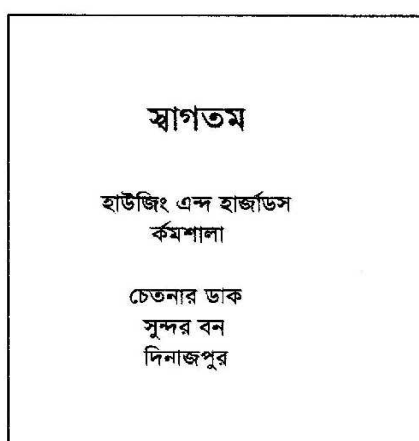
Dr Robert Hodgson, H&H Coordinator

Workshops Outline

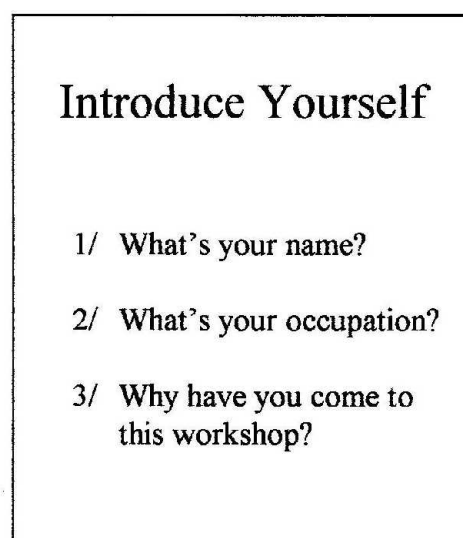
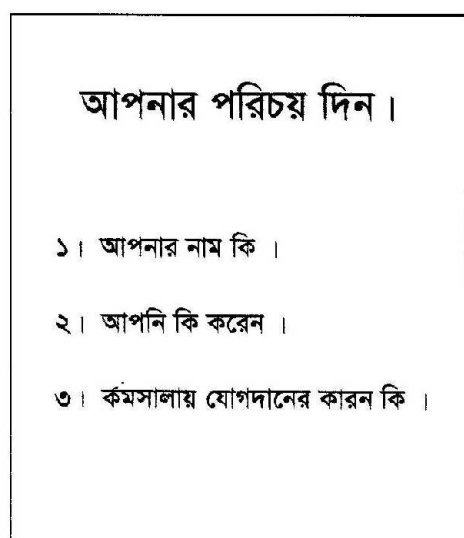
<i>Week 1</i>	WELCOME		
	Activity 1	Welcome	
	Activity 2	Warm up - Participants Introductions	Sharing
	Activity 3	Expectations & Objectives	Brainstorm
	Activity 4	Housing Review	Sub group discussion
	Activity 5	Comments	Brainstorm
	Activity 6	Close	
<i>Week 2</i>	HAZARDS		
	Activity 1	Welcome & Review	
	Activity 2	Warm up - Years of experience	Sharing
	Activity 3	Hazard types	Brainstorm
	Activity 4	Case studies	Extended sharing
	Activity 5	Vulnerability	Teaching/ Group discussion
	Activity 6	Hazard Impact	Sub group discussion
	Activity 7	Comments	Brainstorm
	Activity 8	Close	
<i>Week 3</i>	BUILDING WITH MUD		
	Activity 1	Welcome & Review	
	Activity 2	Wall building introduction	Teaching
	Activity 3	Wall building instructions	Practical work introduction
	Activity 4	Wall building practical	Practical work
	Activity 5	Wall building practical evaluation	Practical evaluation
	Activity 6	General discussion	Group discussion
	Activity 7	Comments	Brainstorm
	Activity 8	Close	
<i>Week 4</i>	BUILDING WITH BAM BOO		
	Activity 1	Welcome & Review	
	Activity 2	Warm Up - Review mud walls	Practical evaluation
	Activity 3	Introduction to bamboo	Teaching / Practical work
	Activity 4	Post treatment	Practical work
	Activity 5	Knee joints practical	Practical work
	Activity 6	Discussion	Group discussion
	Activity 7	Comments	Brainstorm
	Activity 8	Close	
<i>Weeks</i>	ROOF CONSTRUCTION		
	Activity 1	Welcome & Review	
	Activity 2	Warm up - review knee joints	Practical evaluation
	Activity 3	Practical Introduction	Practical work introduction
	Activity 4	Sapra roof construction	Practical work
	Activity 5	Discussion	Group discussion
	Activity 6	Lifecycle costing	Sub group discussion
	Activity 7	Comments	Brainstorm
	Activity 8	Close	
<i>Week 6</i>	CREDIT & MAINTENANCE		
	Activity 1	Welcome & Review	
	Activity 2	Warm up - most interesting thing	Sharing
	Activity 3	Roof Budgeting review	Group discussion / Teaching
	Activity 4	Credit survey	Sharing
	Activity 5	The Chetonar Dak Credit Game	Role play
	Activity 6	Credit Assessment	Group discussion
	Activity 7	Maintenance Key Points	Teaching
	Activity 8	Inspection Routine	Sub group discussion
	Activity 9	Comments	Brainstorm
	Activity 10	Close	
<i>Week 7</i>	CONCLUSION		
	Activity 1	Welcome & Review	
	Activity 2	Warm up - review mud walls	Practical evaluation
	Activity 3	Demonstration Building Assessment	Practical evaluation
	Activity 4	Workshops Summary	Group discussion
	Activity 5	Future Plans	Group discussion
	Activity 6	Final Comments	Brainstorm
	Activity 7	Close	

Week 1 WELCOME**Week 1 - Activity 1 Welcome**

Purpose	To open the workshops formally and welcome participants	
Time	15 minutes	
Materials	Flipchart 1.1	"Welcome"
	Workshop schedules	
	Registration sheets	
Activities	<ul style="list-style-type: none"> • Trainers formally open the workshops and welcome the participants • Trainers distribute workshop schedules • Trainers check that all participants are registered 	

**Week 1 - Activity 2 Warm up - Participants Introductions**

Purpose	To introduce participants to each other and make them feel comfortable and relaxed	
Time	20 minutes	
Materials	Flipchart 1.2	"Introductions"
Activities	<ul style="list-style-type: none"> • Participants take it in turns to introduce themselves with their name, job and reasons for attending the workshops 	



Week 1 - Activity 3 Expectations & Objectives

Purpose	To clarify objectives of the workshops and the expectations of the participants and the trainers	
Time	25 minutes	
Materials	Flipchart 1.3	"Expectations"
	Flipchart 1.4	"Objectives"
Activities	<ul style="list-style-type: none"> Trainers conduct a brainstorming session in which they ask the participants to state their expectations, writing down everything that is said. 	

কর্মসালা থেকে আপনি
কি পেতে চান।

What do you expect
from the workshops?

- Trainers go through the objectives of the workshops and discuss how they match the participants expectations
- Trainers add other objectives if necessary

কর্মসালার উদ্দেশ্যসমূহ

- ১। সুন্দর বন গ্রামে ঘরবাড়ীর সমস্যাগুলি খুঁজে বাহির করা।
- ২। কোন সমাধানটি উপযুক্ত এবং গ্রহন যোগ্য তাহা নির্ণয় করা।
- ৩। এই সকল সমাধানের উপর ভিত্তি করে বাস্তব প্রশিক্ষণ দেওয়া।
- ৪।
- ৫।

Workshop Objectives

- 1/ Find out what problems there are with houses in Sundarban
- 2/ Find out which improvements are affordable and appropriate
- 3/ Give practical training in these improvements
- 4/
- 5/

Notes for trainers

This is an important activity. It allows participants to express their expectations and ensures that they know what to expect, Mention that the flipcharts with the objectives and expectations will be reviewed during the evaluation at the end of the workshops.

Lack of clear expectations and objectives could lead to misunderstandings between trainers and participants. If the expectations of the participants does not match the objectives and training plan try to adjust the plan to fit their needs better.

It is important that participants understand that the workshops will not lead to a relief programme. E.g. donation of building materials.

Snack Break

Week 1 - Activity 4 Housing Review**Purpose**

To find out the mix of house types of the participants and to discuss their good and bad points

Time

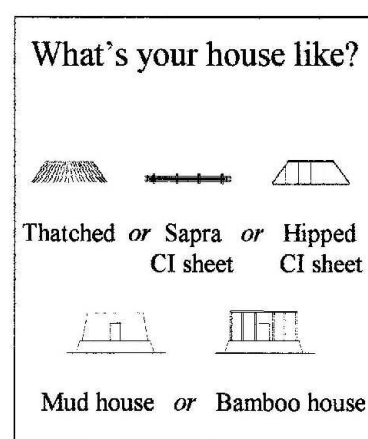
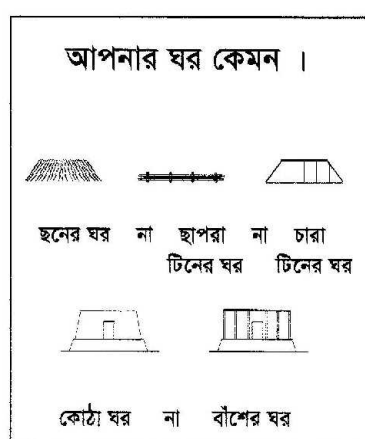
1 hour

Materials

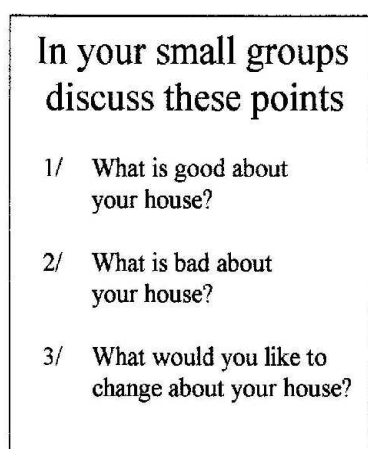
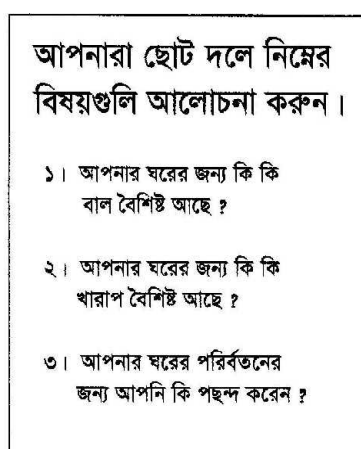
Flipchart 1.5 "What's your house like?"
 Flipchart 1.6 "Discussion points"
 Flipcharts 1.7a-1.7f "Report back"
 Notebooks and pens

Activities


- Participants split into subgroups based on the materials of their houses.
- E.g. Mud wall & thatched roof
 Mud wall & sapra CI sheet roof
 Mud wall & hipped CI sheet roof
 Bamboo wall & thatched roof
 Bamboo wall & sapra CI sheet roof
 Bamboo wall & hipped CI sheet roof



- Sub groups elect a secretary to take notes and report back
- Sub groups discuss the following points
 - What is good about their type of house?
 - What is bad about their type of house?
 - What they would like to change about their type of house?



