

Community mapping

A tool for community organising



WaterAid – water for life
The UK's only major charity
dedicated exclusively
to the provision of safe
domestic water, sanitation
and hygiene education to
the world's poorest people

Guidelines for WaterAid Programmes and Partners

Who is this guide for?

This guide is for WaterAid programmes and partners, to help them understand and use community mapping as a participatory development tool.

There is already a considerable amount of experience in participatory techniques within WaterAid. They are being used to great effect in the delivery of basic services within both rural and urban projects, using tools such as the sanitation ladder and processes that ensure community managed water supplies, with considerable levels of sustainability and affordability.

These guidelines will assume knowledge of the principles of participatory techniques. They highlight the issues within community mapping that take the use of participation from an approach used to improve service delivery to one that promotes social change.

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Introduction

As the name suggests community mapping enables communities to map details of where they live and the surrounding infrastructure. It is a way of encouraging and empowering communities to take action for themselves.

When communities carry out surveys of their own area, build an accurate knowledge of what their community actually looks like, in a way that keeps that information within the community, it not only puts them in a stronger position to represent themselves with NGOs, local and national governments, but the very process itself can skill and build capacity within the community. That enables the community to establish for itself what problems it faces, and to begin to look for and implement solutions.

Community mapping processes are already being used in some countries, such as Tanzania, as part of WaterAid projects. They are also being used by WaterAid partners, if not necessarily using WaterAid funds directly, in other countries including Nepal and Malawi, mostly mapping urban slum communities.

These guidelines aim to illustrate clearly what community mapping is, and to provide foundation information for practitioners in how to begin to make processes happen. It also features case studies of where community mapping, and similar participatory survey techniques, have been used to illustrate both its flexible nature, and the range of purposes to which community mapping can be put.

It also examines the implications of the technique for WaterAid, particularly in the light of the organisation's remit of water, sanitation and hygiene, concluding where WaterAid can be a core part of processes, and where it can contribute as a minor partner.

Towards a definition of community mapping

Community mapping is an approach that helps people to get directly involved in their own development and that of the whole community. It encourages the community to consider what it can achieve for itself, before seeking assistance elsewhere. It identifies the kind of assistance they must seek, in order to achieve their aims.

The process of community mapping provides important information not only for the local community, but also for the city

or town council. Through this process, communities are able to challenge the myths and prejudices that are held about people who live in slums and squatter settlements.

Participatory rural (or urban) appraisals share much of the same language and skills of community mapping processes, with an important difference. In community mapping, the process is not only carried out by the communities themselves, but the projects or events that happen as a result of the community mapping are also carried out and managed by the communities. There is an intention of social change, and not just service delivery. The goal is not a certain number of latrines or water points, but to build the capacity of the poor to find ways of meeting all their needs.

WaterAid and community mapping

These guidelines have not focussed on using community mapping for water and sanitation services alone. This approach would contradict the main purpose of community mapping, which is to assist communities to bring together information within their own communities, and then from this to decide what is important and what is not.

If water and sanitation are deemed to be important by the community, then these issues will be included in the mapping process. As the lack of water and sanitation are almost invariably identified as two of the most important issues that poor communities face, then this will be clear from the community mapping process and will be addressed, as part of a wider programme of works that will also include other issues, such as land tenure, work opportunities and housing.

What is community mapping?

Community mapping is a mapping process carried out by the community for the community. It is a development tool that aims to tap into and expand the breadth of knowledge and experience within communities, in order to empower them and develop their capacity to deal with a variety of issues and problems, developing solutions for themselves.

Community mapping is used in both developing and developed countries, to mobilise communities, gather information, lobby governments and other decision makers, and to protect or promote the provision of services. It is mostly carried out in urban slum communities.

At its heart is the assumption that communities are capable and knowledgeable about the services or other resources they want and need, though they do not have equal or fair access to them.

Through community mapping, communities can build on and improve their situation by pooling their resources and their knowledge, and work effectively with other institutions, such as non governmental organisations (NGOs), local government and finance institutions.

This report aims to outline how community mapping works, its principles and potential pitfalls, and it examines WaterAid's role in the process, illustrated with case studies from across our projects.

Community mapping is carried out by communities, for communities

- It begins from the position that **knowledge is power**. By pooling sharing and making information widely available, decision making is taken from the hands of a few informed or educated gate keepers and given to the community at large.
- By giving communities access to information, and the capacity to use it the community (as well as government officials and community leaders) is made aware **what it is able to achieve by itself**, by working together.
- The knowledge **stays with the community**, and is managed, built upon and improved as the community undergoes change. This side steps a frequent problem with development work: that each new NGO carries out its own mapping exercise and planning processes, failing to account for work that has already taken place – sometimes only months before.
- The first step is to **gather the information** about the community, what its members do, how much they earn, levels of education, access to services and levels of ownership.
- The second step is to **encourage and support the use of this information** so that it can be used beyond the current scope and timescale of any particular project.

