MUTUAL AID: HOUSE CONSTRUCTION THROUGH BUILDING GROUPS

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HOUSE CONSTRUCTION THROUGH BUILDING GROUPS

TRAINING MODULE

United Nations Centre for
Human Settlements (Habitat)

Nairobi, Kenya

1986

This training module was prepared with the assistance of S.Angel.

HS/98/86/E

ISBN 92-1-131017-2

GUIDELINES FOR THE INSTRUCTOR

This training module is planned for a minimum of three days of instruction and group exercises focusing on mutual-aid housing (i.e., the construction of houses by groups of individuals agreeing to assist each other in building their houses) and building groups. The module does not assume any familiarity with the subject and assumes only basic knowledge of urban low-income housing projects.

Target group	: Project staff of sites-and-services schemes and squatter-settlement upgrading projects.
Number of participants	: 10 - 20 persons.
Duration	: 3 - 5 days.
Equipment and venue	: The lecture room should be equipped with a blackboard and a film projector. For the exercises, an additional room with a blackboard or a flipchart is required.
Relevant film	: Building Together: Issues in Mutual-Aid Housing (30 minutes; available from UNCHS).

The purpose of the training is :

- to discuss the possibilities and limitations of mutual-aid housing in the low-income projects in which the trainees are or will be working;
- to develop methods and techniques for the organization of mutual-aid groups in low-income housing projects;
- to identify the specific requirements of building groups, with regard to project support and assistance, internal organization, project layout, house design and technology.

During the training sessions, the following learning methods will be used:

- lectures
- discussions
- presentation of case material
- exercises
- audiovisual presentations

This module presents the material on which the lectures on mutual-aid housing and building groups are to be based. The instructor may add material, delete parts which are deemed irrelevant in the current training context and modify the text to suit the needs of the trainees.

During the lectures, the instructor explains and discusses with the trainees the various issues related to the organization of a mutual-aid project and the functioning of building groups in such projects. The instructor should stimulate the trainees to take part in the discussions and should direct questions to those who do not participate.

The lectures should be interspersed with as many case studies and group exercises as time allows. The showing of the film entitled "Building Together: Issues in Mutual-Aid Housing" is recommended as one of the case studies. It should be followed by a discussion on the project. The topic of the second case study can be chosen by the instructor depending on the case material available.

This training module is supplemented by a series of exercises. They consist of trainer's notes and participants' handouts. The trainer's notes contain information on the objective of the exercise, the time and the material needed, the learning method and a session guide.

To make the system flexible, the exercises are presented in the form of loose leaflets. This allows the instructor to select those exercises which are appropriate for the trainees and the course duration, to change the order of the exercises, to adapt the exercises to the specific needs of the trainees and to make photocopies of the handouts.

If the exercises do not meet the needs of the trainees, the instructor can develop new ones. It is recommended that the exercises aim at developing an organization for mutual-aid construction in the project(s) in which the trainees are working. They could focus on the following issues:

- Is there a need to introduce mutual-aid groups in the low-income housing projects and what form should such mutual-aid take ?

- What project organization is required to make the construction of houses through building groups efficient and effective ?

- How should building groups be internally organized and how can the project assist and support the building groups?

- How can the time people have available for house construction though mutual aid be organized most efficiently?

- Which project layout, house design and technology are most suitable for mutual-aid house construction?

- How can the project make sure that mutual-aid housing remains affordable for low-income groups?

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I. MUTUAL-AID HOUSING

In low-income housing projects, houses can be constructed in four different ways:

1. Through individual self-help (each family builds its own house);

2. Through a contractor (a family, a group of families or the project management hires a building contractor to construct the house(s));

3. Through mutual aid (a group of families builds houses together);

4. Through a combination of the above.

The objective of this training module is to assist staff of sites-and-services, squatter-settlement upgrading and slum-improvement projects to answer the following two questions:

1. Should use be made of some form of mutual aid in house construction in the project?

2. What is the best way to organize mutual aid in the project ?

These questions cannot be answered in general, but only with reference to a particular project in a specific place and at a given time. Each chapter in this module presents, therefore, a set of issues related to mutual aid, usually in the form of questions. The purpose of the training sessions is to discuss these issues and to develop methods for mutual aid in the project concerned.

In what follows, both the terms "building groups" and "mutual-aid housing" will be used. The first term refers to a group of people who agree to assist one another in the construction of their houses. The second term refers to the process of building houses in groups. Building groups and individual families constructing their own houses are forms of "self-help" housing.

Why do people promote the idea of housing through mutual-aid groups?

There are basically three reasons why mutual-aid housing is promoted:

(1) Meeting technical requirements:

Usually, mutual-aid housing is considered cheaper than contractor-built housing or houses built through individual self-help. Mutual aid may be required as a form of downpayment (labour instead of cash) to allow poor families to participate. These families would be unable to afford the house if a downpayment in cash were required.

Authorities often fear that individual self-help will create new slums. They, therefore, tend to limit self-help to mutual-aid construction of common house designs, to make sure that the houses are built to a common standard.

Shortages of building materials and difficulties in procurement and storage may require the securing of materials in groups. A house design which requires common walls may, in turn, require a common floor plan, foundation and roof for an entire row of houses. This forces self-builders into some form of mutual aid. A building technology which is too complex for individual self-help may have a similar effect.

(2) Creating a co-operative spirit:

For some, the value of mutual aid lies in the working together of group and not in the material result - the house. By working together to a common goal, the participants develop a sense of belonging together.

Many projects demonstrate that mutual aid continues long after the groups have completed the work on their houses. More than half of the families in the World-Bank-funded projects organized by the Foundation for Development and Minimum Housing in El Salvador (FSDVM or FUNDASAL) continued to work together improving and completing the houses over time.

In other projects, people lend money to their neighbours, help one another guard the house or the children, assist during emergencies, share food and experience a common sense of security and confidence.

(3) Organizing the poor to gain control over decisions that affect their lives:

Some people see mutual aid as a stepping-stone to community development and to people's participation in other fields of life. It is an opportunity for

people to learn to organize themselves, to generate solidarity, to pursue common objectives and to create local leadership.

In the FUNDASAL projects in El Salvador, some communities developed into powerful organizations which collect monthly payments and have influenced the government and private agencies to install or maintain services, such as lighting or water-supply.

This experience is, however, not universal. In some cases, community groups have continued to function but only for certain activities. In others, strong ties developed internally, but the groups adopted a rather 'combative' style toward other groups in the project.

Most low-income families see a house as their primary objective. They apply for a plot in a mutual-aid housing project because they need a house and because they find the arrangement satisfactory. They may be ready to do whatever is necessary to acquire a house, without any real intention of continuing to participate in community activities after their houses are completed.

Does mutual aid guarantee community control over the project?

The decision to construct houses in groups does not imply that the group has any control over the construction and improvement of the houses. Participation as a group will only give families control over the housing process if the group is well organized. The group has to be able to express the needs and priorities of its members, and to have a say in the organization of the project.

However, groups are sometimes merely organized to provide unskilled labour for others to manage and control. In such cases, there will be less participation than if individual families build their houses themselves, without being controlled by others.

Two issues are important:
- Who organizes the building groups?
- When are the building groups organized?

The more the initiative for the organization of building groups comes from the group members themselves, the better the groups will function and the more they will be inclined to manage their own affairs.

Uruguay

In projects of the National Federation of Co-operatives in Uruguay, groups organize themselves as housing co-operatives. They take decisions on land purchase, recruitment of technical personnel, choice of house design and building technology, arrangement of loans, financial administration, supervision of contracts and financial management.

El Salvador

In FUNDASAL projects, the staff selects the group members and organizes them into building groups. The responsibility of the group is restricted to the management of house construction only, the co-ordination of the common work, the agreements among the group members and the enforcement of these agreements.

The other important issue is the timing of the creation of groups. The earlier in the housing process the groups are organized, the more meaningfully they can contribute to decision-making. If building groups are organized before the main decisions about the project are taken, they can actively participate in the design of the project.

Bogum Jahri

In the Bogum Jahri project in the Republic of Korea, a community evicted from an inner-city slum was resettled as a group. The group took many key decisions affecting the project. There was ample opportunity for effective participation, leading to a successful completion of a difficult construction task in record time.

In many projects, families are recruited after the basic decisions have been taken. They usually enter the project as individual families, rather than as groups, and are organized into groups by project personnel. This can result in ineffective participation and a rather passive role on the part of the groups, at least in the initial stages of construction.

Participation in decision-making improves as groups become cohesive and confident and can express their needs and demands as well as their strategies for achieving their common goals.

Can mutual aid be combined with individual self-help?

House construction consists of a number of well-defined tasks which may be performed by mutual aid or by individual self-help, with or without assistance of skilled labourers. Mutual-aid work can take place before individual self-help, during individual house construction or after individuals have completed their basic units.

(1) Before individual self-help:

If it occurs before individual self-help, mutual aid usually focuses on the completion of a basic house unit which the individual family can expand and improve afterwards. Plots can be allocated in advance to families who construct the houses as a group, in an agreed order. In this arrangement, all participants are trusted to continue to contribute to the common task even after their own houses have been completed.

It is also possible to allocate the plots after the houses have been completed. Families are organized to work together until they have finished all the agreed tasks, and the completed units are then allocated to the group members by lottery. In this arrangement, all members work on all the houses without knowing in advance which house will be theirs.

(2) During individual self-help:

Mutual aid can also be practised during individual self-help construction. In such cases, families co-operate only when specific building tasks (such as the pouring of roof slabs) require large numbers of people. Mutual aid may also be introduced to make sure that tasks are completed by all the families in the group at the same time.