- Sub group secretaries report back their discussion results to the main group
- Trainers write down the main points of the report back.
- Trainers discuss findings and explain that we will focus on these points in the coming workshops




কোঠা এবং
ছনের গর

কি ভাল।

কি খারাপ।

কি পছন্দ করেন।



Mud &
Thatched House

What's good /

What's bad /

What changes /

Notes for trainers

Make sure everyone fully understands the task. Trainers should monitor the subgroups to check that they do understand. If sub groups are too small they can be rolled together into larger sub groups. If someone's house does not fit a subgroup then assign them to an appropriate group for the discussion.

Having the men and women together for this week lets us see how they work together however there is a danger of men dominating this activity. Trainers should encourage women to take part in the discussion and if they feel that women's opinions have been unaired they should be asked if they have anything to add during the report back. The report back must be conducted verbally so that everyone can hear what points are being written on the report back flipcharts.

Week 1 - Activity 5 Comments

Purpose	To evaluate participants views of this week	
Time	10 minutes	
Materials	Flipchart 1.8	"Your comments"
Activities	<ul style="list-style-type: none"> Trainers conduct a brainstorming session in which they ask the participants their comments on the workshop and write down everything that is said 	

আপনার মন্তব্য

Your Comments

Week 1 - Activity 6**Close**

Purpose	To close the workshop	
Time	5 minutes	
Materials	Flipchart 1.9	"Come next week"
Activities	<ul style="list-style-type: none"> • Trainers remind participants of next weeks times • Trainers ask for a show of hands of who thinks they will come again 	

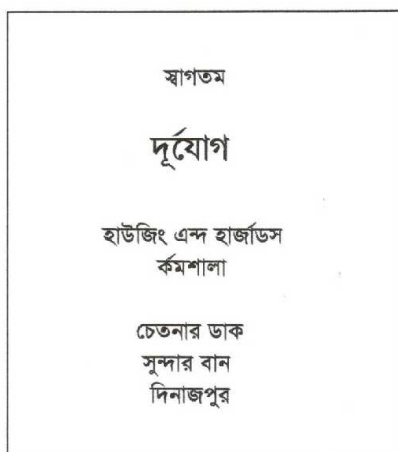
দয়া করে আগামী সপ্তাহে আসবেন	
পুরুষ	বুধবার ২৩ এপ্রিল
মহিলা	বৃহস্পতিবার ২৪ এপ্রিল

Please come again next week	
Men	Wednesday 23 rd April
Women	Thursday 24 th April

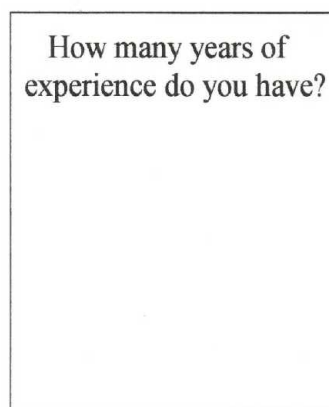
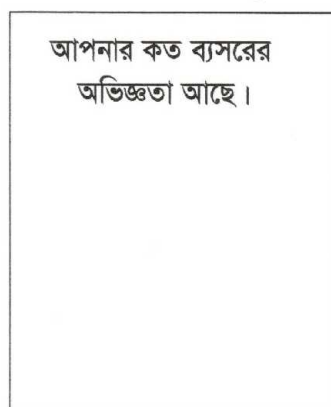
- Break for lunch

Week 2 HAZARDS**Week 2 - Activity 1 Welcome & Review**

Purpose	To welcome the participants, review the activities of last weeks workshop and to introduce the theme of this weeks workshop	
Time	5 minutes	
Materials	Flipchart 2.1	"Hazards welcome"
Activities	<ul style="list-style-type: none"> Trainers welcome the participants, review the Welcome workshop and introduce the theme of hazards 	

**Week 2 - Activity 2 Warm up - Years of experience**

Purpose	To remind the participants of the participative nature of the workshops and to make them feel comfortable and relaxed.	
Time	5 minutes	
Materials	Flipchart 2.2	"Years of experience"
	Ball	
	Calculator	



Activities	<ul style="list-style-type: none"> Trainers introduce and explain the exercise The participants stand up and throw the ball between them. When a participant has the ball he/she calls out the number of years of experience they have in building houses and then sit down. Trainers add up the numbers to get the total and explain that this is why it will be a
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group of people learning from each other rather than just the participants learning from the trainers.

Week 2 - Activity 3 Hazard Types

Purpose	To find out which hazards are active in the area and their relative importance	
Time	5 minutes	
Materials	Flipchart 2.3	"Hazard Types"
Activities	<ul style="list-style-type: none"> Trainers conduct a brainstorming session in which they ask the participants what the local hazards are and write down everything that is said Trainers ask the participants which is the most frequent hazard and which is the most severe hazard 	

সুন্দর বনে কি কি
দুর্যোগ আছে।

What hazards are
there in Sundarban?

Week 2 - Activity 4 Case Studies

Purpose	For participants to give a narrative account of how their house was affected by a hazard and their responses during and afterwards	
Time	20 minutes	
Materials	Flipchart 2.4	"Case study"
	SSI question/topic list	

দুর্যোগ পূর্ন
সময়ের বর্ণনাকর

দুর্যোগ পূর্বে আপনার ঘর
কেমন ছিল।
দুর্যোগ আপনার ঘরকে
কি করেছিল।
দুর্যোগ আপনার কি কি
ক্ষতি করেছে।
দুর্যোগ শেষে আপনি কি
করেছিলেন।

Talk about your
disaster experience

What was your house like
before the hazard?
What happened to it during
the hazard?
What other losses did the
hazard cause?
What was your response
after the hazard?

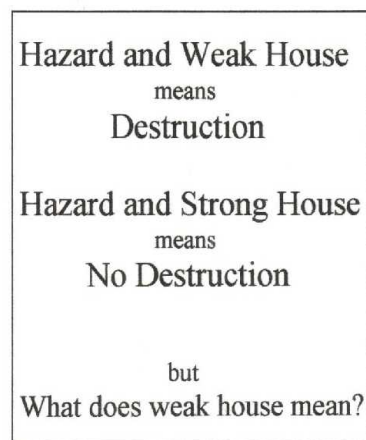
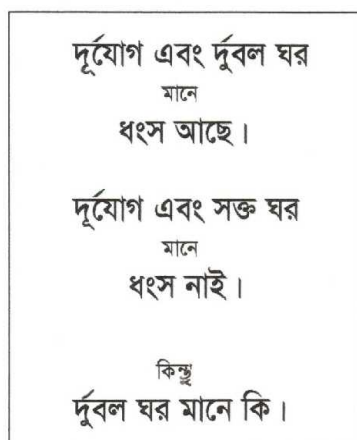
- Activities
- Trainers take a show of hands for whose house has been damaged / destroyed by each of the major hazard types.
 - Trainers ask for a volunteer whose house has been destroyed to discuss his/her experience
 - Trainers conduct a short semi-structured interview (SSI) with the volunteer with the following broad topics :
 - What was your house like before the hazard?
 - What happened to it during the hazard? What other losses did the hazard cause? What was your response after the hazard?
 - The SSI is repeated for each of the major hazard types

Notes for trainers

If there is difficulty finding volunteers trainers should not over pressurise shy participants. Trainers should be sensitive to which participants would be comfortable giving a case study and *ask* them if they are prepared to do it.

Week 2 - Activity 5 Vulnerability

Purpose	To introduce participants to the paradigm: Hazard + Vulnerability = Disaster	
Time	30 minutes	
Materials	Flipchart 2.5	"Vulnerability paradigm"
	Flipchart 2.6	"Local vulnerability"



- Activities
- Trainers explain the paradigm in local terms specific to housing
Hazard + Weak House = Destruction
 - Trainers discuss what is meant by "Weak House". In particular trainers should highlight the fact that in one hazard a house may be weak whilst in a different type of hazard the same house may be strong.
 - Trainers conduct a brainstorming session in which they ask how local house types are vulnerable to local hazard types
- E.g.
- Mud house & Flooding
 - Mud house & Cyclone
 - Bamboo house & Flooding
 - Bamboo house & Cyclone

Notes for trainers

The paradigm has been simplified to take into account the lack of local distinction between disasters and hazards. This is still a very important activity because the concept of "weak" houses and "strong" houses will be referred to frequently during the later workshops. It is crucial that participants fully appreciate the significance of these terms.