When Tim Ndezi, of WaterAid Tanzania, was involved in community mapping in the capital Dar es Salaam in September 2001, he saw what real participation looked like, compared with models that only *looked* like they were participatory.

“I saw the difference between extractive participation and participation that is community controlled. The principles behind community led exercises such as Participatory Rural Appraisal (PRA) are the same, but the essential question that must be borne in mind is: who is controlling the decision making processes?

This is what will ultimately lead to long-term social change, rather than the provision of services, which, as has been seen all too often, may not be sustainable.”

Carrying out effective community mapping

There is no one reason, or one method, for carrying out community mapping. With so much to achieve, the process must be fluid and the time-scale should be flexible: defined by the communities themselves, dependent on what issues are raised and how communities together decide to manage them.

There are 12 general principles that should be followed, and can be adapted to each particular situation:

- 1 Find the time.** Community mapping is a long process, so patience and preparation is needed, particularly being prepared for nothing to happen for long periods. Gestation periods are necessary, and funding will need to be flexible to account for it. Remember: the aim is social change, not service delivery.
- 2 Identify the community.** Who is it that you're working with and why? It is important to determine between communities that have come to WaterAid for assistance, those that WaterAid have approached, and those with whom WaterAid has been working with, but where a new approach may be needed. In early attempts at the community mapping process, it may be best to develop the process with communities that WaterAid already enjoys a relationship with – trust is vital between the community and supporting agency. As experience grows, those communities that are familiar with the process can assist those with less confidence.

WaterAid has considerable experience working with waterpoint user groups, who would be in a good position to use this approach to expand the reach, breadth and focus of development work that they are doing.

- 3 Identify community leaders to begin the process.** Champions for community mapping need to be identified, whether they are, for example, a savings group or women already organised around a process. Women should be at the centre, to ensure it is an exercise that is affordable and sustainable. Discuss the process, emphasising what the community has to gain by doing the mapping themselves, instead of having outsiders do it. As above, use other communities that have begun the process to point out the opportunities and pitfalls of community mapping.¹
- 4 Carry out an initial 'settlement profile'.** It should be a very rough survey of the settlement, counting the number of homes and families, the number of latrines, waterpoints, schools, open spaces and medical services. This will help to define the area to be mapped, and the issues that might be raised by the community mapping process. Use it as a starting point

for discussion, and to drum up interest within the community around the major concerns it has. It may also highlight existing tensions between different sectors of the community.

- 5 Design the enumeration forms with the community.** Enumeration forms should be designed with the community to be as useful as possible and in the local language. They should ask questions of fact, not of opinion: 'Who lives in the house/shack?', 'How long have they lived there?', 'What do they earn?'; not: 'What does the settlement need?', 'What kind of waterpoint would they like to have?', 'How much are they willing to pay for water?'. Open ended questions allow those who are most influential to control the development process. (There are examples of enumeration forms in the appendix).
- 6 Train community members to use the forms.** This training should be used to refine questions and remove any ambiguities. It is important that there is consistency in the questioning, and that the questioners are comfortable using the forms. Enumeration should be carried out in teams of two or three, so only one person from the team needs to be able to read and write.
- 7 Design a map of the community.** It is not essential for the map to be prepared before the enumeration teams begin to question the community, but it helps. Often, there will be those in the community with the confidence, if not the skills, to draw a map of their community, and local students can be enlisted to assist. At this point accuracy is not crucial but using and building on the experience and knowledge of the community is.

Drawing the map

Maps should be drawn on the principle that the buildings – houses, shacks, schools, open space, streets etc exist in relation to one another, and the important thing is to have this drawn accurately. The scale will then fall more or less into place. Start with a large piece of paper on the ground and draw one of the homes in the middle. Working outwards from this, draw streets, houses, green spaces or community spaces, waterpoints and toilets as they fan out. If you go off the page, get another piece of paper. As the enumeration is carried out these maps can be refined.

¹ There are organisations carrying out community mapping and enumeration processes in many WaterAid countries, including India, Nepal, Pakistan, Uganda, Zambia, Malawi, Madagascar, Ghana and Tanzania.

mapping of water and sewerage pipes it is likely that local residents will know where they are – though they may only know it because of illegally tapping into the pipe.