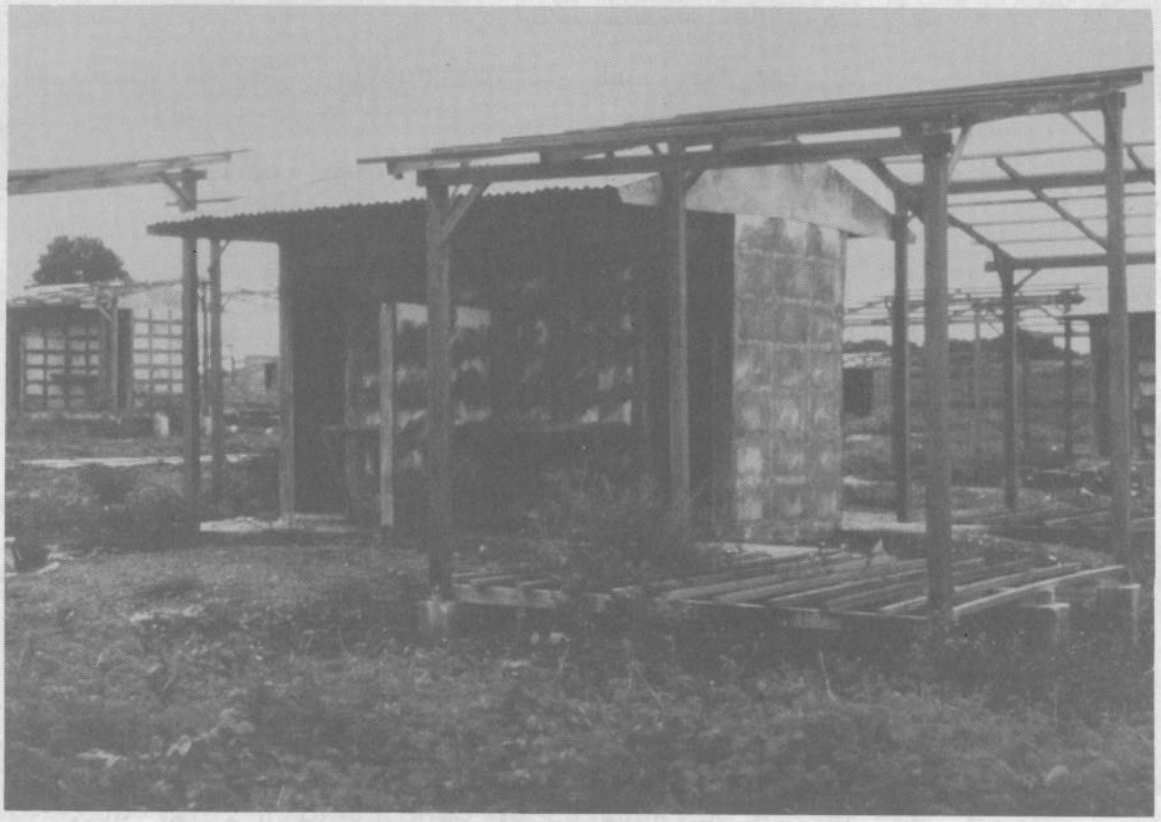
In the Mexicali project in Mexico, the agreement among the co-operating families contained the following:

1. People work together at specific times of the day;
2. Each family has to contribute at least some physical labour;
3. A specific task is completed every day;
4. People help each other in the most arduous operations;
5. There is a celebration at the end of every operation.

(3) After individual self-help:

Mutual aid can also take place after the individual families have completed the houses, as in the Freedom to Build Project in the Philippines. Groups of families can help one another improve their houses over an extended period of time, by forming a credit society. Each family in the group saves an agreed amount of money each week. , and the money is pooled and allocated to one of the families which uses it to buy building materials. Members of the group assist the family, usually over the weekend, to improve its house.

Mutual-aid work can thus be combined with individual self-help in any phase of the construction process, depending on the specific tasks at hand and on the mode people choose to co-operate in.



Houses under construction in the Freedom to Build Project in Dasmarinas, the Philippines.

What is needed to make mutual-aid housing successful?

The projects presented in this training module show that building groups and mutual-aid housing can be an efficient and effective form of house construction for low-income groups. However, mutual-aid housing can only be successful if certain conditions are met. Two types of conditions can be distinguished:

1. Conditions external to the building group: they create an environment which is favourable for the construction of houses by building groups.

2. Conditions internal to the building group: they ensure that the building group can function optimally as a group.

The following chapters will discuss these conditions in detail, but they are summarized below:

(1) External conditions:

- Access to land, infrastructure and services at affordable costs;

- Access to affordable long-term loans;

- Rules, regulations and standards which, on the one hand, do not obstruct self-help construction but, on the other hand, ensure that the groups work efficiently without wasting time and money;

- Provision of training in construction skills, management skills and group work;

- Availability of community-development staff and technical staff to support the group activities;

- A project layout which encourages the formation of neighbourhood communities;

- A house design which encourages the construction of houses in groups;

- A construction technology which makes maximum use of the advantages of construction in groups.

(2) Internal conditions:

- A strong group spirit, so that the group members are prepared to work for one another and assist one another, even in difficult times;

- Respected leaders who, without taking advantage of their position, can resolve conflicts and encourage group members to work together.;

- Some group members with management and construction skills, so that the group needs only a minimum of outside assistance;

- Sufficient time to work on the construction of the houses, not only individually but also as a group;

- A group size which promotes the creation of cohesive groups, without increasing the demand for project-support staff.

II. ORGANIZING MUTUAL-AID HOUSING

The success of building groups depends, to a very large extent, on the way the project is organized. When mutual aid is properly organized, building groups can create houses more efficiently and more effectively than any other form of production.

Mutual aid, however, requires an organization which is quite different from a project carried out by a contractor and from a project with individual self-help construction. Unfamiliarity with the requirements of mutual aid can lead to serious problems during the implementation of the project. It may even create resistance to mutual aid.

Three tasks are particularly important to create favourable conditions for mutual-aid house construction:

1. Obstacles have to be removed to enable families to construct their houses together;
2. The building groups need various forms of support and assistance to carry out their tasks efficiently;
3. There is a need for some form of control to make sure that the group works according to the rules it has agreed upon and to the standards set by the project.

What needs to be done to enable families to construct their houses through building groups involved in mutual-aid housing?

It is essential that obstacles which make it difficult or impossible for building groups to produce houses for themselves be removed. This can usually only be done as a result of policy decisions at the national and international levels. Enabling roles are, therefore, played by national or international organizations.

Self-help housing can take place only if land tenure is sufficiently secure to merit the investment of savings in housing without the risk of eviction. Access to land is one of the prime conditions for self-help housing. Efforts to secure land tenure, either in existing or in new settlements, are therefore key activities to make mutual-aid housing possible.

Other key requirements for effective self-help and mutual aid are:

1. The provision of basic infrastructure;
2. The removal of constraints to self-help construction, such as inappropriate building codes and standards;
3. Access to affordable long-term loans with realistic requirements for guarantees and with low initial downpayments.

National housing agencies play an enabling role when they provide serviced sites and long-term loans and when they relax building regulations in low-income housing projects.

Regardless of how effective enabling organizations are, people are likely to find it difficult to work within the remaining constraints. They may lack the skills to carry out construction tasks or they may have problems working together in groups. To overcome these constraints, people need support.

What support do building groups need in mutual-aid housing?

The support that building groups need in mutual-aid housing takes many forms. It is, however, generally limited to organizational and managerial support on the one hand and technical support on the other.

The supportive role is best performed by individuals and organizations that put their own interests and obligations aside and freely and openly side with the people. They may live in the settlement all the time, so that they immerse themselves in the life of the community in order to understand its needs and priorities.

An important task of community organizers is to help a group enter a project and continue its activities after it has completed the houses. The social promoters of FUNDASAL spend considerable time organizing building groups into an effective community organization. The organization continues to develop and maintain the area and to represent the community when dealing with outside agencies.

The project usually provides technical support, if the construction technology is new to the people or if building skills are in short supply. Support may take the form of training, both before and during construction, and of assistance in building.

Such assistance is best provided by a foreman assigned to one or more groups. The foreman should be distinguished from a building supervisor who has a regulatory rather than a supportive role.

The support role should be clearly separated from any regulatory functions. Community organizers play the supportive roles and advocate the people's cause. They are largely involved in encouraging people to take initiatives, to develop and test new ideas, to prepare celebrations, to overcome obstacles, to work against difficult odds and to accomplish goals which seem impossible to attain.

Government planners and engineers play a regulatory role and are largely involved in acts of restraint and limitation. They represent the municipality, enforce rules and regulations, and insist on codes and standards.

What can be done to make building groups work efficiently?

People must be economical in the use of materials and careful about tools. They must avoid unnecessary expenditures and feel responsible for promises they have made to make payments on time. They must adhere to an agreed work schedule and maintain quality in construction. Slacking members, who fail to meet their obligations, must be disciplined or expelled. Accidents during construction must be avoided, and conflicts must be settled properly and correctly.

In projects involving building groups, regulatory tasks do not always come naturally. Group members may be reluctant to restrain their fellow workers, while leaders may lack the necessary authority. Support staff may prefer to refrain from taking on roles which place them in conflict with the people. Yet, regulatory roles are essential for the group to achieve its goal. Otherwise, mutual aid will result in material waste, delays, arguments, lack of work discipline and a bad quality of construction.

Building Together

The initiators of the Building Together Project in Thailand were committed to supporting the people in building their houses and sharing in decision-making. They refused to take on a patron's role, although the people expected them to do so. The site manager, given strict supervisory responsibilities,

preferred to socialize with the people and join them in spending money, but this put the project near bankruptcy and led to his dismissal.

Building groups elected their own leaders, but, as they were not used to being led by members from among themselves, they proceeded to undermine their authority. When the Housing Bank had to collect mortgage payments, many families refused to pay. This resulted in a serious rate of default in repaying loans.

The project staff adopted the attitude that non-payment of the loans was not its problem. It chose to ignore the reluctance of the Bank to grant additional loans for low-income housing in the future.

So, supportive and regulatory functions exist at all levels of mutual-aid housing. They must balance one another to avoid situations becoming too anarchistic or too oppressive.

What form of assistance do building groups need?

The aim of mutual aid must be to maximize the contribution of the people to the housing process. By utilizing the resources available in the group, housing costs can be reduced. Also, group members will gain confidence in their own capacities. Mutual aid will make them reliant on themselves.

Mutual aid should rely as much as possible on the technical and organizational skills of the people. Forms of organization and construction techniques which go beyond the experience of the people and, therefore, require frequent and intensive assistance, intervention and training should be avoided.

The people should be not only self-builders but also managers and organizers of as many activities as possible. However, maximizing the people's contribution must be done within certain limits. The project staff must take into account the time which people have available to work and their willingness to spend that time on constructing their houses.

At the group level, there is usually a need for two (part-time) assistants - a group organizer and a construction foreman whose roles must be supportive and educational. They are to help the people to accomplish their tasks, solve problems, instil

confidence and promote a co-operative atmosphere. They must also assist the group in its dealings with project management and outside organizations. The group may assume the responsibility of managing construction by itself. It then needs the professional services of an architect and an engineer to assist in the design of the site layout, of the infrastructure and of the house.