দুর্বল ঘর মানে কি ।		
	বন্যা	ঘুনি ঝড়
কোঠা ঘর		
বাঁশের ঘর		



What does weak house mean?		
	Flood	Cyclone
Mud House		
Bamboo House		

Snack Break

Week 2 - Activity 6 Hazard Impact

Purpose	To assess the impacts of hazards and the relative importance of these impacts	
Time	45 minutes	
Materials	Flipchart 2.7	"Sub group formation"
	Flipchart 2.8	"Instructions"
	Flipcharts 2.9a - 2.9d "Report back"	

আপনার ঘর কেমন ।		
		
কোঠা ঘর	না	বাঁশের ঘর
আপনি কোন দুর্যোগ চিন্তা করবেন ।		
বন্যা	না	ঘুনি ঝড়

What's your house like?		
		
Mud house	or	Bamboo house
Which hazard will you think about?		
Flood	or	Cyclone

Activities	• Participants split into sub groups based on the materials of their house and a chosen hazard type.
	E.g. Mud house & Flooding
	Mud house & Cyclone
	Bamboo house & Flooding
	Bamboo house & Cyclone

চারটি আথবা পাঁচটি
ধংসের কথা উল্লেখ।

কোনটি আপনাকে বেশী
অসুবিধা করে।

কোনটি আপনাকে কম
অসুবিধা করে।

Write down four or five
losses that the hazard causes


Which loss causes you
the most problems?

Which loss causes you
the least problems?


- Sub groups elect a secretary to take notes and report back
- Subgroups list 4 or 5 ways that their chosen hazard can cause them loss. They then rank these losses in order of importance
- Sub group secretaries report back their results to the main group
- Trainers write down the results and discuss them

Notes for trainers

Make sure everyone fully understands the task. Trainers should monitor the subgroups to check that they do understand and to assist them with the ranking. The report back must be conducted verbally so that everyone can hear what points are being written on the report back flipcharts.

 কোঠা ঘর
এবং বন্যা

ধংসের।

 Mud house
& Flood

Losses /

Week 2-Activity 7 Comments

Purpose	To evaluate participants views of this week
Time	10 minutes
Materials	Flipchart 2.10 "Your comments"
Activities	<ul style="list-style-type: none"> • Trainers conduct a brainstorming session in which they ask the participants their comments on the workshop and write down everything that is said.

আপনার মন্তব্য

Your Comments

Week 2 - Activity 8 Close

Purpose To close the workshop
 Time 5 minutes
 Materials Flipchart 2.11 "Come next week"

Activities • Trainers remind participants of next weeks times

দয়া করে আগামী
সপ্তাহে আসবেন

পুরুষ বুধবার
৩০ এপ্রিল

মহিলা বৃহস্পতিবার
১ মে

Please come again
next week

Men Wednesday
30th April

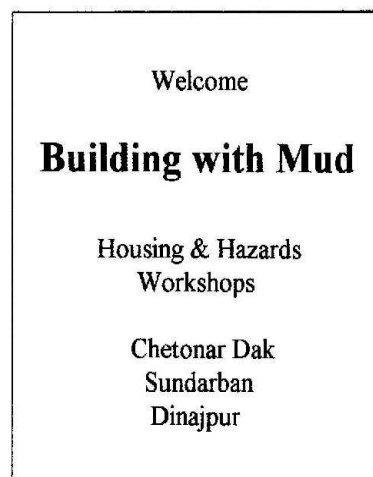
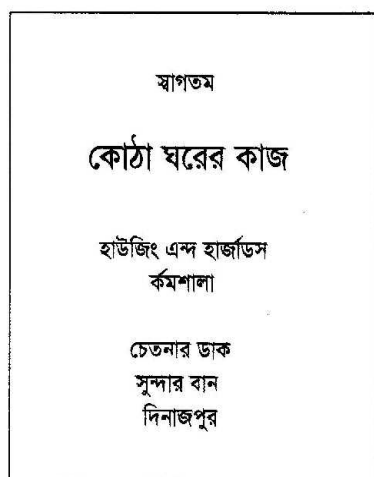
Women Thursday
1st May

Break for lunch

Week 3 BUILDING WITH MUD

Week 3 - Activity 1 Welcome & Review

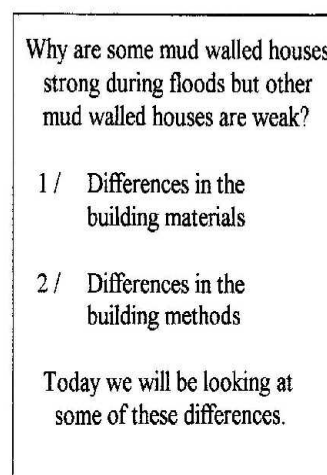
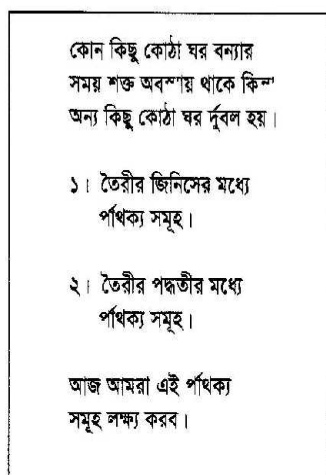
Purpose	To welcome the participants, review the activities of last weeks workshop and to introduce the theme of this weeks workshop	
Time	5 minutes	
Materials	Flipchart 3.1	"Building with Mud welcome"



- Activities
- Trainers welcome the participants, review the Hazards workshop and introduce the theme of building layered mud walls

Week 3 - Activity 2 Wall Building Introduction

Purpose	To explain the why we will be doing a practical wall building exercise	
Time	5 minutes	
Materials	Flipchart 3.2	"Wall building"
Activities	<ul style="list-style-type: none"> Trainers discuss how some traditional mud house are more resistant to flooding than others. Trainers explain that this is due to: <ul style="list-style-type: none"> Differences in the building material Differences in the building method Trainers explain that we will build some small sections of wall to explore these differences 	



Week 3 - Activity 3**Wall Building Instructions**

Purpose	To explain how we will do the practical wall building exercise
Time	15 minutes
Materials	Flipchart 3.3 "Instructions" Sub group instruction papers Mud and water to demonstrate Drop Test
Activities	<ul style="list-style-type: none"> Trainers select group leaders then assist the participants to form into subgroups of 2 or 3 people. Sub group leaders should be selected based upon their experience of building layered mud walls

নির্দেশ সমূহ

আপনার দল সবাই মিলে একটি চোট দেওয়াল তৈরী করবেন।

নিশ্চিত হউন আপনি দ্রব্যগুলি খুব ভাল ভাবে মিশ্রিত করেছেন।

মাটি ও কাদা মিশানোর জন্য পা ব্যবহার করুন।

বেশী পানী ব্যবহার করবেন না।

Instructions

Your group will all work together to make a small wall.

You must mix your building materials very well.

Use your feet to mix the mud

Don't use too much water

- Trainers distribute the sub group instruction papers which say how each group should make the wall. Example instructions are listed below.
- Trainers explain that each group will make a section of wall according to the instructions
- Trainers explain the following points very thoroughly
 - Mixes should be very well mixed
 - Mixes should be trodden to assist mixing
 - The minimum amount of water should be used since this means less cracking.
- Trainers should demonstrate the Drop Test and tell participants to use this to test when there is the right amount of water to build.
- Trainers explain that all baskets should be level baskets

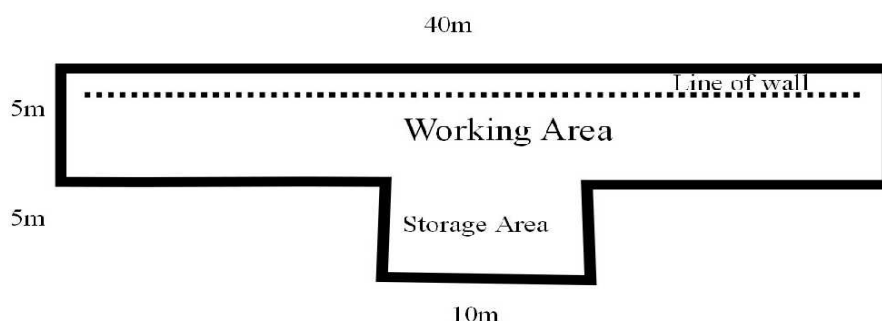
Example of group instructions

Group 1 - 12 baskets of mud	Mix as normal
Group 2 - 12 baskets of mud	Mix as normal The wall will be cut later on
Group 3 - 12 baskets of mud	Mix with your feet Use a ball to check the water
Group 4 - 10 baskets of mud 2 baskets of sand	Mix with your feet Use a ball to check the water
Group 5 - 7 baskets of mud 5 baskets of sand	Mix with your feet Use a ball to check the water

Group 6 - 7 baskets of mud 5 baskets of husks	Mix with your feet. Use a ball to check the water
Group 7 - 7 baskets of mud 3 baskets of husks 2 baskets of sand	Mix with your feet Use a ball to check the water

Week 3 - Activity 4**Wall Building Practical**

Purpose	To explore aspects of good building practice and soil improvement
Time	1 1/2 hours
Materials	Trainers Guidelines - See below Sand, Mud, Unground rice husks, Water Baskets and spades Drinking water, and large work area, eg.

**Activities**

- Participant bring their materials to their working area
- Participants mix their materials adding water as necessary
- Participants build a single layer of a layered mud wall about 2m long
- Trainers supervise the mixing and building and explain points when necessary using the Trainers Guidelines
- Hired labour supplies water to the site on demand
- After all building is finished all participants gather to watch one of the walls being cut to control shrinkage cracking

Notes for Trainers

Trainers should carefully monitor the water content of the mixes and encourage participants to use the Drop Test to see when it is the correct time to start building. If a mix becomes too wet trainers need to ask participants to add more materials in roughly the same ratios as before.