- 9 Start the enumeration.** Using the map, identify and name the families and individuals relating to each structure. If the survey has also been done to start a process of identification of the shack structures in order to avoid eviction or to define tenure status, this can be an opportunity for numbering the huts. Photos should be taken of the structure and family members (see India case study – the Sparc, NSNF and MM Alliance). If there is no-one home, make a note of it, leave a gap in the numbering system and come back later.

This is the front line of community mobilisation.

Enumerators will be able to talk to each and every householder, whether they are land owner, home owner or tenant, about possible future development, and what their dreams and hopes for their lives are. This is the opportunity to start organising residents into activities such as savings schemes or clean-up activities.

- 10 Analyse the data.** Compiling the data, by transferring it by hand from the enumeration forms into ledgers keeps the data at community level, ensures continued community ownership and understanding of the data. Data can be transferred to a computer for more precise analysis, if necessary.

- 11 Verify the data.** Return to the households with the forms at a different time. If no-one is in during the day then come back in the evening or early in the morning to find the residents.

- 12 Use the data.** Discuss what the results of the survey mean. Are there surprises? Does everyone understand what is contained within the data? How does it assist the community in knowing what can be done next? Which families need the most assistance in accessing basic services? How can they be assisted? How can these data now be used: for lobbying, project design, information sharing, proof of residence and for general celebration?

There are always hitches

Outlining 12 steps is bound to imply the process is linear and straight forward but this is seldom the case. There are always tensions, hitches, arguments, discussions and repetitions. All of the forms will need to be verified during the following days or weeks to make sure that there have been no mistakes or deceptions. This is particularly important where there is much at stake, for example if the survey may be used for land tenure purposes.



WaterAid and community mapping

Community mapping is supposed to be just that: a mapping process carried out by the community for the use of the community.

That brings particular issues for an agency like WaterAid, which has a specific remit and interest in water and sanitation issues, in ensuring the community develops and provides mapping solutions for its own use, not those that will just make our work easier or more effective.

This section aims to consider some of the particular questions that the community mapping process raises for WaterAid.

WaterAid's role

The role of the support organisation is to facilitate the process, assisting in finding consensus between different sections of the community, without imposing views or advice onto the process. The support organisation should facilitate, bring connections to other NGOs and officials and introduce communities to the people who will assist them in achieving their goals.

Such a 'content neutral' role is crucial to the process, but a difficult one for a specialist organisation like WaterAid – we are seldom content neutral, because our staff have significant expertise and experience in the delivery of water and sanitation under a wide range of conditions. Taking a step back to listen to community aspirations, allowing space for communities to make mistakes and learn from them, could be a significant professional challenge.

The support organisation will also be required to place the results of the survey into a larger context, to analyse the data and combine it with data emerging from other community mapping exercises in other parts of the country, or city. It is a crucial, but difficult role to play; often it requires an invisible hand, accepting that communities will assume they have achieved results all alone; that the NGO had nothing to do with it.

Working beyond the narrow?

WaterAid faces the difficulty of deciding how it can work to its narrow brief, the delivery of water, sanitation and the promotion of hygiene, yet also support a wider community mapping process that will go further towards promoting social change than the delivery of services will provide alone.

In particular, WaterAid may be faced with the problem of setting the systems and aspirations of a community mapping exercise within a community, but being unable to follow up with the support the community needs to drive through the developments it decides upon.

An effective alternative is for WaterAid to support other organisations using the mapping process and other community-led tools, as well as supporting the water and sanitation aspects of development projects. This would fit well with much

of WaterAid's current urban work, where partnerships with other NGOs and local government are essential for holistic developmental outcomes.

Working in partnership, to share expertise

WaterAid has long recognised the importance and value of focussed partnerships, and has built up good relationships with a large number of NGOs and community based organisations (CBOs).

WaterAid is interested in expanding its knowledge and expertise of working in urban areas, and it makes sense to do this in partnership with organisations that can provide complementary skills.

In many of the countries WaterAid works in, there are now at least the beginnings of 'federations' of poor communities. For example, members of the umbrella organisation Slum Dwellers International (SDI), which might be the obvious place to learn about this process of working, without leading to commitments beyond that of water and sanitation. Beyond the SDI affiliates in Malawi, India and Nepal, which are already known to WaterAid, SDI is also represented in Zambia, Madagascar, Uganda, Tanzania and Ghana.

It is a good alternative to attempting to be the sole support organisation for community-led processes, allowing WaterAid to be actively involved in processes such as community mapping.