Most important is the appointment of a manager to work on a full-time basis in the project. This is essential, if group members only have limited time, skills and experience for project management. It is best for the project manager to be appointed from the group itself, if such a person is available in the group.

Do members of building groups need training?

The more experienced the organization, the less preparatory work is necessary before the start of actual construction work. However, building groups usually require some training. The types of training needed are:

1. Training in construction skills;
2. Training in group work;
3. Training in management and administrative skills (usually for selected members only).

Most training in construction skills takes place during the entire construction period and ends only when the houses are finished. For the majority of participants it is on-the-job training. Each building task requires practice, and enough practice can only be given on the job, as most participants are involved in construction for the first time in their lives.

Some of this training can be done before moving on to the building site, in a separate building yard. Members of later groups can also observe or join members of earlier groups, learning new tasks in the process. Foremen working with the building groups are often the best trainers.

El Salvador

In FUNDASAL projects, members of a building group meet each other for the first time on the building site. The staff introduces them to one another and explains their responsibilities. The work starts immediately. Further meetings are alternated with work on the site.

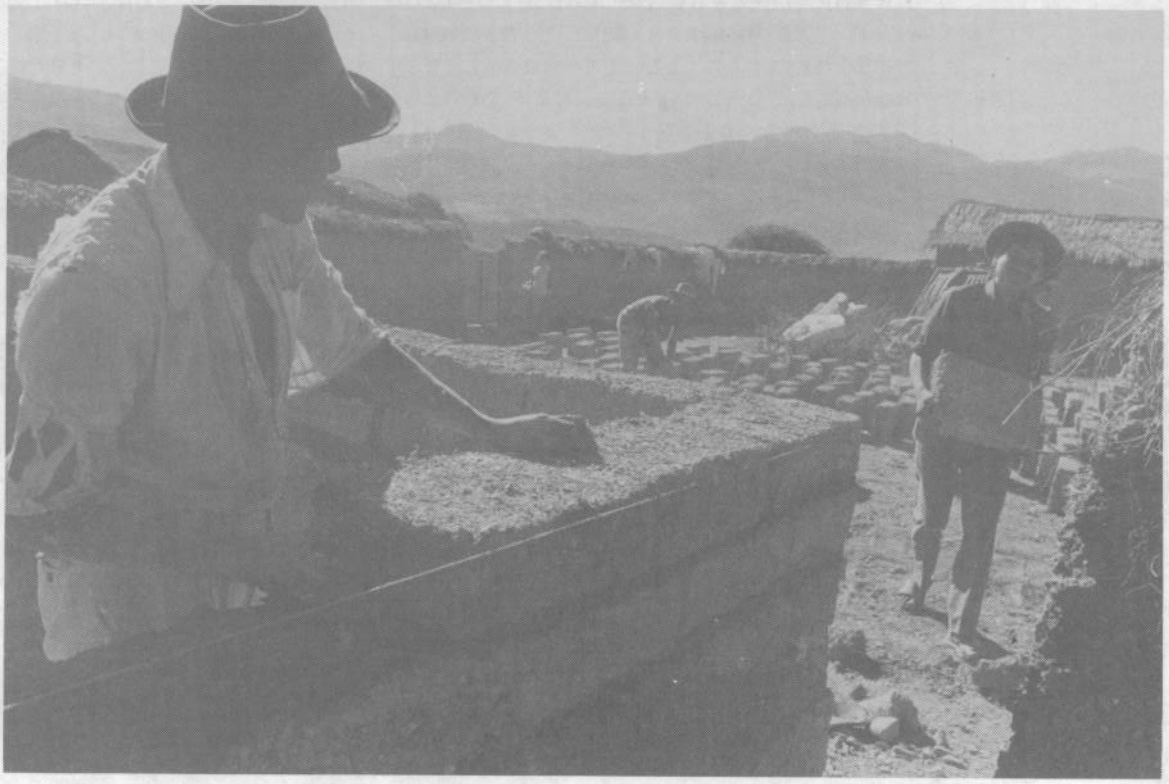
Senegal

In Dakar, Senegal, participants are sent to a formal training school and trained for several months in building techniques.

There is also a need to explain to participants what they can expect from the project. They need time to get to know one another and to learn to trust one another. They must gain confidence that the tasks ahead can be accomplished. The project staff has to teach the group meeting procedures and their duties and responsibilities as group members. Agreements among members of the group and between the group and other levels of the organization have to be formulated.

There may also be value in training selected members of the group in specific skills, such as accounting and record-keeping, using forms developed for these purposes. This is particularly important, if group members have to save together over a long period of time before, during and after construction.

Good training requires good trainers who may be in short supply. It also requires considerable time. This detracts from the time available for construction which is often limited. It is, therefore, necessary to make training and orientation sessions efficient and purposeful, taking as little time as possible to achieve the desired objectives.



(photo : Sean Sprague)

III. ORGANIZING BUILDING GROUPS

Besides the organizational framework for mutual-aid housing, the internal structure of building groups is very important. This chapter focuses on the formation of building groups and the recruitment, responsibilities and legal status of house builders.

How are building groups formed?

Participants in a mutual-aid building group may come together in a variety of ways. They may:

1. Be self-selected;
2. Be selected by project staff;
3. Already exist as a group.

Self-selection means that a group of acquaintances, friends or members of an organization decides to form a building group. In some projects, however, the staff members of the project select the applicants. They introduce them to one another and organize them into a building group. If the group already exists, there is no question of selection; all community members automatically become members of the building group.

Self-selected groups are usually the most cohesive, group decisions are more democratic, and the quality of the group work is highest. However, project authorities often formulate admission criteria for mutual-aid projects to make sure that the project reaches the target group. Because, in self-selected groups, not all group members may meet these criteria, project authorities sometimes discourage self-selection.

A large group of people can also decide to divide into small groups to build houses together. In such cases, community organizers sometimes have to to make sure that all families become members of a group so that no family is left on its own.

What kind of people are best suited for building groups?

It is important to have a mix of people in a building group. A group can consist of a majority of people who cannot build a house by themselves

and a minority of skilled and experienced people. The latter can provide leadership and give technical and organizational guidance to the group.

A group which has organizational skills but lacks technical know-how can easily hire a foreman or attend some technical training. However, it is difficult to teach a group organizational skills or to teach leadership to people without inherent leadership qualities. If there is a choice between people who can work together but have no technical skills and people who have technical skills but cannot work together, the former should be preferred.

Cohesive groups function better than loose associations of individuals. The more members can trust one another and share common goals and common habits, the easier it is for them to co-operate and to co-ordinate their efforts. Mutual-aid projects are therefore most successful, if families already know one another before they initiate or implement the project.

Building groups work best if they consist of co-operative people with good and reliable working habits and a friendly nature. Quarrelsome, offensive or unreliable people usually do not make good team members. Other qualities, such as patience, generosity and a good sense of humour are helpful for group work as well.

Most building groups work best if they have good leaders. These are people, with experience in resolving conflicts and a balanced judgment, who can exercise authority without taking advantage of their position. Such leaders are even more effective if they have construction skills.

Acquaintances can easily identify good leaders. For project personnel, it is almost impossible to find such people through interviews with individual heads of households, although many tests have been devised to discover leaders. One method is to ask people to perform group tasks; observers follow the group activity closely, trying to detect who ends up leading the group.

Because of the difficulty of identifying leaders in advance, there is a great advantage in groups selecting for themselves. In some projects, the final selection of participants is postponed until after a prolonged training period. During that period, the project staff can thoroughly observe the human qualities of the group members.

Building Together

In the Building Together Project, attempts to identify leaders before the start of the construction work proved futile. It was found that leaders who spent most time on the construction in both clusters tended to be unlikely to take a role in group meetings. In contrast, those who were most talkative and sociable in initial meetings often appeared to be the least diligent and helpful in the actual construction process.

Mutual-aid projects are usually intended for specific income groups. Project authorities, therefore, often place income limits on participation. Yet, there are good arguments for including people with high incomes, particularly if they can provide needed management and building skills. In the long run, it is unlikely to make a significant difference for the income distribution in the community, since high-income families will, in any case, replace some of the original families through the resale of houses.

The most important selection criteria for building-group participants are:

1. The availability of time;
2. The number of family members willing and able to work in construction; and
3. Amount of time that they can afford to put in on a regular basis.

The project should study, in detail, the time the participating families have available: people tend to overestimate the amount of free time they have. It is also important to find out when people have time available. Their contributions may not only be needed during evenings and weekends: they may also have to work during daytime to complete the construction within the planned period of time.

It may, sometimes, be advantageous to recruit people who live near the project area or are willing to move temporarily to the project site to save time for construction.

What are the duties and responsibilities of building-group members?

Participation in house construction is like a game which must be played according to agreed rules. The clearer and more practical the rules, the more easily the game is played. There is, therefore, a

need for a well-conceived set of rules which all participants clearly understand and accept at the outset.

In house construction, substantial amounts of money and property are involved, and this can lead to serious conflicts. Since the rules can and, occasionally, will be challenged in a court of law, they must have a legal basis. In such cases, consultation with a lawyer in the drafting of the agreement can prove invaluable.

If co-operation among group members is entirely voluntary, all mutual aid is informal, and all duties and obligations rest with the individual family as a legal entity. If people agree to co-operate formally, their co-operation also must have a legal basis. They must be registered as societies, associations or co-operatives.

There are two types of agreements:

1. Organizational agreements;
2. Financial agreements.

Organizational agreements cover four separate areas:

1. The application for membership;
2. The byelaws of the group;
3. The work agreement;
4. The neighbourhood organization

(1) Application:

The application is a request to join the building group. It is accompanied by an agreement on the part of the applicant to provide information about income and time availability, and to co-operate in any selection process required for group membership.

(2) Byelaws:

The byelaws of the group are like the byelaws of any organization. They detail limitations on membership, dues required and disciplinary measures to be taken against members who do not pay the dues. They specify the procedures for electing officers, usually in an annual general meeting, and any other requirements for attendance.

The byelaws also describe the obligations of the various officers of the group (chairperson, vice-chairperson, treasurer, secretary etc.). They may

call for the establishment of an executive committee and subcommittees. They specify procedures governing the conduct of meetings, and they establish rules for expelling members from the group and for the dissolution of the group upon completion of its task.