Trainers Guidelines - Hints for Mixing

1. Measure all materials accurately and according to description e.g. number of baskets
2. Avoid mixing with field soil by careful use of spade
3. Spread mud to thin layer 4 fingers thick
4. Spread other materials evenly over mud
5. Mix by pulling outer edges of materials to middle then tread to spread out
6. Repeat until thoroughly mixed
7. Add water carefully mixing and treading as before
8. Check correct water mix with Drop Test

Snack Break

Week 3 - Activity 5**Wall Building Practical Evaluation**

Purpose To evaluate the wall building exercise, explain again the purpose of it and discuss how it will be monitored

Time 20 minutes

এই পদ্ধতি সম্বন্ধে আপনি
কি চিন্তা করেন।

দল নং ১।

দল নং ২।

দল নং ৩।

What do you think
about these methods?

Group No 1 /

Group No 2 /

Group No 3 /

Materials Flipcharts 3.4a-3.4c "Wall Evaluation"
Flipchart 3.5 "Wall
Discussion"

- Activities**
- For each sub group in turn trainers ask for comments about their wall. Comments are taken in particular from the sub group who built it but also from the participants as a whole.
 - Trainers explain again that good building practice and a good wall mix can minimise cracking and make the wall stronger
 - Trainers explain that for a different mud participants might need to do their own small experiments
 - Trainers explain how the shrinkage cracking and the resistance to rain of the wall will be monitored.

আলোচনা

ভাল নির্মান সামগ্রী ও ভাল নির্মান পদ্ধতি
আপনার কোঠা ঘরকে শক্ত করে।

আগামী সপ্তাহে আমরা দেখব কোন
দেওয়ালটি ফেটে যায়।

তার পর আমরা দেখব বৃষ্টি সেটির
কি কি ক্ষতি করে।

আপনি যদি বিভিন্ন ধরনের মাটি
ব্যবহার করেন আপনি অবশ্যই
নিজে ছোট পরীক্ষা করুন।

Discussion

Using a good material and method
can make your mud house strong.

Next week we will look at which
of the walls have cracked.

After that we will see what damage
the rain causes.

If you use other mud you must do
your own small tests like these.

Week 3 - Activity 6**General Discussion**

- Purpose To discuss other ways of improving mud walls
- Time 15 minutes
- Materials Flipchart 3.6 "General Discussion"
- Activities
- Trainers conduct a brainstorming session in which they ask for other ways of improving mud walls and write down all the suggested methods
 - By general consensus trainers part rank the methods for effectiveness and cost

Notes for trainers

Part ranking for cost means finding out the most expensive and the next most expensive then the cheapest and the next cheapest but not ranking the remainder.

Part ranking for effectiveness is done similarly.

আর কি কি উপায়ে আপনার কোঠা ঘর
শক্ত ভাবে তৈরী করা যায়।

কত দাম	কত ভাল

What other things can you do to
make your mud house strong?

how expensive	how good

Week 3 - Activity 7 Comments

- Purpose To evaluate participants views of this week
- Time 10 minutes
- Materials Flipchart 3.7 "Your comments"
- Activities
- Trainers conduct a brainstorming session in which they ask the participants their comments on the workshop and write down everything that is said

Week 3 - Activity 8**Close**

- Purpose To close the workshop
- Time 5 minutes
- Materials Flipchart 3.8 "Come next week"
- Activities
- Trainers remind participants of next weeks times
 - Break for lunch

আপনার মন্তব্য

Your Comments

দয়া করে আগামী
সপ্তাহে আসবেন

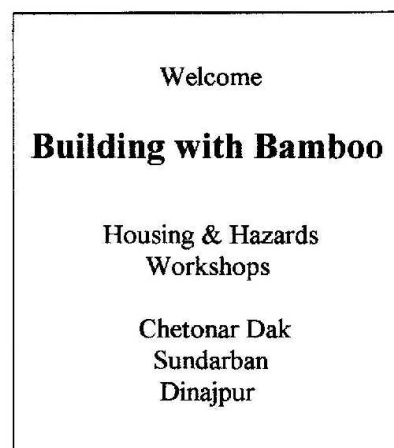
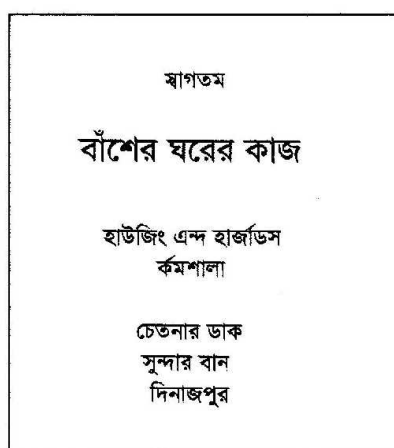
পুরুষ	বুধবার ৭ মে
মহিলা	বৃহস্পতিবার ৮ মে

Please come again
next week

Men	Wednesday 7 th May
Women	Thursday 8 th May

Week 4 BUILDING WITH BAMBOO**Week 4 - Activity 1 Welcome & Review**

Purpose	To welcome the participants, review the activities of last weeks workshop and to introduce the theme of this weeks workshop	
Time	5 minutes	
Materials	Flipchart 4.1	"Building with Bamboo welcome"
Activities	<ul style="list-style-type: none"> Trainers welcome the participants, review the Building with Mud workshop and introduce the theme of bamboo buildings. 	

**Week 4 - Activity 2 Warm Up - Review Mud Walls**

Purpose	To see how the mud walls from week 3 compare after drying and also to make the participants feel comfortable and relaxed	
Time	25 minutes	
Materials	Flipchart 4.2	"Mud Wall Review"
	Mud walls constructed in week 3	
Activities	<ul style="list-style-type: none"> Trainers introduce the exercise Participants spend 10 minutes looking at the walls and discussing them 	

চল আমরা দেওয়াল দেখতে যাই। কোন দেওয়ালটি সব চেয়ে ভাল হয় এবং কোনটি সব চেয়ে খারাপ হয়।	
সব চেয়ে ভাল নং - কেন	ভাল নং - কেন
সব চেয়ে খারাপ নং - কেন	খারাপ নং - কেন

Lets go and look at the mud walls. Which walls are the best and which walls are the worst?	
Best No. - Why	Good No. - Why
Worst No. - Why	Bad No. - Why

- Participants decide which are the two best and which are the two worst
- Trainers conduct a brainstorming session in which they ask the participants the reasons for their choices writing down everything that is said.

Week 4 - Activity 3 Introduction to Bamboo

Purpose	To review the vulnerability of bamboo framed houses and introduce two ways of making them stronger	
Time	30 minutes	
Materials	Flipchart 4.3	"Why vulnerable?"
	Flipchart 4.4	"How to make stronger"
	Model bamboo frame of 5' x 3' plan	
Activities	<ul style="list-style-type: none"> Trainers review the vulnerability of bamboo framed houses 	

**কেন কিছু বাঁশের ঘর
দুর্বল হয়।**

খুটি পচে যায় এবং পোকামাকরে খায়।

দড়িও পচে যায় এবং পোকামাকরে খায়।

যেমন ঘান বর আসে তখন দুর্বল বাঁশের
ঘর ভেঙে যায় কিন্তু শক্ত বাঁশের ঘর
দাড়িয়ে থাকে।

**Why are some
bamboo houses weak?**

The bamboo posts rot and are eaten by insects.

The jute rope also rots and is eaten by insects.


When the cyclone comes then weak bamboo houses will be broken but strong bamboo houses stay standing.

- Trainers demonstrate the effect of rotted posts using a model frame without foundations
- Trainers introduce two ideas
 - *Making posts and joints last longer
 - *Making the frame strong even after the posts are rotted
- Trainers demonstrate the second idea by adding cross bracing and knee joints to the model frame and showing how they make it stronger


কি ভাবে আমরা শক্ত বাঁশের ঘর
তৈরী করিতে পারি।

১। খুটি এবং দড়ি বহু দিন যাতে যায়।

২। পাইরামো শক্ত করার দুইটি
পদ্ধতি আছে।



খুটির মাঝে কোনাকুনি করে বাঁশ দাও।

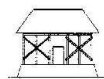


খুটির মাথায় কোনাকুনি করে বাঁশ দাও।


**How can we build strong
bamboo framed houses?**

1 / Make the bamboo posts and string last a long time.

2 / Make the frame stronger by:



Putting cross bracing between the posts



Or putting knee joints at the top of posts

Notes for trainers

There may be local examples of bamboo framed houses with cross bracing such as houses built on brick foundations. If so this can be linked to the workshop. A house on brick foundations is cross braced because the posts are not founded into the ground. When bamboo posts are rotten they are also not founded into the ground so need cross bracing for the same reason.

Week 4 - Activity 4 Post Treatment

Purpose	To give training in treating bamboo posts by firing and painting with bitumen (alkatra)	
Time	45 minutes	
Materials	Flipchart 4.5	"Post Treatment"
	Bamboo posts	
	Straw for firing	
	Bitumen	
	Kerosene, paint brushes & clay pots	
	Soap	
Activities	•With the assistance of a trained builder participants fire a batch of posts together.	

কি ভাবে খুটি বেশী দিন
টেকসই হবে।

কি ভাবে খুটি পোরানো হচ্ছে তার পর
আমরা আলকাত্তা লাগাবো।

১ নং আলকাত্তা ১ কেজি ২৮/= দাম
রানীর বন্দরে।

একটি ঘরের সব খুটি জন্য খালি
১/২ কেজি আলকাত্তা প্রয়োজন।

How can the bamboo
posts last longer?

Burn the posts and then paint
then with bitumen.

Top quality bitumen costs 28Tk
for 1kg at Ranir Bandar.

To paint all the bamboo posts in
a house you need ½kg of bitumen.

- The bottom two hands of the post should be fired and particular attention should be drawn to the sap escaping from the bamboo as steam.
- Trainers select group leaders then assist the participants to form into subgroups of 2 or 3 people. Sub group leaders should be selected based upon their experience of building bamboo framed houses
- Each subgroup takes a bamboo post and paints the bottom of it with bitumen

Notes for trainers

Participants should add a little kerosene to the bitumen and mix well before painting.