Tackling land tenure

The issue of land tenure is often inextricably linked to access to water and sanitation, particularly in squatter or slum settlements. Any normal entitlement that residents have to services in a particular area, tend not to apply to those living in areas or settlements that are not formally recognised by the state or municipality. In short, without formal land tenure, access to water and sanitation services is almost impossible to access. Jobs, education and relationships to state can similarly be extra-legal.

Community mapping can be an important step to assessing this particular situation, and providing the information needed by residents to make their presence, and the conditions they live

in, known to those who would otherwise be planning within a vacuum. It is therefore essential for WaterAid to engage with land tenure as an issue.

However, sometimes it does not make sense to directly address the big issue of land tenure as a result of a community mapping process, but instead to go for the less controversial issue of water: it could give the people confidence to approach the biggest issue once a relationship between the state and community has been established.

The people living beside the railway tracks of Mumbai had frequently been threatened with evictions due to the danger inherent in where they lived, in some places less than a metre and a half from the tracks and, more pertinently to the authorities and owners of the land owning Railway Corporation, as their presence was slowing down commuter trains essential for the Bombay economy.

Together the Railway Slum Dwellers Federation, Sparc and Mahila Milan carried out a mapping process, which became an important step in the successful large-scale relocation of these people.² Instead of their homes being simply bulldozed, with nowhere for the residents to go to, the mapping process and subsequent lobbying ensured that there was alternative land and prospective housing that was suitably located, with the much-needed services available.

The enumeration and mapping process proved that many of the residents had been living on the land for so long that they in fact had legal tenure, which meant that the authorities had a legal duty to find alternative and acceptable land. The slum dwellers have since built their own homes, with the necessary services.

Identifying and approaching the poorest in communities

This is the persistent question posed by development organisations desiring to use limited resources in the most effective way. WaterAid knows that aims to reach water and sanitation targets are easiest to fulfil by reaching those who are well off, but that is unsatisfactory.

The community mapping process is designed to identify the poorest, those who have the least assets and those who have the most to gain from community joint action. It allows for the poorest to get involved in the planning and ensures their voices are among those that are heard.

Community mapping also espouses design solutions that are within the capacity of the poorest within the community, because it is clear that those solutions, designed to meet the needs of the poorest, will also be affordable to other members of the community.

In many cities where people rent a room or a backyard shack from middle class or working class residents, the poor residents are hidden, and it is harder to identify these groups of people, than if they live in a squatter settlement or slum area. The way in to starting to work with the hidden populations of a city will depend on building connections that already exist.

For example, in Kathmandu WaterAid's partner Lumanti has started working with a few renter families, which they know of through another network of informal traders. Through this connection, it could be a quick step to starting a savings group among renters, who will also then be able to arrange meetings, enumerations and community mapping processes in the same way as in a squatter or slum settlement.

It's a question of finding the right time and the right people. Once the process of enumeration and community mapping has been carried out a few times the process can be continued by experienced communities, who will be responsible for seeking out the poorer people in the first place.

Support organisations must always be aware that expanding their reach from more 'traditional' areas of support may overstretch limited funding and experience. It may be that expanding experience from squatter settlements or slums into a more varied environment, such as renters, may demand too many extra skills, leading to all the work being done less well.



² Patel, Sheela, Celine d'Cruz and Sundar Burra, Beyond evictions in a global city: people managed resettlement in Mumbai, Environment and Urbanization Vol 14 No 1 IIED, April 2002.

Making community mapping work

The process of community mapping, for any organisation, is unlikely to be as straightforward as outlined in this report. There will always be challenges, unexpected hitches and setbacks to be accounted for.

For example, there will always be members of the community that will seek to use the process for their own ends, which may not be in the interest of the community. There are as many inter-community tensions among poor communities, as there are among any other section of society.

These are issues which the community may need assistance to resolve. The process of community mapping and enumeration is designed to engender trust and transparency, but will in the process of achieving this, challenge existing power structures, which will cause disagreements, particularly when much is at stake.

Community mapping requires trust, understanding and a support team that is prepared to listen without prejudice, and not respond immediately with technical solutions.

This section aims to outline some of the key pitfalls, and other things to consider, when entering into a community mapping process. Combined with the case studies in the next section, it should assist practitioners to identify and deal with possible problems.