(3) Work agreement:

The work agreement specifies the conditions governing work on the site. It details when people should commence work, how much work each family should contribute, and what happens if more work is required than was estimated. If group members agree to co-operate on certain building tasks, the agreement specifies how to record their contributions. If the hours worked on a task are measured, the agreement should include procedures for timekeeping.

In addition, the group must decide what happens if people do not contribute the agreed hours. They may or may not be allowed to substitute money for hired labour. The group members must agree on the monetary value of work and on the minimum amount of work required by heads of households.

The work agreement can specify a commitment to attend regular group meetings and to work at specific times. It establishes how the work of the group is distributed over the various plots and how the completed houses are allocated. Incentives encouraging members to contribute more to the group work could be mentioned. Finally, the work agreement should contain procedures for conflict resolution and for the expulsion of members who do not perform satisfactorily.

(4) Neighbourhood organization:

The agreement to join a neighbourhood organization lists the duties and obligations of houseowners after they have completed construction of their houses. It describes their commitments to pay monthly charges for infrastructure and services, such as refuse collection, street lighting and the repair of community property.

It may specify a commitment to participate in community meetings, elections and projects, and to pay membership dues. Means to enforce compliance in case of default, such as curtailment of the water supply or any other punitive measures, need to be agreed upon as well. For all such agreements to be operational, they need to be simple and reasonable.

Financial agreements also cover four separate areas:

1. The savings group;
2. The loan agreement;
3. The land transaction;
4. The purchase agreement.

(1) Savings group:

In some projects, building groups start as savings groups or credit unions, saving together for the construction of houses. Rules governing the operations of these savings groups are fixed by law in many countries. They specify the rate of saving, the officers responsible for collecting and dispensing funds, action in the case of default and items on which savings can be spent.

(2) Loan agreement:

Loan agreements are usually concluded directly between individual members and the bank or housing agency in charge of projects. If the loan is given to the group as a whole, the responsibilities of the members need to be specified, as well as mutual guarantees given by individual members to ensure compliance with the requirements for the loan.

(3) Land transaction:

The land transaction is an agreement between the present landowner and individual households. Sometimes, the group jointly owns the land, while individual members own the structures. Alternatively, each member may own a plot and a house in a condominium arrangement. The group may wish to impose restrictions on the rent, sublease or resale of houses and plots to others. In case of resale, the buyer may have to make a payment to the group.

(4) Purchase agreement:

The agreement concerning the transfer of the house from the project to individual members needs to specify the conditions of sale. It includes the price of the house or the price of materials used for construction. It may specify the responsibilities for paying various taxes and duties upon such transfer.

The group may not feel the need for all these agreements at the beginning of the project. At that moment, spirits are often high, and optimism abounds. Yet, without effective rules and regulations, problems are likely to arise, particularly in times of stress.

It may not always be necessary to spell out each of these agreements in writing. In some cases, it is better to leave the rules implicit and to take compliance with the rules for granted.

It is, however, important that the agreement give the group enough power to accomplish what it sets out to do. The more ambitious the plan for co-operation and the longer co-operation lasts, the more power the group must have to take decisions regarding its own work.

(photo: Mark Edwards/Earthscan)

IV. THE USE OF PEOPLE'S TIME

Individual self-builders can decide for themselves how much they will spend each week for construction and how long they will take to complete the house. They may bring in relatives and friends to help occasionally. They may hire skilled workers for specific tasks so that the number of people working on the house may vary each week. They buy materials when money is available, and the family is not accountable to anyone other than itself regarding its time contributions. Some family members may contribute more than others, while some may not contribute at all.

In a contractor-built project, a formal agreement with the contractor determines the time spent on the construction of the houses. The contractor must work according to an agreed schedule or face fines and lawsuits. If he is behind schedule, he may hire more workers to complete the job on time. Similarly, his employees must work according to a schedule and commit themselves to working overtime when necessary. They face dismissal if they do not appear for work or if they do not perform satisfactorily.

Project designers often assume that low-income people have a lot of free time and that their time has little or no value. In general, this assumption is false. Most people are quite busy earning incomes and taking care of their basic family needs and obligations. They have little or no spare time available for house construction but they may make time available on a temporary basis, simply because they want a house. It is crucial, therefore, to make the best use of the limited time.

How can the time people contribute be used most efficiently?

A group can only work efficiently, if the foreman is present on the site, materials and equipment are ready, and a minimum number of trained persons are available. It is, therefore, necessary to make sure in advance that a certain number of people will be present on the site to perform the tasks.

This may prove difficult. Some people may be free when others are not, while specific building tasks may require them to be free at the same time. Plans need to be made in advance for some tasks, but people may be unable to commit themselves in advance or cannot be reached in time to make sure that they are present.

The alternative is to allow people to come whenever they can, hoping to find something to do. This is clearly an inefficient use of time but, sometimes, a realistic compromise, given unpredictable time schedules.

It is important, therefore, to make realistic estimates of the time the participants have available. One can learn about their daily and weekly schedules through interviews and direct observations Self-builders usually have some free time during evenings and weekends and are prepared to give up overtime pay to engage in building work.

Many family members are self-employed or day labourers, working irregular hours with unpredictable schedules. The latter often work overtime, usually at short notice and beyond their control. Self-employed persons are most flexible in scheduling regular attendance on the building site.

Many women may be engaged in a variety of household tasks. Some of these can be reorganized to fit the construction schedule, while others cannot. Sickness of children and emergency needs of relatives make their unavailability unpredictable.

Participants with construction skills are particularly valuable for group work. However, they often have busy work schedules and tend to involve themselves in mutual-aid work only irregularly.

Building Together

The participants in the Building Together Project assigned an equal value for time contributed by men, women, and children over 14 years of age. They also agreed to contribute time, whenever possible, during evenings and weekends. Most groups allowed hired labour to participate, but some of the groups insisted on limited hired labour and a minimum number of hours work by the head of the household.

Table 1 The distribution of working hours by family members and hired labour in the Building Together Project, Bangkok, May 1982

Group	Average hours per family per week		
	Household head	Family members	Hired labour
1	14	25	1
2	9	27	3
3	6	13	6
4	5	15	7
5	10	20	5
6	14	12	-
Average	10	19	4

Records were kept by the construction foreman of the group (see table 1). Household heads contributed an average of 10 hours per week (30 per cent of the total time contribution of the average family). Women, who traditionally work in the construction sector in Thailand, contributed an average of 13 hours per week (40 per cent of the total time contribution). Hired labour contributed an average of 4 hours per week, a mere 12 per cent of the total weekly time contribution.

How long can people be expected to work on the construction of their houses?

For most families, building a house may be the single most important investment of their savings. For families without a house, it has a high priority, worth a strong commitment and many sacrifices. It is not surprising, therefore, that families joining a building group are willing to clear their schedules and make time available for house building.

During house construction, many regular family activities are neglected, postponed or performed by relatives and friends. Social obligations are deferred, rest and recreation periods curtailed, and overtime opportunities for earning extra income are foregone.

The house-building period is a time of stress in the life of participating families. It is particularly difficult, if a long construction time prevents them from moving into their houses or if there are outside pressures to finish the houses on time.

The lower and more convenient the weekly time spent on constructing the houses, the longer the participating families can sustain their participation. Alternatively, intense participation can only be sustained for relatively short time periods.

Bogum Jahri

In the Bogum Jahri project, 170 families, working together, completed their two-storey, concrete row-houses in five months of work. They had been evicted from a central-city slum in Seoul at short notice and lived in tents on the construction site. They had to complete the houses before the start of the winter. Families joined, therefore, in an intensive building effort, working on all the houses at the same time.

However, other projects have involved considerably longer periods than the Bogum Jahri project. To avoid false expectations and demoralization, project staff members should discuss the length of the construction period with the participating families. They should also point out to them that precise commitments to complete the houses on time cannot be made in advance. Only a project organization which has gained considerable experience in group building will be able to estimate the construction time required.

How does the time people have available for mutual-aid work influence the project design?

The average time available per week and the length of time required to build the houses determine the total number of hours available for completing work on them. For example, if families are willing and able to contribute 20 hours per week and work for a full year, 1,040 hours per family will be available for completing each house.

On the basis of the number of hours available for mutual-aid work, decisions have to be taken regarding:

1. The time to be spent on managerial and organizational activities, training, socializing and actual construction;
2. The feasibility of moving people to the site before the start of construction, to save on commuting time;
3. The house design, the choice of technology to be employed, the amount of equipment needed for groups working simultaneously and the choice of mutual-aid arrangements.

Given the house design and the production process, experienced builders can estimate the workforce and the time required to complete each building task. For a given house, these tasks need to proceed in sequence, and the total number of hours required to complete the house is the sum of the times required for each of the tasks. Allowance must be made for inexperienced builders, expected delays, such as drying periods, and unexpected delays, such as breakdown of machinery or the unavailability of materials and labour.

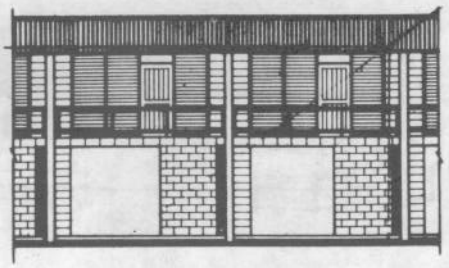
By adding organizational and managerial time to the time needed for actual construction, time for building the house with mutual aid can be estimated. If this is within the limits of the expected time contribution, it need not be changed. If it is too ambitious and requires too much time, the design will have to be changed. Alternatively, hired labour or individual self-help can complete part of the house.

Table 2 compares three time parameters - average weekly time contribution, length of the construction period, and number of hours required to complete houses - in several mutual-aid housing projects. It shows that weekly time-contributions vary from 33 hours in the Building Together project to 12 hours in the Santa Lucia project. In the latter project, people worked only on weekends and holidays.

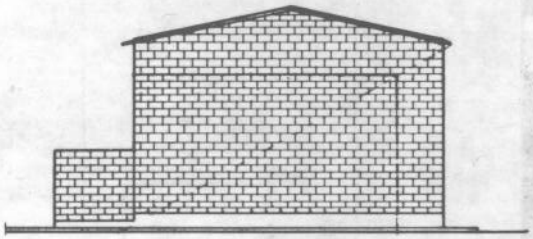
Table 2 A comparison of weekly time contributions, hours required to complete houses and the length of the construction period in selected projects

Project	Hours per family per week	Total hours to complete house	Total months required
Building Together, Thailand	33	1,806	13
Chawama, Zambia	23	1,083	11
El Pepeto Colony, El Salvador	23	450	4
Santa Lucia Colony El Salvador	12	437	8
Mutual-aid co-operatives, Uruguay	20	1,686	19

The difference in hours required to complete the houses reflects the ambitious house plans in some projects and the modest plans in others (see figures 1 and 2). However, it is also a reflection of efficiency in construction. In the Building Together Project, the time required to finish the houses was estimated at six months. It actually took twice as long. The total time required to complete the houses in the projects examined varied from 4.5 months in the El Pepeto Colony in El Salvador to 20 months for the co-operatives in Uruguay.