The bitumen should be painted to a height half a hand above the final level of the plinth. The unpainted top of the bamboo should be measured to an appropriate length, typically 3^{1/2} hands.

-Snack Break-

Week 4 - Activity 5 Knee Joints Practical

Purpose	To practice different knee joint details	
Time	1 hour	
Materials	Flipchart 4.6	"Knee Joints"
	3' lengths of bamboo	
	String & wire	
	Nails & screws	
	Screwdrivers & hatchets	
Activities	<ul style="list-style-type: none"> • Trainers explain the exercise • Participants make a knee joint using either a full bamboo or a strong bamboo stick for the knee 	

আপনার দল খুঁটির মাথায়
কোনকুনি বাঁশ দিবেন।

৪ টি দল ভাল বাতা ব্যবহার করবেন।

২ টি দল বাঁশ ব্যবহার করবেন।

কোনটি ভাল বাসেন ব্যবহার করতে
পারবেন তাঁর কাটা রূপ শুনা
এবং দড়ি।

Your group will
make a knee joint

4 groups will use a strong
bamboo stick

2 groups will use a full bamboo

Use whatever you like from the
nails, screws, wire and string.

- Trainers label each joint with the group number and tell the participants we will compare the joints next week

Week 4 - Activity 6 Discussion

Purpose	To discuss other ways of improving bamboo framed houses	
Time	15 minutes	
Materials	Flipchart 4.7	"General Discussion"
Activities	<ul style="list-style-type: none"> • Trainers conduct a brainstorming session in which they ask for other ways of improving bamboo framed houses and write down all the suggested methods • By general consensus trainers part rank the methods for effectiveness and cost 	

Notes for trainers

Part ranking for cost means finding out the most expensive and the next most expensive then the cheapest and the next cheapest but not ranking the remainder. Part ranking for effectiveness is done similarly.

আর কি কি উপায়ে আপনার বাঁশের ঘর
শক্ত ভাবে তৈরী করা যায়।

কত দাম	কত ভাল

What other things can you do to
make your bamboo house strong?

how expensive	how good

Week 4 - Activity 7 Comments

Purpose	To evaluate participants views of this week
Time	10 minutes
Materials	Flipchart 4.8 "Your comments"
Activities	<ul style="list-style-type: none"> Trainers conduct a brainstorming session in which they ask the participants their comments on the workshop and write down everything that is said

আপনার মন্তব্য

Your Comments

Week 4 - Activity 8 Close

Purpose	To close the workshop
Time	5 minutes
Materials	Flipchart 4.9 "Come next week"
Activities	<ul style="list-style-type: none"> Trainers remind participants of next weeks times Break for lunch

দয়া করে আগামী
সপ্তাহে আসবেন

পুরুষ বুধবার
১৪ মে

মহিলা বৃহস্পতিবার
১৫ মে

Please come again
next week

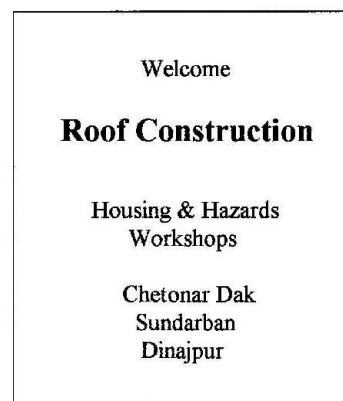
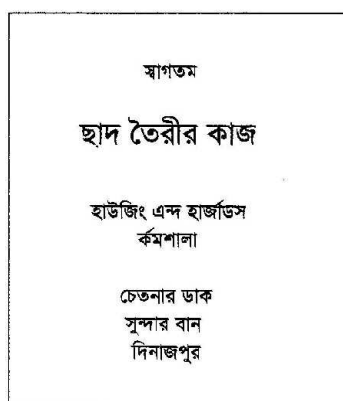
Men Wednesday
14th May

Women Thursday
15th May

Week 5 ROOF CONSTRUCTION

Week 5 - Activity 1 Welcome & Review

Purpose	To welcome the participants, review the activities of last weeks workshop and to introduce the theme of this weeks workshop	
Time	5 minutes	
Materials	Flipchart 5.1	"Roof Construction welcome"
Activities	<ul style="list-style-type: none"> Trainers welcome the participants, review the Building with Bamboo workshop and introduce the theme of roof construction. 	



Week 5 - Activity 2

Warm Up - Review Knee Joints

Purpose	To review last weeks knee joints and also to make the participants feel comfortable and relaxed	
Time	20 minutes	
Materials	Flipchart 5.2	
Activities	<p>"Knee Joint Review" Knee joints from week 4</p> <ul style="list-style-type: none"> Trainers introduce the exercise Participants go and look at the knee joints and bring back the two best and the two worst. Trainers conduct a brainstorming session in which they ask reasons for the choices and write down everything that is said. 	

চল আমরা দেখি গত সপ্তাহের খুটির মাথায় বাঁশ দেওয়া। দুইটি ভাল দুইটি খারাপ খুটির মাথায় বাঁশ নিয়ে আসবেন।	
সব চেয়ে ভাল নং - কেন	ভাল নং - কেন
সব চেয়ে খারাপ নং - কেন	খারাপ নং - কেন

Lets go and look at last weeks knee joints. Bring back the two best and the two worst knee joints.	
Best No. - Why	Good No. - Why
Worst No. - Why	Bad No. - Why

Week 5 - Activity 3**Practical Introduction**

Purpose	To introduce this weeks main practical
Time	10 minutes
Materials	Flipchart 5.3 "Roof types" Flipchart 5.4 "Sapra CI sheet innovations"
Activities	<ul style="list-style-type: none"> Trainers briefly look at the problems with the main local roof types and explain why we will be working on a sapra CI sheet roof Trainers introduce the four innovative elements of the roof that will be practiced

কি ধরনের ছাদ পদ্ধতি সুন্দর বনে আছে।

- ১। ছনের ছাদ - অনেক দিন যাবে না।
- ২। টালি ছাদ - অনেক মজবুত এবং এখন প্রচুর পাওয়া যায় না।
- ৩। প্লাস্টিক ছাদ - লোক ভাল বাসে না।
- ৪। ছাপড়া টিনের ছাদ - ঘুনি ঝরের সময় দুর্বল হয়।
- ৫। চারা টিনের ছাদ - অনেক দাম।

আমরা দেখব কি ভাবে তৈরী করলে ঘুনি ঝরের সময় ছাপড়া টিনের ছাদ শক্ত হবে।

What roof systems are there in Sundarban?

- 1/ Thatched roof - Doesn't last long
- 2/ Tiled roof - Very heavy and no longer available
- 3/ Plastic roof - People don't like it
- 4/ Sapra CI sheet - Weak during the cyclone
- 5/ Hipped CI sheet - Very expensive

We will look at how to make the sapra CI sheet roof stronger during the cyclone

৪ টি পদ্ধতিতে ছাপড়া টিনের ছাদ শক্তিশালী করা যায়।

- ১। উপরের বাঁশে আলকট্টা লাগাবেন।
- ২। বাতা বাঁশও পদ্ধতি ব্যবহার করিতে পারেন।
- ৩। শরের কোনায় টানা বাতা ব্যবহার করবেন।
- ৪। ছাদের উপরের বাঁশ শক্ত করে গুনায় বাধন দিবেন।

4 methods to make a sapra CI sheet roof strong

- 1 / Paint bitumen on the top bamboo
- 2 / Use a bamboo stick method
- 3 / Put bamboo stick braces at the corners of the frame
- 4 / Fix down the top bamboo with strong wire ties

Week 5 - Activity 4 Sapra Roof Construction

Purpose	To give training in innovative improvements to sapra CI sheet rooves
Time	40 minutes
Materials	Bamboo underframe for sapra CI sheet roof mounted on 3' posts Sapra overframe bamboo components prepainted with bitumen Bamboo corner braces prepainted with bitumen Nails & wire 6 pieces of 8' CI sheet Bamboo sticks prepainted with bitumen

- Activities**
- Participants build a sapra roof with the following innovations
 1. Corner braces
 2. Bamboo stick framing system
 3. Good wire ties
 4. All exposed bamboo painted with bitumen
 - Trainers give instructions where necessary but do not do any of the practical work
 - Participants discuss the completed roof

Week 5 - Activity 5**Discussion**

- Purpose** To assess the sapra roof frame
- Time** 15 minutes
- Materials** Flipcharts 5.5 a & b "Innovation discussion"
- Activities**
- Trainers conduct a brainstorming session in which each of the four innovations are evaluated in turn

এই ৪ পদ্ধতি সম্পর্কে কি চিন্তা করেন।

১। আলকাট্রা

২। বাতা পদ্ধতি

What do you think about these methods?

1/ Bitumen

2/ Bamboo stick method

*Snack Break***Week 5 - Activity 6****Lifecycle Costing**

- Purpose** To look at the 10 year cost of different roofing systems for a 9 hand x 6 hand house
- Time** 1 hour
- Materials** Flipcharts 5.6 a - c "Budget instructions"
Flipcharts 5.7 a - d "Budget report back"
Calculator

ছাদ তৈরীর মূল্য কত।

৪ টি দলে বিভক্ত করেন।

১ নং দল। ধানের কারির ছাদ

২ নং দল। কুসারের ডাডির ছাদ

৩ নং দল। ছাপড়া টিনের ছাদ

৪ নং দল। চারা টিনের ছাদ

Cost of roof construction

Make 4 Groups

Group 1/ Rice straw roof

Group 2/ Sugar cane cover roof

Group 3/ Sapra CI sheet roof

Group 4/ Pitched CI sheet roof

- Activities
- Participants break into subgroups based upon their roof material
E.g. Rice straw thatch
Sugar cane cover thatch
Sapra CI sheet
Pitched CI sheet
 - Subgroups write down the different elements of their chosen roof

কি জিনিস আপনার ছাদে আছে।

ধানের কাড়ি
কুসারের ঢাতি
বাসের ফ্রেম
কাঠের ফ্রেম
টিন
বাও চাল ধানের কাড়ি
বাও চাল বাসের ফ্রেম
চালি ধানের কাড়ি
চালি বাসের ফ্রেম

What parts does your roof have?