- 1 Remember the purpose of community mapping.** It is important not to use the community to do a survey for your own purposes, for example in order to get information about water, without being prepared to discuss other issues, and assist in finding solutions. For a specialist organisation like WaterAid, the temptation is to only ask for information on water and sanitation, particularly since they are generally one of the biggest, but most easily resolved, problems for all communities. Remember, the delivery of water and sanitation is not the purpose of community mapping and enumeration, although it may well be a result of this process.
- 2 Take a step back.** It is crucial that the support agency recognises that it does not control decisions on how to proceed in order to deliver the services or foster the development which the community decides it requires. It is essential to remember that you and the community are learning together, and no one body has all the solutions. Even when it is clear that the community are waiting for your solutions, avoid providing them. The community may well have the answers themselves, with sufficient discussion and probing, and the solutions may well surprise the ‘expert’.
- 3 Who controls the resources controls the process.** If funds are being provided by the support organisation, how these are managed and accounted for needs to be carefully considered. Savings schemes are an effective way of putting control into the hands of the communities, limiting the need for extensive external funding.

“Do not start with what others say ‘should be done, but rather, begin with women being able to articulate what the nature of their problems is, and even more specifically, how they envision the solution.

When the whole community begins to accept that these are indeed the priority concerns of the community, they begin to look at the solution, and look at what aspects of the problem they can solve themselves. They assess the human and financial resources they have and then they look at the skills and resources they need to acquire to achieve this goal. They also define what they cannot do and this forms the basis of the negotiations with the city and state.”³

Sheela Patel, Sparc.

- 4 The survey should be a vibrant process, not just an extraction of numbers.** The data are not the only purpose of the enumeration and mapping process, but an opportunity for discussion, exchange and building solidarity
- 5 Remember the wider picture.** The support organisation needs to be a back-up organisation with research capabilities and a good understanding of the larger urban realities to make the enumeration useful in the larger context. An organisation that can extrapolate, analyse, synthesise and produce reports is essential.
- 6 Don't try to move too fast.** If the process grows before the people then it swamps their capabilities, which then leads to disappointment and ultimately loss of interest, if not distrust.
- 7 Beware false participation.** Financial contributions are not participation, for example.
- 8 Build trust.** For the process to be effective, it is crucial that there is trust created between the community and the support organisation, and between different sections of the community. If there is no trust, people will disengage from the process.
- 9 Explore options.** Communities need to understand options before they can be ‘consulted’. Pilots which explore various options are an investment in the process, as these options will then be clearly understood.
- 10 Remember who is taking the risk.** The biggest risk is the risk taken by the communities to get involved in such a process. If it fails, then these unrealised expectations will undermine future developmental efforts. It can be worse than not having done anything at all.

3 SPARC: ‘The view from below’

Some principles behind community mapping

There are many different reasons why community mapping is an important tool in participatory development, and only two reasons, from an international development agency perspective why or when community mapping should not be used.

This section aims to illustrate some of the key benefits of community mapping, with a few notes of caution.

Accuracy

Communities will count and map themselves more accurately than officials could, though persuading authorities that this is the case can sometimes be a challenge. There is often concern that the poor will not be sufficiently objective in their collection of data, that there is too much opportunity for concealing the truth.

In India, when the results of a survey undertaken amongst pavement dwellers in Bombay were taken to the Maharashtra Housing and Development Authority, their first reaction of disbelief changed gradually to a non-committal acceptance. In a series of discussions, the general superiority of the data supplied by the people's enumeration was acknowledged.⁴

Solidarity

What the poor lack in power and influence as individuals, they more than make up in numbers. Community mapping is the most effective way of demonstrating those numbers, and putting the community in control, moving people from being objects of someone else's research to being instrumental in their own. Enumeration by communities is a form of turning government on its head, fulfilling the information gathering and surveying role that government plays but with a different agenda and purpose.

Consensus

Community mapping is carried out in order to build on community knowledge, and to empower communities, giving them the space to make decisions based on information that they have collected and can trust. This promotes a deeper form of democracy among civil society. Community mapping builds consensus within a community between the different stakeholders, spreading knowledge from a narrow group (community leaders, professionals, water surveyors) to a broader group in order to allow for a more active and critical civil society.

Debunking myths about poor communities

Community mapping and enumeration is a way of debunking myths about poor communities: that they are chaotic, disorganised, crime-ridden and without hope. It is generally assumed that the poor are not able to organise or improve their lives, that squatter settlements are full of people who are in some way dishonest.

Community mapping surveys show that the vast majority of residents, as in other sections of society, earn their living through hard work. The difference is that they are underpaid and lack schooling.

It is also assumed that squatter settlements are chaotic and unplanned. A mapping process can uncover the planning that is inherent in all communities, however unconventional it might be.

There is also an assumption that the poor cannot resolve their issues because they lack knowledge and funds. But it is clear that governments can also not resolve the issues of poorly serviced settlements alone. Indeed, they are frequently instrumental in preventing communities from trying to solve their problems, by making slum dwellers and squatters 'illegal' and therefore not eligible for assistance.