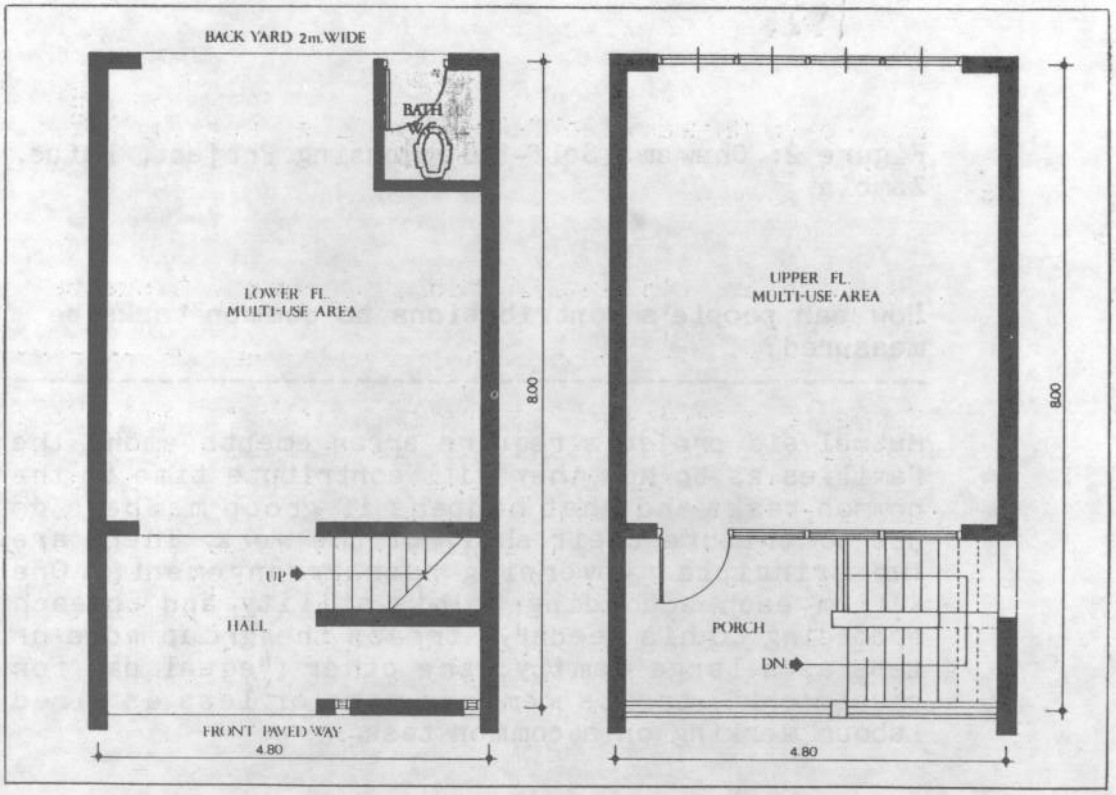
FRONT ELEVATION



SIDE ELEVATION

Figure 1

The double-storeyed house constructed by building groups in the Building Together Project in Bangkok, Thailand.
(from: S. Angel and Z.C. Phoativongsacharn: Building Together: Issues in Mutual-Aid Housing).



HOUSE PLAN

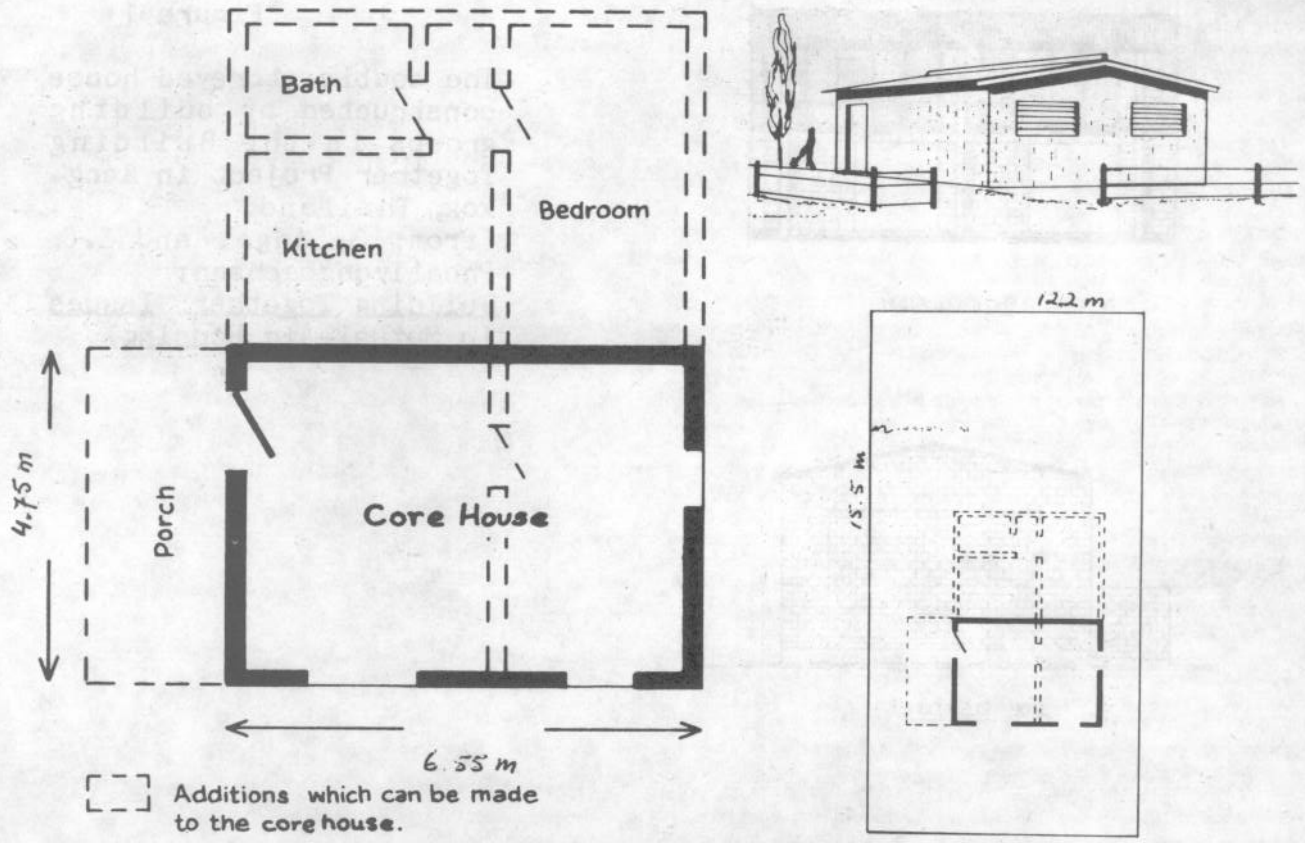


Figure 2: Chawama Self-Help Housing Project, Kafue, Zambia.

How can people's contributions to common tasks be measured?

Mutual-aid projects require arrangements among the families as to how they will contribute time to the common tasks and what happens if group members do not contribute their share of the work. There are two principles governing such arrangements. One ("from each according to his ability and to each according to his needs") treats the group more or less as a large family: the other ("equal pay for equal work") treats members more or less as hired labour working on a common task.

The first principle implies that regardless of how much an individual family contributes, other families help it to build the house. This principle works well in projects where mutual trust and a desire to share replace the need for incentives and disciplinary action.

Among the mutual-aid projects discussed here, it appears to work best in groups of previous acquaintance (the Building Together Project), in self-selected building groups (Hyderabad in India and Freedom to Build) and in projects where the tasks requiring mutual aid are few in number and spread over a long period (the Mexicali project).

In special circumstances, it may also work in projects with many people and a high time-contribution. In Bogum Jahri, the pressure to complete the houses, the lack of time for planning and the high morale of the group made it possible to forgo formal working agreements: everyone worked at the same time on all houses which were allocated by lottery at the end.

However, if the time-contributions required are substantial and people are not previously acquainted with one another, the principle "equal pay for equal work" may be more suitable. It implies that families should contribute equally, if they are to gain equally from their collaboration. A family that contributes most should gain most.

Different versions of this principle have been applied in FUNDASAL projects, at Building Together and in Chawama. It requires a work agreement, specifying the time contributions expected from each family and the way the contributions will be measured. To make sure that families contribute time and to encourage families to contribute as much time as possible, disciplinary measures and incentives should be employed.

How can a project encourage group members to contribute to common tasks?

It is not easy to design a good work agreement. It has to be sensitive to the participants' needs, to be realistic in their time schedules, to be in line with the production process adopted in the project, to be in tune with the customs of the people and to be simple, practical, workable, easily understood and easily implemented.

Most work agreements focus on the time commitment of group members. Time commitments may concern the family as a whole or only require the head of household to contribute at least a minimum amount of time. Some projects allow the recruitment of hired labour and its use by the participating families as family labour. Some projects choose to restrict or prohibit hired labour, because they consider the creation of true community participation as being as important as the construction of houses.

Time-commitments may require members to be present at specific hours each week or to contribute time whenever possible within a given work schedule. Some agreements specify a weekly time-contribution, as well as a total time-contribution over the duration of the project. If the work is not finished according to schedule, members will have to contribute more time than originally agreed.

When people are working on the construction of houses already allocated to families, the group may choose to work on some houses and delay work on others. This is a means of disciplining members who do not contribute enough time. When people are working on houses to be allocated later, this may not be possible: enforcement of discipline, short of expulsion from the group, thus becomes difficult.

Building Together

The Building Together Project experimented with various work agreements, none of which proved really satisfactory. All agreements were based on the measurement of the number of working hours that each family contributed. Each family was expected to contribute 1,500 hours which were to count as a substantial part of its downpayment, evaluated at the minimum wage-rate per hour. However, the emphasis on the measurement of hours resulted in many families focusing on the accumulation of hours, rather than on the completion of construction tasks.