Rice straw
Sugar cane cover
Bamboo frame
Wooden frame
CI sheet
Side veranda rice straw
Side veranda bamboo frame
Veranda rice straw
Veranda bamboo frame

- Subgroups discuss and write down
 - the initial cost of the different elements of their roof (including labour)
 - how long they last before repairing is necessary
 - how much they cost to repair (including labour)

এখন চিন্তা করি এই ছাদ পদ্ধতির দাম কত
যদি ৯ হাত লম্বা ও ৬ হাত ঘর প্রশস্ত হয়।

প্রত্যেক অংশের বিষয় লিখবেন।

- যখন নতুন তখন জিনিসের দাম কত।
- যখন নতুন তখন মজুরী কত।
- কত বছর পর রিপেয়ারিং করতে লাগবে।
- রিপেয়ারিং সময় জিনিসের দাম কত।
- রিপেয়ারিং সময় মজুরী কত।

Now think how much this roof system would cost for a 9 hand by 6 hand house.

For each roof part write down

- The cost of materials when new
- The labour cost when new
- How many years later repairing is needed
- The cost of materials when repairing
- The labour cost when repairing

- Subgroups report back their costings to the main group
- Trainers calculate how much each roof will have cost after 10 years
- Participants discuss the results

ধানের কারির ছাদ

কোন অংশ	মজুরী
নতুন দাম কত	
কত বছর যাবে	
রিপেয়ারিং দাম কত	

১০ বছর পর কত দাম -

Rice straw roof

Which part	Labour
New cost	
Life (years)	
Repairing cost	

Total cost 10 years later

Notes for trainers

In order to create enough sub groups each with a literate secretary it may be necessary to move people around. Trainers should ensure that participants are fairly familiar with the roof system they are budgeting

The budgeting exercise may be unfamiliar. Trainers should help the subgroups where necessary.

When calculating the 10 year cost of each roof trainers should break down and explain the calculation as much as possible to the participants rather than just presenting them with a final answer.

Week 5 - Activity 8 Comments

Purpose	To evaluate participants views of this week
Time	10 minutes
Materials	Flipchart 5.8 "Your comments"
Activities	<ul style="list-style-type: none"> Trainers conduct a brainstorming session in which they ask the participants their comments on the workshop and write down everything that is said

আপনার মন্তব্য

Your Comments

Week 5 - Activity 9**Close**

Purpose	To close the workshop
Time	5 minutes
Materials	Flipchart 5.9 "Come next week"
Activities	<ul style="list-style-type: none"> Trainers remind participants of next weeks times Break for lunch

দয়া করে আগামী
সপ্তাহে আসবেন

পুরুষ	বুধবার ২১ মে
মহিলা	বৃহস্পতিবার ২২ মে

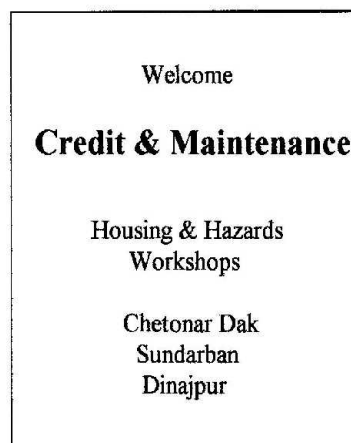
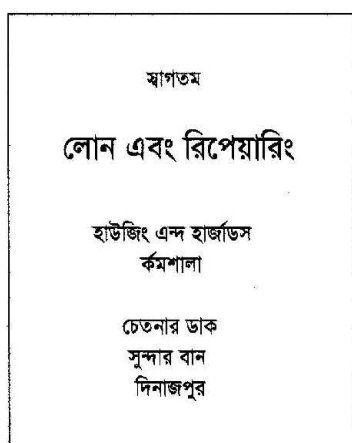
Please come again
next week

Men	Wednesday 21 st May
Women	Thursday 22 nd May

Week 6 CREDIT & MAINTENANCE

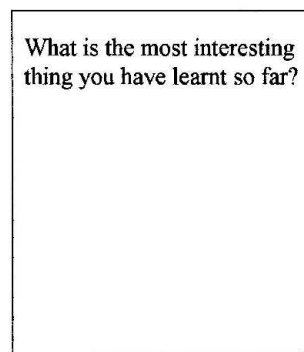
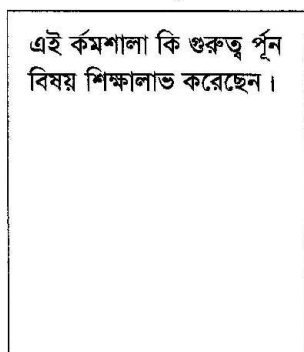
Week 6 - Activity 1 Welcome & Review

Purpose	To welcome the participants, review the activities of last weeks workshop and to introduce the theme of this weeks workshop	
Time	5 minutes	
Materials	Flipchart 6.1	"Credit & Maintenance welcome"
Activities	<ul style="list-style-type: none"> Trainers welcome the participants, review the Roof Construction workshop and introduce the themes of credit & maintenance 	



Week 6 - Activity 2 Warm up - Most Interesting Thing

Purpose	To review the workshops so far and to make the participants feel comfortable and relaxed.	
Time	5 minutes	
Materials	Flipchart 6.2	"Most Interesting Thing"
	Ball	
Activities	<ul style="list-style-type: none"> Trainers introduce and explain the exercise The participants stand up and throw the ball between them. When a participant has the ball he/she calls out the most interesting thing they have learnt so far and then sit down. Trainers discuss the most popular choices 	



Notes for trainers

It is important that participants understand that they can repeat what someone else has said if they agree otherwise the exercise becomes very difficult and slow.

Week 6 - Activity 3**Roof Budgeting Review**

Purpose	To review the results of the roof budgeting exercise from week 5 and use them to introduce the idea of credit. Also to see how self build can affect the relative costs of the rooves.	
Time	10 minutes	
Materials	Flipchart 6.3	"Self build survey"
	Flipchart 6.4	"Roof budget summary"
Activities	<ul style="list-style-type: none"> For each roofing system trainers take a survey of which participants do the work themselves and which participants hire labourers. The survey is taken separately for the initial construction and for the repairs. 	

আপনি কি এই কাজ করবেন অথবা
কামলা করবে।

	আপনি	কামলা
ধানের কারির ছাদ		
কুসারের চাড়ির ছাদ		
ছাপড়া টিনের ছাদ		
চারা টিনের ছাদ		

Do you do this work or do you
hire a labourer to do it?

	You	Labourer
Rice straw roof		
Sugar cane cover roof		
Sapra CI sheet roof		
Pitched CI sheet roof		

- Trainers review the 10 year roof budget results from the previous week and discuss the difference between the material costs and the total costs to see how self-build construction affects the result.

ছাদ খরচ

	জিনিসের মূল্য		সর্বমোট
	দাম	দাম	
ধানের কারি # বছর যাবে	###	###	###
কুসারের চাড়ি # বছর যাবে	###	###	###
ছাপড়া টিন # বছর যাবে	###	###	###
চারা টিন # বছর যাবে	###	###	###

Roof Budget

	Material Cost	Labour Cost	Total
Rice Straw Lasts # years	###	###	###
Sugar cane Lasts # years	###	###	###
Sapra CI sht Lasts # years	###	###	###
Pitched CI sht Lasts # years	###	###	###

- Trainers introduce the them of credit by looking at the sapra CI sheet roof system which tends to have a higher initial cost but a lower cost after 10 years due to less maintenance costs

Notes for Trainers

Trainers should be very clear about reminding the participants that they are discussing the total cost after 10 years and how they were calculated. This is very important if any participants missed week 5.

Week 6 - Activity 4 Credit Survey

Purpose	To survey the current use of credit by the participants
Time	30 minutes
	Flipchart 6.5 "Credit Survey"
	Calculator
Activities	<ul style="list-style-type: none"> • Trainers introduce the exercise • Trainers conduct a survey of the current use of credit by asking each participant <ol style="list-style-type: none"> 1. If they have taken a loan 2. If so who did they take their most recent loan from 3. For what purpose 4. How much was the loan 5. What are the weekly repayments

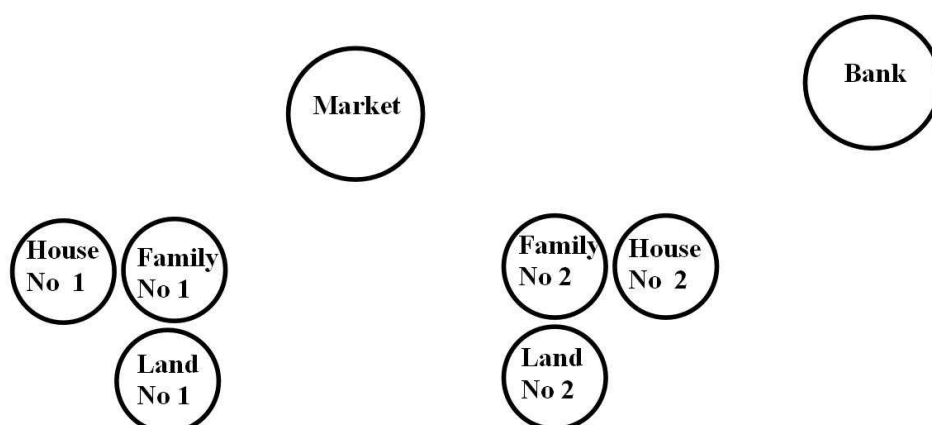
কে লোন গ্রহন করেছে।			
নাম	কে দিয়েছে	কি বিষয়ে	কত টাকা