Partnerships between communities, government and other agencies are encouraged to develop through the process of community mapping in order to improve the understanding of why people live in the conditions that they do, and how they survive these conditions. This can then lead to solutions that are based on reality rather than myth and prejudice.

Learning

People learn most effectively by doing, not through training away from the field. The enumeration and community mapping process demystifies the survey process, teaching people what maps represent and how they are drawn, and explaining what surveys are used for. This also opens the opportunity of spreading knowledge and sharing skills within the community, based on activities that all can carry out.

Community

Community mapping builds on and helps to define the way that people are building for themselves, providing solutions for themselves. It also plays a vital role in proving residency, which can be used to protect tenure status. This information can be used to protest eviction orders or other tenure disputes that are a

4 SPARC: 'Enumeration as a tool for mobilisation of the poor'

staple of living in slum or squatter settlements. This is particularly important for communities that are either under threat of eviction, or, like pavement dwellers in India, are invisible to policy makers.

Lobbying

Community mapping can be used for lobbying purposes, improving the dialogue with the state on policy issues, or with local municipalities on practical issues. Solid information can widen the available choices, and ensures that the state is designing their projects based on reality, and not on what they would like to see. Official information is too often based on myths of chaos and ungovernability that surround slum or squatter settlements.

Community mapping in developed countries

Even in sophisticated, highly educated societies, there are significant numbers of people who live without security of tenure. Community mapping, frequently using GIS, is used successfully by these communities to strengthen their negotiating power with local authorities and local policy makers.

Community mapping is used in the USA, Canada and the UK for the same reasons that it is used in developing countries – to extend knowledge and to strengthen the voice of civil society against private concerns and state intervention (or lack thereof). It is used for a variety of reasons: to map the environment, for assessing property ownership, for preventing speculation on property, for addressing food poverty issues (in the UK), for teaching citizenship to prospective US citizens, and many other issues. One group successfully had a policy against property speculation introduced, to free up land for housing development that was otherwise standing vacant.

As with the majority of communities in developing countries, entitlement to land or housing is frequently a concern, but a more common reason for carrying out community mapping is for environmental concerns.

Community mapping in developed countries rely more upon technologies, such as GIS, than those described in developing countries, partly because both the hardware and the skills are more available, people are generally more computer literate and also because it is comparatively cheaper. It is not always used, however, and the main finding has been that there is always the danger that the technology will guide the process, rather than being used as a tool.

Solutions

Community mapping promotes the design of truly affordable, participative and sustainable solutions, which have the full commitment of all community members.

Providing a base to start from

Community mapping is instrumental in assessing existing conditions prior to carrying out work.

When not to carry out community mapping

It makes little sense to go to the trouble of carrying out a community mapping and enumeration process where there is:

- Insufficient commitment in terms of time and patience to ensure that projects that are designed for a settlement are based on community needs and aspirations and are controlled by the residents rather than by the traditional ‘donor’.
- A need or desire to deliver services now rather than social change in the long-term.



Case Studies

Community mapping was developed first in India by the Alliance of Sparc, Mahila Milan and the National Slum Dwellers Federation in 1985, and has since been taken up by other members of Slum Dwellers International (SDI). In this section there are several case studies that look at these organisations' use of this tool in order to inform practitioners about how community mapping can work.

Note that although the tool comes from one source, it is always adapted to suit the conditions of a particular country, city or community.

Cambodia: Community mapping at Basaac⁵

Local level activities throughout a city can add up to an understanding of the development needs of the entire city. Basaac is one of Phnom Penh's largest and most troubled informal settlements. Most of its 2300 families live in shacks without water supply, toilets or electricity, on land that is flooded half the year and fire-prone the other half. Because the 16 hectares of river-frontage around the settlement are of value, there have been many evictions.

But Basaac is also headquarters for the Solidarity for the Urban Poor Federation (SUPF), and has strong leaders and savings groups. In 1997, SUPF counted houses, surveyed sanitation and held their model house exhibition in the settlement. Its communities recently worked with the United Nations Centre for Human Settlements (UNCHS) to build wooden bridges in flooded areas. All this has led to increasing negotiations with municipal officials, and a move away from eviction and towards explorations of development possibilities which work for Basaac's poor and for the city.

The latest step is mapping. Government surveyors have been trying for years to make maps of Basaac, but most of them never get beyond the main road.