To compensate families who contributed more than others, the group decided to reimburse them at the minimum wage-rate on the completion of construction: the families who worked less were to pay the families who worked more. These debts were, however, often not paid: this added to the resentment of those who worked hardest to complete the houses.

The hourly contribution required from each family did not distinguish between family members. It allowed families to send in inexperienced relatives and friends as well as unqualified hired labour. It also made it possible for skilled heads of households to minimize their participation.

In general, work agreements in the Building Together project did not contain enough incentives. They also did not contain enough provisions for disciplining unco-operative members. As a general incentive, some groups allowed their most diligent members to choose their houses without participating in a lottery.

One possible way to make time contributions efficient is to divide the construction process into tasks. Each task must have a specific beginning and end. Instead of measuring gross hourly contributions, teams are assigned tasks which they have to complete in a specified time. The team is then credited with the hours required to complete the task. There is a built-in incentive - in this case, to complete the task as soon as possible.

Unfortunately, many of these mechanisms generate an unpleasant feeling when brought up for discussion at the onset of construction. They do, however, need to be discussed and included in a work agreement, to ensure accountability and mutual responsibility. People must learn to understand and respect one another. The rules must allow for one another's special circumstances but also insist on a common measure of justice for all.

What causes time losses in mutual-aid projects and how can they be overcome?

Besides the delays common to all construction projects, there are several sources of delay and time loss specific to mutual-aid work, because of its self-help nature and its need for co-operation.

Closely-knit teams can develop a work rhythm, so that members can learn to complement one another. If irregular attendance and participation of different family members and hired labour at different times are permitted, it is difficult to allow for specialization and division of labour. Inexperienced new recruits need to be trained, and this slows down work.

When families live far away from one another, with no means of contact, it is difficult to make plans to work together and change them to meet changing conditions. A network which makes it possible to contact each member at short notice needs to be set up. Otherwise, families could be resettled on site in temporary shelters.

If work takes place during evenings, substantial time is lost owing to extra commuting. In the Building Together Project, the average commuting time increased from 50 to 93 minutes per day during weekdays, when people came to the site on their way back from work. Could they have lived on the site their total daily commuting time would have been 55 minutes - a saving of 38 minutes of commuting per day.

Bogum Jahri

In the Bogum Jahri project, much commuting time was saved, and problems of organizing teams and ensuring regular communication among team members were largely eliminated, because people lived in tents on the construction site.

Mutual-aid work is often seen by participants as an opportunity to socialize and as a rest from their regular jobs. Although the time used for socializing is "lost" for construction work, it is necessary for the creation of cohesive groups.

Time is also lost because of the need to engage in various organizational activities and meetings on the building site. Meetings often take longer than necessary, particularly when participation in meetings is recorded as time spent in construction.

It is essential, therefore, that groups be sufficiently organized and that leaders emerge and exercise power. If groups cannot develop such leadership, support staff must assist them. The staff then needs to assume management responsibilities on behalf of the group.

A building group in the Dandora sites-and-services project in Nairobi, Kenya (photo: Mazingira Institute).

V. PROJECT DESIGN FOR BUILDING GROUPS

Projects involving building groups differ in a number of ways from sites-and-services projects based on individual self-help and from projects with houses built by contractors. They are designed to maximize the advantages of building in groups and sometimes to create strong communities after the houses have been completed.

What is the most suitable size for a project carried out with building groups?

A single project may contain many building groups, and, in theory, there is no limit to project size. In practice, the size of the project may be constrained by such factors as shortage of land or capital or limited experience in project management.

Furthermore, the larger the project, the higher the risk of failure. In particular, if the project experiments with new ideas and new forms of organization and management, the project should not be too large. However, the more experienced the organization, the larger the project can be.

The projects described in this module range in size from more than 1,000 units in El Salvador, to 308 in Chawama, 202 in Building Together, 170 in Bogum Jahri and only 5 in Mexicali. The variation in size reflects the experience of the organizations involved and the extent of experimentation attempted by initiators and participants. The smaller the project, the less experience the organizers are likely to have and the more the projects are seen as experiments.

What is the most suitable size of a building group?

Two opposing concerns determine the size of building groups in mutual-aid projects. The smaller the group, the easier it is to form natural associations. The easier it is also to co-ordinate work among group members without having to resort to formal work agreements.

Larger groups can take on more management responsibilities: they can adopt new technologies with

greater ease and use technical assistance more effectively. They require, however, more attention from community organizers and may need more time to establish themselves.

In the projects mentioned in this module, four sizes of building groups can be distinguished. Each size corresponds to a different set of considerations.

(1) 3-6 families (Hyderabad, India, and Mexicali, Mexico):

These are the smallest found in mutual-aid projects. Members are usually close acquaintances who have lived as neighbours for many years. Mutual-aid groups of this size often develop spontaneously in individual self-help projects. Sometimes they are sub-groups of larger mutual-aid groups. They are easy to organize and can operate effectively without much involvement by project management, particularly when the technology is simple and easily understood.

(2) 6-15 families (Dandora, Kenya, and Dakar, Senegal):

The group is larger than the "natural" mutual-aid group but still allows for a close relationship between group members. The size reduces the number of groups in the project and the consequent demand for technical and organizational assistance by project staff.

(3) 15-25 families (FUNDASAL projects and Santa Lucia, El Salvador, Building Together Thailand, Chawama, Zambia,):

There is little chance that all members of a group of this size know one another well before forming a building group. There is a consequent need to socialize and to build trust among members. This can be achieved by organizing several meetings for future group members before the actual work starts. The group must also establish well-understood work agreements. Groups of this size can adopt new technologies and be trained in the production of materials and new assembly procedures. To be effective, they require experienced foremen and community organizers closely associated with each group.

(4) Over 25 families:

Co-operatives in Uruguay often have 50-200 families, and the group in the Bogum Jahri project in the Republic of Korea, consisted of 170 families. The first three group sizes occur in projects where groups have limited management responsibilities. If the group itself is responsible for the management of the project, it needs to be larger than 25 families. Large groups can economize on management by distributing its cost among a large number of families.

Does building in groups influence site layout?

For financial reasons, designers of low-income housing projects usually try to maximize the number of plots on the site and to minimize length of infrastructure networks. Mutual aid adds a social dimension to layout planning. The physical layout of the project should correspond to the social organization of the new community.

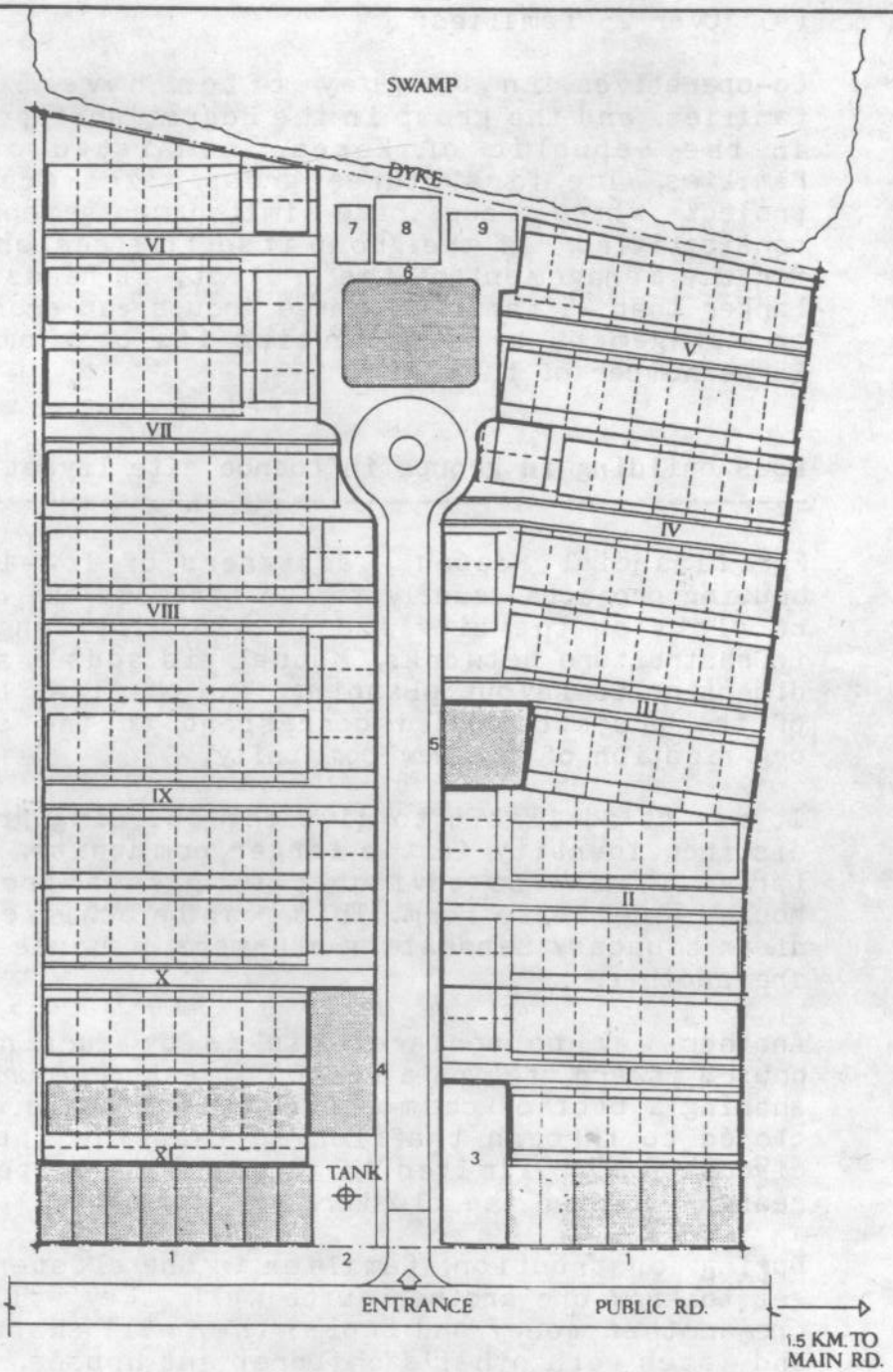
It may be advisable to give the building group a distinct identity in the larger community. Similarly, it may be advisable to give a group of houses a definite form. This can be achieved by a clear boundary separating clusters of houses from one another.

Another way to achieve this is by turning the houses inward, facing a common street or courtyard, sharing a plot of common land. Such space can be closed to through traffic, so that the internal circulation is limited to people with a specific reason to enter the cluster.