Who has taken a loan?			
Name	Who from	Purpose	How much

Notes for trainers

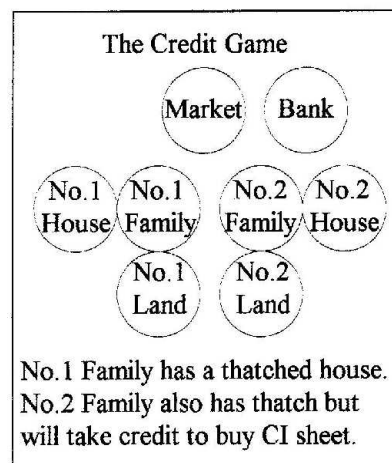
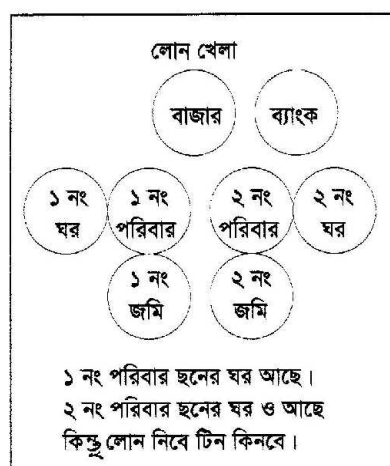
It is important to stress that the survey of credit taken for all purposes not just for housing. The participants may tend to answer the question of behalf of his/her immediate family rather than as an individual. This should be considered OK but trainers may like to make a note if this seems to be the case.

As a final evaluation of credit we will return to the survey flipchart sheet later on in the workshop

Week 6 - Activity 5**The Chetonar Dak Credit Game**

The Credit Game: Layout

Purpose	A fun way to focus attention on some of the issues behind credit
Time	20 minutes
Materials	Flipchart 6.6 "The Credit Game" Several dozen small stones Marked out playing area as shown on the previous page Flip chart 6.7 "What Next?"



Activities

- Trainers introduce the game which participants then play as follows
 - Participants occupy the various playing areas. Two participants may share an area to maximise the number of people taking part
 - Initially the bank has 5 stones and the rest are shared between the two areas of land
 - Each "year" the family takes two stones from their land and gives one to their house and one to the market. This represents the processes of farming, repairing the house and buying extra food.
 - This is repeated a few times. Trainers should make sure that all participants understand the game and what it represents before proceeding.
 - One year family #2 takes **five** stones from the bank and gives them all straight to their house. This represents taking a loan to buy CI sheet.
 - For the next **six** years family #2 takes two stones from their land as before but gives one stone to the bank and one stone to the market. Family #1 carries on as before
 - In subsequent years family #2 takes two stones from their land and only gives one to the market. They can keep the second stone. Over a few years their stock of stones accumulates whilst family #1 carries on as before.
 - Trainers explain what has happened. The game is stopped. Participants change places and the games is restarted as before.
 - The game continues as before except that during one of the years that the bank loan is being repaid (stage 6) there is a drought. The families can only take one stone from the land.
 - Trainers ask the families what they will do now.
- Trainers conduct a brainstorming session in which they ask the participants what each family could do during the drought situation and write down everything that is said.

এখন কি করেবন।
১ নং পরিবার।
২ নং পরিবার।

Now what will you do?
No.1 Family
No.2 Family

Week 6 - Activity 6 Credit Assessment

Purpose	To assess participants views on credit	
Time	20 minutes	
Materials	Flipchart 6.8	"Credit Assessment"
	(Flipchart 6.5	"Credit Survey")
Activities	<ul style="list-style-type: none"> Trainers conduct a brainstorming session in which they ask the participants their views on the good and bad points about credit writing down everything that is said. Trainers return to the Credit Survey flipchart sheet and ask each participant whether they think credit is good or bad Trainers compare the number of participants who think credit is good with the number of participants who have taken credit 	

লোন সম্পর্কে কি চিন্তা করেন

What do you think about credit?

Snack Break

Week 6 - Activity 7

Maintenance Key Points

Purpose	To look at the importance of maintenance	
Time	10 minutes	
Materials	Flipchart 6.9	"Maintenance"
Activities	<ul style="list-style-type: none"> Trainers discuss the key points of maintenance 1.Trainers introduce the idea of retro-fitting some of the methods discussed during the workshops 2.Trainers discuss the idea of an inspection routine to check whether the house is still strong 	

রিপেয়ারিং

ভাল রিপেয়ারিং শক্তিশালী ঘরের জন্য
গুরুত্ব পূর্ণ বিষয়।
যদি ভাল রিপেয়ারিং না করেন তাহলে
হা হা দুর্বল হয় এবং সহজেই ভেঙ্গে যায়
দুর্যোগ সময়।
ভাল রিপেয়ারিং টাকা বাছাতে পারে।
রিপেয়ারিং সময় ঘর শক্ত করিতে পারেন
আমরা যে পদ্ধতির কথা আলোচনা
করেছি এই পদ্ধতি ব্যবহার করলে।
প্রতি ব্যসর আপনার দেখার দরকার
যে ঘর শক্ত।

Maintenance

Good maintenance is important
for a strong house.
If you do not maintain your house
then it will become weak and will
be damaged by hazards.
Good maintenance can save money.
When you repair your house you
can make it stronger by using some
of the methods we have discussed.
Every year you need to check that
your house is still strong.

Week 6 - Activity 8

Inspection Routine

Purpose	To devise an inspection routine	
Time	40 minutes	
Materials	Flipchart 6.10	"Instructions"
	Flipchart 6.11	"Report Back"

দেখার দরকার

৪ টি দলে বিভক্ত করেন।

- ১। ছনের কোঠা ঘর।
- ২। ছাপড়া টিনের কোঠা ঘর।
- ৩। ছনের বাঁশের ঘর।
- ৪। ছাপড়া টিনের বাঁশের ঘর।

কি বিষয় দেখলেন যে আপনার ঘর
শক্তি শালী।

কোন ২ টি বিষয় বেশী গুরুত্ব পূর্ণ।

Inspection Routine

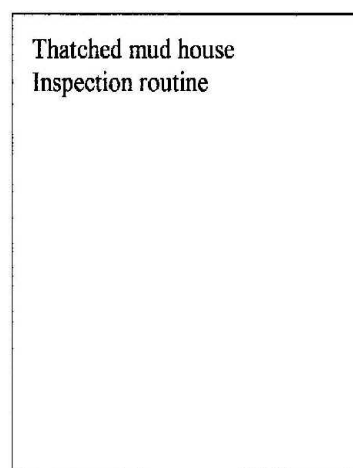
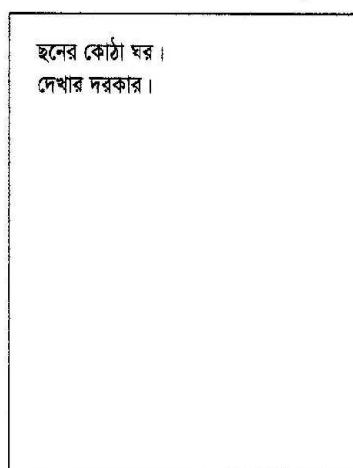
Make 4 groups

- 1/ Thatched mud house
- 2/ Sapra CI sheet mud house
- 3/ Thatched bamboo house
- 4/ Sapra CI sheet bamboo house

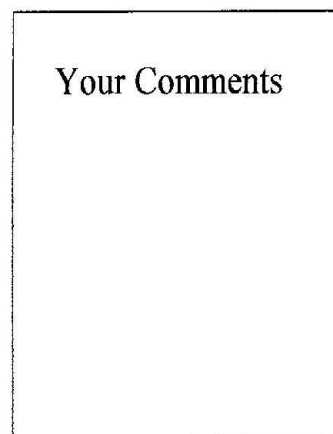
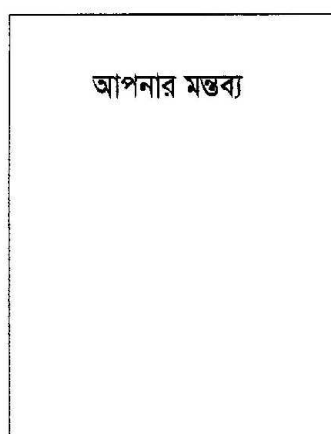
What things do you need to check
to make sure your house is strong?

Which two are the most important?