"When they get inside and see all the houses crowded every which way in the water, they get dizzy and give up!" said Basaac leader Noon Sum. "But we know each and every house. The government cannot draw a map like this."

The community's map-making has been assisted by an enthusiastic team of young architects from the newly-formed Urban Resource Centre. Basaac's 13 communities each produced its own map, and final drafts of these maps will eventually be joined together into one grand map.

"With this map we can explain to government clearly when we negotiate about land – how much area, how many families, what services, what areas flooded," said Noon Sum.

Vong Nov, SUPF leader in Basaac 1-A, helped map several of the communities:

"We start with large white paper and markers, laid out somewhere in the settlement. We call people together and talk about why we're doing the map. First we draw one house in the middle of the paper, working outwards from there, along the lanes, because people understand who lives next to who.

Afterwards, we take the map around to correct what we've drawn. Usually, we have to tear up the first few and start over."

Measuring a big community like Basaac with tapes takes a long time and tends to frighten people who associate measurements with eviction plans. So the team measures with pacing instead. Knowing your natural step allows very long distances to be measured with great accuracy.

"Nobody knows we're measuring. They think I'm just wandering and looking around. But in my head, I'm counting!" said Vong Nov.

Map 1: The first map drawn by the community. It is drawn right on site and is everybody's first try at getting all the lanes and everybody's houses onto the map. The scale and spatial clarity of these first maps is almost always astonishingly accurate.

Map 2: There are several more rounds of checking and measuring and each time, the map gets better and more detailed. When the community's map is ready and everybody is happy with it, the community leaders check and re-draft it at a smaller scale.

Map 3: After more checking and more consultation, the team prepares an accurately-scaled version, using city survey maps for the out-lines. On this, the community will mark house names, toilets, trees, bridges and light poles

The maps go back and forth between the community and the team – and are sharpened at every stage. Throughout this process, there's a lot of discussion and argument. Not only is a very useful and accurate map being generated, but people's understanding about their own settlement is being sharpened..

Some lessons learned

- The simplicity and effectiveness of the mapping process
- Why it is effective where professionals cannot participate
- How to get around the problem of community members being concerned about evictions
- Reiterative nature of the exercise: the process is repeated with increasing accuracy and completeness
- Variety of different uses of the maps
- How the support organisation (here the Urban Resource Centre in Phnom Penh) assists with the process, refining and clarifying, but not leading
- Importance of water and sanitation issues, always also marked on the maps

5 ACHR Newsletter, Housing by People in Asia, No. 11, April 1998

Cambodia: The Khan slum map of Phnom Penh⁶

The process of community mapping has resulted in all the khans (slums) of Phnom Penh city being mapped. The information has now been collated into an information booklet, which shows all the maps and future plans for development. It includes studies of vacant land for relocation and areas where communities are living on land (and so is not viable for development). The studies show which settlements are under threat of eviction, which settlements are organised and defines the type of land tenure that settlements have.

Having the entire city's settlements mapped assists the communities to assess which settlements can be upgraded and which need to be resettled. It provides communities with a better understanding of how the city works as a whole, how they fit into it, and what they can do to improve their status. There are future plans for mapping the city using GIS equipment, but this is still in the planning stages.

Some lessons learned

- The value of large-scale mapping processes for planning purposes, and for understanding the needs of squatter citizens in an entire city
- The importance of the support organisation to bring the work of individual communities together

Guyana: Mapping the Amerindian people⁷

The Amerindian Peoples Association (APA) is a non governmental organisation formed by Amerindians for Amerindians, who's primary focus is the rights of indigenous peoples in Guyana.

Among other projects, the APA supports a community mapping process to assist communities in preventing mining companies from working within their ancestral lands. Initially the mapping process was used to show where the traditional territories were, and to lobby government for recognition of them. While this remains the main purpose of the mapping process, communities are beginning to use community mapping for environmental purposes, particularly to influence international conservation organisations. Currently many government maps have significant inaccuracies, which leads to conflicts with other organisation's development plans.

In the APA, a mapping unit was established to provide communities with information, mapping services and training. The process begins with a series of community meetings to clarify the purpose of the mapping exercise, the data to be gathered, the time and location of exercise and to introduce the team involved.

The names of places on government maps are verified and sketch maps of the area are produced.

Following these meetings, people in the community are trained to collect the data. The mapping teams use a combination of Geographic Information System (GIS), Global Positioning System (GPS), traditional knowledge of the areas and oral history as passed on by elders through interviews and informal gatherings. The variety of information gives them a comparative advantage in local data gathering. The data are then transferred to the APA office, where draft maps are produced and sent back to the communities for verification, after which final maps are produced.