During construction, families in one cluster will get to know one another quite well. They will lend one another money and tools; they will share food and watch each other's children and houses. Clusters also allow for continued co-operation among neighbours, after they have completed the construction work.

Building Together

The site of the Building Together project is divided into 10 main clusters. Each houses a group of 16 to 20 families (see figure 3). This layout gives groups a certain autonomy and control over their group space, yet it binds them all together into one community. Similar arrangements are made for considerably larger FUNDASAL projects in El Salvador.



LEGEND:

1	SHOPHOUSES	6	PLAZA FOR PLAYGROUND
2	PLAZA	7	CHILD CARE
3	MARKET	8	SALA (PAVILLION)
4	FACTORY	9	SUMP
5	WORKSHOP		

CLUSTER LINE
LOT LINE
BUILDING LINE

SITE PLAN

Figure 3 Site layout for the Building Together Project.

Projects with a low residential density provide opportunities for a variety of cluster designs. The building group can participate in the planning of its own cluster and express needs which were not clear to professional designers. This makes it possible to adapt the neighbourhood to the aspirations of the participating families.

What types of house design are most suitable for mutual-aid work?

Groups are most effective at building row houses of various forms, particularly those with a common wall. Such houses cannot be built through individual self-help, without some co-ordination between neighbours. They require agreement on the shape of the common wall, the foundations of the wall and the shape of the roof along the wall. In short, it requires that the row be designed as one unit and built as one unit.

Building groups can and do build free-standing houses, as in the Chawama project, or semi-detached ones as in the Dakar project. The semi-detached houses still provide some of the advantages of the common wall, but free-standing structures have no other advantage than possible savings through the adoption of a common design.

Self-help construction is much easier for building groups if building codes and regulations are relaxed, so that people can build houses according to their needs and resources. House designs for low-income groups can be made cheap, if they do not have to meet high standards.

Structures designed and built together can more easily meet standards than houses built singly. Mutual aid can be organized in such a way that the group builds a basic structure which meets the necessary requirements. Afterwards, the families can modify and extend the houses through individual self-help, according to their needs, wishes and resources.

Which technology is most appropriate for mutual-aid housing?

Groups should, whenever possible, build at the same time, so that the phasing of work is reduced to a minimum. This is important because the group work

itself is already phased: the group must proceed from the first house to the last. Therefore, the technology must make it possible to work on several building tasks at the same time. It should not force a group to wait for another group to finish a task before it can start working on its own task.

The project should avoid technologies requiring equipment which is not easily available. Enough equipment and tools need to be present on the site to avoid bottlenecks in the construction process.

The choice of technology for group building must take advantage of the productivity increases which result from group work. These include the specialization of labour and the use of machinery and tools for prefabrication of components and their assembly into complete structures.

Mutual-aid projects should use simple technologies and available materials. They should refrain from introducing innovative production methods which increase risks, uncertainty or the possibility of delays. Yet, there is ample room for experiments with new but non-risky construction processes. Special attention should be given to innovations which can make self-builders productive but do not require complex skills.

What construction tasks are best done by building groups?

Construction tasks can be divided into several categories:

1. Site preparation and the installation of infrastructure such as roads and footpaths, drainage and sewerage networks, water supply and electricity lines;

2. Acquisition of materials and the production of prefabricated components;

3. The construction of a basic structure, such as a "shell" or a "core house", into which a family can move;

4. The expansion and improvement of the house, through the addition of partitions, facades, wall finishes and flooring, and the construction of additional rooms or floors.

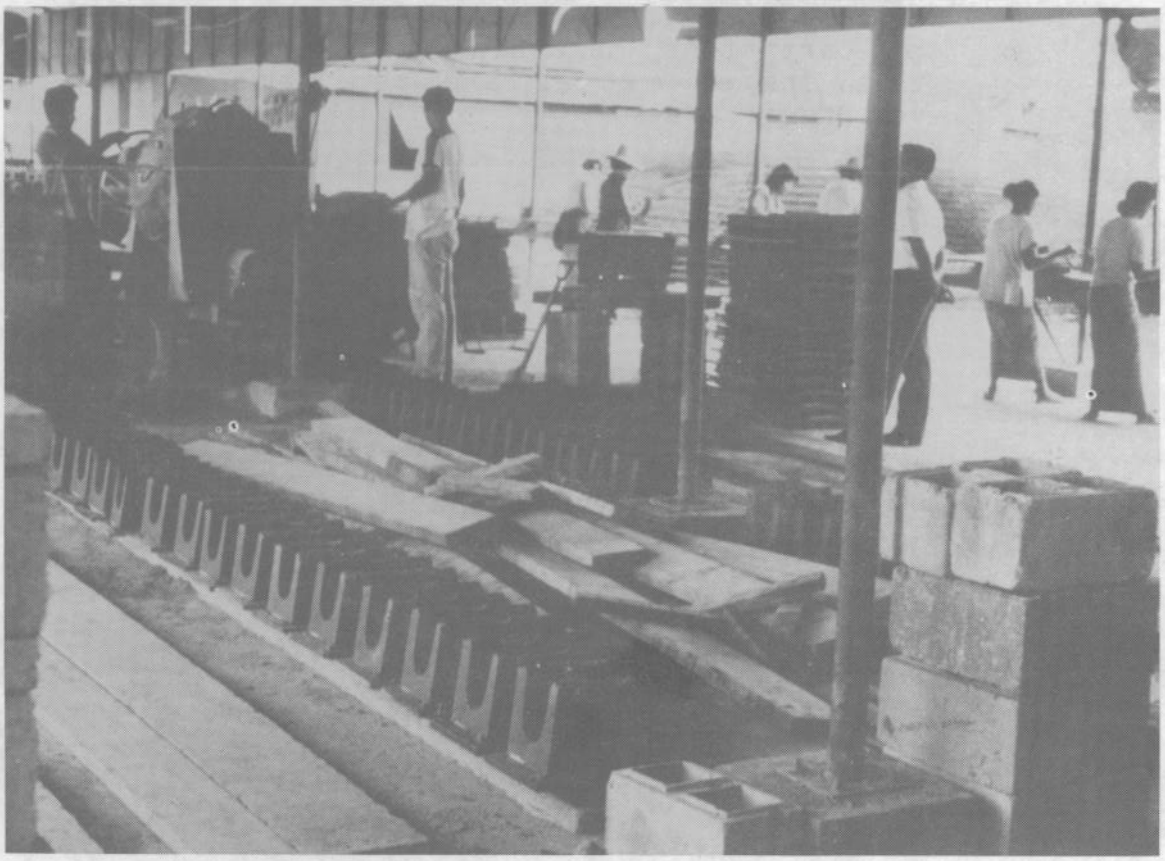
(1) Site preparation and construction of infrastructure:

These require the organization of the entire community for mutual-aid work. When time is short and technical standards are high, project management can employ contractors for such tasks.

(2) Prefabrication of materials:

Manufacture of materials, such as bricks and blocks, or of difficult components, such as panels, beams, piles or stairs, is a particularly suitable task for building groups. The repetitive nature of prefabrication allows for a fast learning of skills, and the production process can be easily broken down into a set of simple, distinct tasks to be performed by small teams.

It requires, however, an efficient production organization, good equipment, enough space and a constant flow of materials. If these are ensured, prefabrication offers many possibilities for cost



In the Building Together Project, groups fabricated bricks on site.

reduction in self-help construction. It may also reduce the complexity of house assembly which often requires great precision, experience and resourcefulness.

(3) Basic structure:

Many projects employ mutual aid to construct a basic support structure. If the building group is well organized, it can construct the houses faster and achieve higher standards than a family could through individual self-help. Once the house has been completed, the family can move into the house and complete it gradually by individual self-help or by informal co-operation with neighbours. In this way, the time the family has two houses (one to live in and one under construction) is reduced to a minimum.

(4) Expansion and improvement:

The structure built by mutual aid is a "support structure" for additional future construction. It can be a core house, later to be enlarged and expanded, both horizontally and vertically. It can also be a shell, later to be filled in with internal partitions, mezzanine floors and facades. In this stage, mutual aid can remain largely voluntary.

VI. THE FINANCIAL SIDE OF MUTUAL-AID HOUSING

The organization of building groups has both social and economic objectives. It aims at creating a community spirit and mutual-aid traditions. It also tries to make housing affordable to low-income groups. Mutual-aid housing must therefore also be evaluated in economic terms.

What are the causes of cost reductions and cost overruns in mutual-aid construction?

Group members contribute organizational skills as well as their own labour. If used efficiently, these add considerable value to the finished houses. Mutual-aid construction also eliminates the need for contractors and their profit margins.

Moreover, building groups can often economize through buying of materials in bulk, specialization of labour, prefabrication of building components and employment of large groups for specific building tasks. As a result, they can usually produce houses at costs considerably below their market value.

Cost overruns occur largely because of delays caused by members not showing up for work and bottlenecks in the use of machines and tools. The time devoted to meetings and social gatherings and low attendance, owing to poor morale or conflicts among members, can further increase costs. Incompetent site management, which cannot provide materials and equipment in time, is another factor leading to increased costs.

Technical assistance provided to the groups as well as the need for social workers, may make for additional costs as well. The pooling of materials may result in wastage and breakage. Lack of discipline and supervision may result in low quality of construction.

To keep costs down, building-group members must develop a strong sense of accountability to the group. In group work, where all members share expenses, individual members may not be aware of cost increases. However, costs go up, owing to the negligence or lack of conscientiousness of group members in the use or purchase of tools and materials.

To give a simple example, a group member who decides to buy an additional tool has to pay only one twentieth of the actual cost of the tool. The rest of the group bears the rest of the cost. If self-interest dominates, the tool will be bought, although its use for the group may be limited.

If people have the interests of the group at heart, members with a good sense of cost control will exercise a restraining influence on others. As a result, the group will introduce innovations to reduce costs, to minimize waste and to keep costs at low levels.

The main cost reductions and cost overruns in mutual-aid projects are related to organization and management. Mutual aid both increases and reduces the need for technical and managerial assistance. It is the net reduction of the need for external management which holds the greatest promise for cost reduction. If, however, mutual aid places a heavy burden on project management, costs are likely to increase.

How does the cost of construction by building groups compare with costs of construction by a contractor?