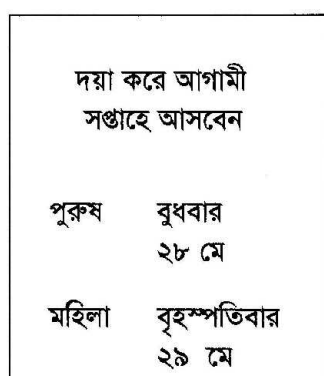
- Activities
- Participants break into subgroups based upon their house materials
E.g. Thatched & Mud Wall House
Sapra CI sheet and Mud Wall House
Thatched & Bamboo Framed House
Sapra CI Sheet and Bamboo Framed House
 - Sub groups discuss
 1. What things they should check as part of an inspection routine
 2. Of these which are the two most important
 3. How often the inspection should be done
 - Subgroups report back the results to the main group

**Week 6 - Activity 9****Comments**

Purpose	To evaluate participants views of this week	
Time	10 minutes	
Materials	Flipchart 6.12	"Your comments"
Activities	<ul style="list-style-type: none"> Trainers conduct a brainstorming session in which they ask the participants their comments on the workshop and write down everything that is said 	

**Week 6 - Activity 10****Close**

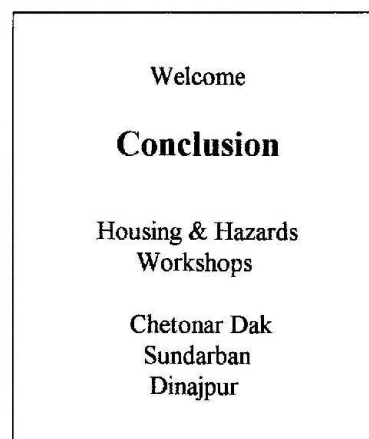
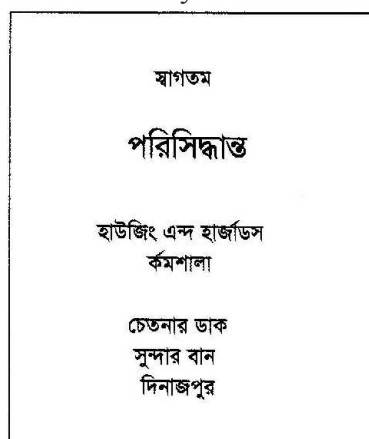
Purpose	To close the workshop	
Time	5 minutes	
Materials	Flipchart 6.13	"Come next week"
Activities	<ul style="list-style-type: none"> Trainers remind participants of next weeks times Break for lunch 	



Week 7 CONCLUSION

Week 7 - Activity 1 Welcome & Review

Purpose	To welcome the participants, review the activities of last weeks workshop and to introduce the theme of this weeks workshop	
Time	5 minutes	
Materials	Flipchart 7.1	"Conclusion welcome"
Activities	<ul style="list-style-type: none"> Trainers welcome the participants, review the Credit & Maintenance workshop and tell the participants that this will be the final workshop where we will try to summarise what we have done and make some conclusions 	



Week 7 - Activity 2 Warm Up - Review Mud Walls

Purpose	To see how the mud walls from week 3 compare after rain and also to make the participants feel comfortable and relaxed	
Time	25 minutes	
Materials	Flipchart 7.2	"Mud Wall Review"
	Mud walls constructed in week 3	
Activities	<ul style="list-style-type: none"> Trainers introduce the exercise Participants spend 10 minutes looking at the walls and discussing them Participants decide which are the two best and which are the two worst Trainers conduct a brainstorming session in which they ask the participants the reasons for their choices writing down everything that is said. 	

চল আমরা দেওয়াল দেখতে যাই। কোন দেওয়ালটি বৃষ্টিতে বেশী নষ্ট হয়েছে এবং কোনটি কম নষ্ট হয়েছে।	
সব চেয়ে বেশী নং - কেন	বেশী নং - কেন
সব চেয়ে কম নং - কেন	কম নং - কেন

Lets go and look at the mud walls. Which walls has the rain most damaged and which the least.	
Most damaged No. - Why	Most damaged No. - Why
Least damaged No. - Why	Least damaged No. - Why

Notes for trainers

If there has not been significant rain during the month since the walls were constructed then participants should test the water resistance of the walls (e.g. by pouring a set number of buckets of water over each)

Week 7 - Activity 3 Demonstration Building Assessment

Purpose	To look at and discuss the demonstration building in order to see how the various innovations of the workshop might fit together in one building. Also to discuss the budget of the building to find out the real costs of the innovations
Time	1 hour
Materials	Demonstration building Flipchart 7.3 "What innovations" Flipchart 7.4 "Building budget" Flipcharts 7.5 a & b "Innovation assessment" Flipchart 7.6 "Other innovations"
Activities	<ul style="list-style-type: none"> Trainers introduce the exercise

চল যাই দেখি চেতনার ডাকের নতুন ঘর।
ইহাতে কিস পদ্ধতি ব্যবহার করা আছে
আমরা আলোচনা করি।

কোন পদ্ধতি।

Lets go and see Chetonar Dak's
new house. It has used some of
the systems we have discussed.

Which systems?

- Participants go and look at the demonstration building and spend 15 minutes viewing it and discussing it. Relevant staff and builders should be available to answer questions

সাধারণ পদ্ধতি বাজেট ৮৭৬৫/=
বাঁশ - খুটি ৪২০ স্বর ১৬০ বাও চাল ১৫০
ছাদের উপরের ফেম ২৮৫
চাটি এবং টানা বাতা ১০০০
টিন ৪৭৮০ গমের কারি ৬০ দড়ি ৩০
দরজা ৭০০ মুজুরী ৭০০
পারবহন ভাড়া ৮৫ মাটি ভাড়া ৪০০
শক্ত পদ্ধতি বাজেট ৬৮৭/=
কোনা কুনি বাঁশ ১৫০ আলকাট্রা ৪০
কেরাশন ৭ গুনা ৬০ ইট ২৫০
মুজুরী ৭৫ পরিবহন ১০৫

Normal systems budget 8765 Tk
Bamboo - Posts 420 Beams 160
Verandahs 150 Roof frame 280
Walls 1000
CI sheet 4780 Wheat straw 60
Rope 30 Door 700 Labour 700
Transport 85 Mud carriage 400
Strong systems budget 687 Tk
Bracing bamboo 150 Bitumen 40
Kerosene 7 Wire 60 Bricks 250
Labour 75 Transport 105

- Participants return to the training area and trainers conduct a brainstorming session in which participants call out all the innovations they saw on the demonstration building

আলোচনা
ইট ৩৩০ /= (ইট ২৫০ পরিবহন ৮০)
কোনা কান বাশ ১৭০ /= (বাঁশ ১৫০ পরিবহন ২০)

Discussion
Bricks 330 Tk (Bricks 250 Transport 80)
Bracing 170 Tk (Bamboo 150 Transport 20)

আলোচনা
আলকট্রা ১২৭ /= (আলকট্রা ৮০ মুজুরী ৭৫ পরিবহন ৫ কেরশিন ৭)
গুনা ৬০ /=
বাতা পদ্ধতি ---

Discussion
Bitumen 127 Tk (Bitumen 80 Labour 75 Transport 5 Kerosene 7)
Wire 60 Tk
Bamboo stick method ---

- Trainers discuss the budget of the building. The budget should show how much each item cost and separate totals for
 - 1.All the regular costs for a building of that type and size
 - 2.All the extra costs to add the innovations
 - 3.The grand total (1.+2.)
- For each innovative system participants discuss the good and bad points. The systems will be individually costed and trainers should encourage participants to consider the value for money of the system
- Participants suggest one or two other ideas that could be used as well or instead. Trainers lead a group budgeting session where the full cost of these systems is estimated. Participants consider whether they would be good value for money or not.

আর কোন পদ্ধতি আমরা ব্যবহার করব।
কত দাম হইবে।

What other systems could we use?
How much would they cost?

-Snack Break-

Week 7 - Activity 4

Workshops Summary

Purpose	To review the whole course of workshops and to see how they matched up with the expectations of the participants and the objectives of the trainers		
Time	20 minutes		
Materials	Flipchart 7.7 (Flipchart 1.3 (Flipchart 1.4	""Workshop Summary" "Expectations") "Objectives")	
Activities	<ul style="list-style-type: none">•Trainers go through the workshops week by week asking participants what the main activities of each week were•Each participant is asked which his / her favourite week was. Trainers count the results to find out the most popular week•The "Expectations" and "Objectives" flipcharts from week 1 are reviewed and trainers and participants discuss whether the workshops matched up with the		

কর্মশালার বিষয়বস্তু

সব চেয়ে ভাল

- ১। স্বাগতম
- ২। দুর্যোগ
- ৩। কোঠা ঘরের কাজ
- ৪। বাঁশের ঘরের কাজ
- ৫। ছাদ তৈরীর কাজ
- ৬। লোন এবং রিপেয়ারিং
- ৭। পরিসিদ্ধান্ত

Workshops Summary

Best week

- 1/ Welcome
- 2/ Hazards
- 3/ Building with Mud
- 4/ Building with Bamboo
- 5/ Roof Construction
- 6/ Credit & Maintenance
- 7/ Conclusion

comments.

Week 7 - Activity 5**Future Plans**

Purpose	To discuss a framework for future activity 40
Time	minutes
Materials	Flipchart 7.8 "Discussion summary" Flipcharts 7.9 a - d "Discussion key points"
Activities	<ul style="list-style-type: none"> Trainers briefly go through the "Discussion Summary" flipchart sheet telling participants the four points that they will discuss <ol style="list-style-type: none"> Which of the ideas from the workshops will you use How can you help each other as a group How can Chetonar Dak help you What shall we do next Trainers lead a group discussion session where each of these points are discussed in turn and decisions made by the participants and representatives of Chetonar Dak are recorded

ভবিষ্য পরিকল্পনা

কোন ধারণা আপনি ব্যবহার করবেন।

কি ভাবে আপনি একে অপরকে
সাহায্য করিতে পারেন।

কি ভাবে চেতনার ডাক সাহায্য
করিতে পারে।

এখন আমরা কি করব।

Future Plans

Which ideas will you use?

How can you help each other?

How can Chetonar Dak help you?

What shall we do now?

Notes for Trainers

This is a very important session as it may be crucial in determining the level of implementation of the ideas explored in the workshops

(Point 1) Try to get participants to say which of the ideas they felt most appropriate / useful rather than them saying they will use all of them.

**কোন ধারণা আপনি
ব্যবহার করবেন।**

**Which ideas will
you use?**

(Point 2) Ensure that participants realize they are discussing how they can help each other not how they can help other non-participants

(Point 3) Representatives from Chetonar Dak must be present so that any recorded decisions are viable and will be fulfilled. These representatives should have prior ideas about the kind of help that is possible and appropriate

(Point 4) A firm decision on the next thing to be done is vital even if this is only deciding on the date of a future meeting

Week 7 - Activity 6

Final Comments

Purpose	To evaluate participants views of the workshop course	
Time	10 minutes	
Materials	Flipchart 7.10	"Your comments"
Activities	<ul style="list-style-type: none"> Trainers conduct a brainstorming session in which they ask the participants their comments on the whole course of workshops and write down all that is said 	

আপনার মন্তব্য

Your Comments