There is a general lack of information about the actual costs of houses constructed through mutual aid. Many mutual-aid projects have hidden subsidies: the cost of land and of staff providing assistance to the building group are often not included in the cost of the houses. This makes it difficult to compare houses built through mutual aid with houses built by contractors.

Moreover, the total construction cost of a house is a result of many decisions besides the decision to use building groups. Labour usually forms only a small portion of the total cost of a house.

El Salvador

In FUNDASAL projects, groups built core houses which the families completed. As a result, the cost to each family was reduced by 10 per cent compared with the cost of the house if a contractor had been used. Even after taking into account the opportunity cost of labour (i.e., what the family could have earned if it had not been participating in mutual aid), there was a net benefit to each family of about $40.

Building Together

In the Building Together Project, contractors now build houses, similar to thoseconstructed by mutual aid, for sale at market prices. This is part of a cross-subsidy scheme to make it possible for low-income families to acquire the houses constructed with mutual aid at prices lower than their actual cost.

The construction cost of a completed house is $4,737. The cost of the an incomplete "shell" house, constructed with mutual aid, amounted to $3,522. Even if the average amount spent by families to complete their houses ($600) were added, contractor-built houses are still found to be 15 per cent more expensive.

This comparison, however, cannot be taken at face value. The quality of construction and finishes in the contractor-built houses is better than in the mutual-aid houses. Moreover, their costs were computed more than two years after computing the costs of mutual-aid houses.

Although the figures presented above are difficult to compare, they suggest that mutual aid can compete with contractor-built as well as individually-built units. Mutual aid can be cheaper than other forms of construction, even when inefficiencies in project management are taken into account. Most of the projects discussed are still

experimental, and an effective management system for mutual-aid work has not yet emerged.

Can mutual-aid housing reach low-income families?

Affordability has, in general, little to do with building groups as such. Labour often amounts to only a very small fraction of the total cost of a house. Other costs, such as land, infrastructure, taxes, rates, maintenance and, in particular, interest charges, influence affordability considerably more than labour costs.

Consequently, mutual-aid housing can reach low-income groups, if the houses built are minimal. If, however, they are complete, large and of high-quality materials and finishes, low-income families will not be able to afford them. To reach the poor, mutual-aid work must focus on building a basic core unit. Individual families can complete the houses over time, as their savings accumulate.

El Salvador

In FUNDASAL projects, core houses measuring 30 m^2 are constructed with mutual aid. Their cost to the participating families forms only 35.9 per cent of total housing cost. The rest is attributed to labour and materials for completing the house individually.

Hyderabad

In Hyderabad, the land on which settlements are located is often transferred to families free of charge, and basic infrastructure is installed at no cost to the community. Banks offer loans at 4 per cent interest to families with incomes lower than 250 rupees per month, covering up to 80 per cent of the cost of the house, to the limit of 4,000 rupees.

Such arrangements, combined with mutual aid for the construction of the houses and the possibility to save during the construction, allow low-income families to participate.

However, low-income families also run a risk when they participate in mutual-aid projects. Costs may rise during the project, and rich members may see no need to change the house design to control these rising costs. Poor families may then be forced to invest more in their houses than they are willing or able to do.

Participation in a building group can create the trust necessary to eliminate the need for a down-payment. In Dandora and FUNDASAL projects, group work replaced downpayment. In the Building Together Project, it accounted for two thirds of the down-payment. This made it possible for people with hardly any savings to acquire a house of their own.

What is the opportunity cost of mutual-aid work?

Opportunity cost is the maximum amount of money a member of a building group could have earned, if he or she had not engaged in mutual-aid work. The difference between what people normally earn and what they 'earn' in mutual aid may be considerable, particularly for skilled labourers. In such a case, it is profitable for them to do their normal job and hire someone else to participate in the mutual-aid work.

Mutual-aid work usually takes place at weekends and on weekday evenings, when most people have free time. Occasionally, group members overseeing the construction of houses by hired labour are advised to take leave from their jobs and to be present at the site during the day. Housewives may have some free time during the day, if their children can be taken care of by relatives or taken to the building site. However, people engaged in mutual-aid work do not have as much free time as is often believed. The need to work together on agreed-upon work schedules often means losing valuable income.

El Salvador

In FUNDASAL projects, certain groups suffered financial losses through their participation. Skilled workmen and small traders had to sacrifice the relatively high earnings which they could have made during the weekends. For some poor families it is difficult to give up the income normally received at weekends. Many families in these two categories sent substitutes or preferred to pay fines and, in some cases, even dropped out of the project.

The group with the highest absentee rate was the skilled construction workers, as they have the highest earnings during the weekend. Working for himself, a skilled construction worker could earn four or five times the $5 attributed to a weekend's work in mutual aid.

On average, families participating in the Sonsonate project of FUNDASAL lost about two thirds of their weekend incomes during the project. Consequently, this reduced the value of their labour contribution to the project by 60-75 per cent.

Building Together

In the Building Together Project, some groups developed the habit of coming to the site immediately after work during weekdays, sacrificing the best work shifts to keep up the momentum of their work. Other people failed to meet their commitments to the group, owing to work obligations which they considered more important than construction work.

It is particularly when this occurs among household heads that it can be a constant source of conflict and frustration for group members. From the point of view of the absentees, however, it is usually an attempt to reduce their cost of participation.

When calculating cost estimates of the various options in self-help construction, these opportunity costs must be taken into account. In individual self-help working hours are flexible: it is also easy to recruit hired labour and relatives to work on the site. Individual self-help may reduce the opportunity costs of self-help labour, while increasing the overall number of work hours available for construction.

If this is the case, it may be better to limit mutual aid to those tasks which can be best undertaken by building groups. These include work which requires a large workforce at one moment in time, such as the construction of a roof. Other tasks are then left for individual self-help.

Can mutual aid improve cost recovery?

Most low-cost housing projects provide long-term loans to finance house construction. The record for loan repayment throughout the world is rather bad. Mutual-aid work can develop a sense of individual and community responsibility to make the necessary payments. It may, therefore, improve cost recovery, provided there is a general trust in the agency granting the loans. If this is not the case, community organization can lead to organized resistance to loan repayment.

El Salvador

The El Salvador Foundation for Minimum Housing and Development (FUNDASAL) has one of the best loan repayment records of any World Bank financed shelter programme. This is mainly achieved through the requirement that participants construct their houses through mutual help. In this way, a sense of responsibility for the project develops which leads to low default rates. In several projects, the community has even taken over the responsibility for the collection of the loan repayments.

There is, however, more to cost recovery than developing a sense of responsibility through mutual aid. The Foundation is a private organization, free from bureaucratic and political pressures that make collection difficult. It uses relatively tough and highly visible measures to pressure families to repay loans, and it is administratively efficient. It has computerized its records, so that it can quickly identify defaulters.

Most participants perceive the Foundation in El Salvador as non-exploitative. They understand that it pursues defaulters to enable more families to benefit from its programmes. If the financial institution does not have such a reputation, mutual aid by itself will not improve the loan-repayment record.

Building Together

In the Building Together Project, the Government Housing Bank had a cumbersome collection system. The failure of the Bank to project a positive image to the people resulted in more than two thirds of the families being in arrears.

Can mutual-aid work reduce the chances that houses will be resold after their completion?

Low-cost housing projects usually have an element of subsidy, even though they try to be self-financing. If the project provides subsidies to low-income beneficiaries, there is concern that they will resell the houses to high-income groups and move back to slums. In this way, many of the financial benefits are transferred to those not in need. It defeats the purpose of improving the housing conditions of the poor.

There is, therefore, pressure to restrict or reduce resale of houses in low-income housing projects.

This is not a simple matter as there are usually many quite ingenious ways to circumvent these regulations. However, people must be able to sell their house which sometimes represents their entire life savings. It is irrational for them to invest in their houses, if they cannot recover their investments when conditions demand it.

The building group and the community organization composed of these building groups have an interest in restricting the resale of houses. Restrictions on resale can maintain a sense of stability in the neighbourhood. They prevent encroachment by strangers and increase the sense of social cohesion in the community over time. The stronger the sense of community, the better is the maintenance of community infrastructure. The better the maintenance the higher is the value of individual houses.

Building groups see themselves as having contributed directly to the creation of value in each one of the houses built by the group. They, have a natural claim therefore, to these houses and a tendency to restrict entry to only those families acceptable to them. Moreover, the group may wish to vet newcomers or to share in the profit from resale.

Mutual-aid housing can lead to forms of land ownership which restrict resale. It is also possible to transfer the gain from increased land value to the group. The group can own the land, while individual families own the structures and the improvements on the land. The group is legally registered, for example as a co-operative with each family owning shares corresponding to its share in the land.

If a family sells its house in such an arrangement, the buyer buys the house from the family and the shares from the co-operative. The price the buyer pays for the shares is higher than the selling price the former houseowner received from the co-operative. This allows the co-operative to retain some of the increased value of the land. In this way, the co-operative can exercise some control on resale. It can also participate in the selection of new members, by giving priority to people on its waiting list.

In most projects, however, people prefer individual freehold land titles, without any restriction on resale. Such titles are also preferred by lending agencies, because they can use the titles as collateral for mortgage loans.

VII. CONCLUSION

This training module has raised a large number of issues on which a decision has to be taken before a mutual-aid housing project can start. They include such issues as:

- The removal of obstacles which hinder the construction of houses by self-help building groups;
- The support building groups need to organize themselves and to construct their houses;
- The rules, regulations and supervision required to make building groups work efficiently;
- The layout of the project and the organization of the building process to facilitate the construction of houses by groups.

The module shows that it is necessary to look carefully at the problems and the benefits of mutual-aid housing, before starting a mutual-aid project. Building groups can overcome certain problems which individual self-help projects and contractor-built housing face: building groups can usually build faster and at higher standards than individual families, and a downpayment can be replaced by a labour contribution. Moreover, mutual aid can create a strong community spirit which lasts after the houses have been completed. However, it is not guaranteed that mutual-aid housing is cheaper than construction through contractors, in particular if the overhead costs (management, technical staff, community organizers) and the long time required to organize a mutual-aid project are taken into account.

Constructing houses through building groups is not an easy task for the project staff and the building-group members. Many obstacles have to be removed, and many problems have to be solved, both before and during project implementation. Before project authorities or project beneficiaries decide to have houses constructed through building groups, they will have to consider all the issues discussed in the module and ask themselves the questions:

What are the advantages and disadvantages of construction through building groups?

What tasks can building groups perform in the construction of the houses?

How can mutual aid best be organized?

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