India: Byculla Pavement Dwellers Survey, Mumbai⁸

This process was undertaken by Sparc in 1985, before Mahila Milan had come into existence, and represents the first community mapping process of its kind. The survey was to be carried out amongst pavement dwellers, a constituency invisible to Bombay policy makers, threatened with eviction for the umpteenth time.

Sparc's Sheela Patel's description demonstrates the empowering and uniting nature of the community mapping process, and also the importance of this process for dispelling myths about poor communities:

"With no financial resources and very little time before the eviction date, we gathered college students and community leaders and tested a questionnaire in which we asked questions about these pavement dwellers: where did they come from? When and why had they come to the city? What work did they do here? and what did they do before in the village?"

In three months we undertook a census of about 6000 households residing in a ward and the three main arterial roads of the old city. The results were dramatic: most pavement dwellers were from the poorest districts of the country, they were landless agricultural labourers and artisans who had no property or assets in the village, they had come in 1965, over 20 years before the survey. More than half the population (above the national average) worked and yet earned less than the minimum wage. Most walked to work, so staying near the place of work was essential.

The survey did not ask 'how do you feel about' questions that reflect opinions, just collected the basic facts which demonstrate in quantifiable terms the circumstances of these people. All interviewees made sure they were present when the questions were asked, and everyone made sure the answers were accurate as it was clear that it was a representation of their reality... it was a tool through which they were talking to the rest of the city.

The report had major impacts. The most significant was on the communities, who, as a result of this exercise, now began to see themselves as a group with common needs and aspirations and began to explore the possibilities of organising themselves. They saw themselves as 'not being alone' and the empowerment that results from such an exercise needs to be stressed. They began to understand the politics for cities: if you are not counted then you are invisible and cannot ask for your entitlements."

6 Phnom Penh: An information booklet on the city's development and the settlements of the urban poor, Phnom Penh, May 2003

7 For more see: http://www.caribbeanngos.net/member_profile_pages/jl2/programs.htm.

8 Patel, Sheela, 'How can poor people benefit from research results?' SPARC, Bombay.

India: The Sparc, NSDF and MM Alliance⁹

This Alliance is a partnership between three separate organisations that work very closely together. The Society for the Promotion of Area Resource Centres (Sparc) creates partnerships between poor people and professionals to work together on issues of social justice and equity. The National Slum Dwellers Federation (NSDF) is an organisation started by slum dwellers thirty years ago to address the problems in slums, using both advocacy and mobilisation. Mahila Milan (MM) ('women together') is a federation of women's savings schemes, which grew out of Sparc. The three organisations work on different aspects of the same projects, but their interdependence means that the whole is far more than the sum of its parts. Crucial to this mapping process is a well functioning relationship between the organisations within the Alliance, based on mutual trust. Some of the processes used by the alliance are as follows:

Hut counting: When the community is visited for the first time, a large number of men and women from NSDF and Mahila Milan hold meetings with the residents and talk about themselves, their work and what they have come for. In most cases, the communities know of, or have heard of, the Federation's work, and credibility is generally easily established. To trigger the participation process the Federation leader and community residents take pieces of chalk and begin to mark each area and house door. As inhabitants start asking why this is being done, details of the project are explained to them. Very quickly the community becomes involved and suggests that criteria should be established to number the houses. By supporting a dialogue with the inhabitants about the numbering, the foundation is laid for communities to participate in addressing any future grievances or disputes concerning property rights and entitlements.

Rough mapping: Hut-counting is followed by the preparation of rough maps, working with residents. This helps the surveyors later and helps communities understand what surveys represent. This mapping also allows the completion of a community and slum profile, with details of toilets, water taps, balwadis (nursery schools), services and amenities, where they shop, and so on. This creates a direct link between the investigators and the active members of the community.

Numbering: The maps allow each house to be identified and earlier chalk numbers for each dwelling are re-done in permanent paint. Communities are informed that government and city officials will be checking on this process; ensuring accuracy is essential to establishing good faith and the credibility of the communities and those involved in undertaking the surveys.

Cadastral survey:¹⁰ With house numbers in place, surveyors can mark and measure the sites. In most settlements, community leaders, especially those individuals who feel threatened by this process or who wish to obstruct it for political or other reasons, step forward. Normally, surveyors leave if obstructed and do not attempt to tackle the situation or defuse it. Hence, NSDF or Sparc workers from the area normally accompany the surveyors.

The household survey and settlement profile: The survey begins, using the painted house numbers to identify each house. The information is fed into computers, and draft registers are returned to communities to check again and fill in missing data. Based on more accurate information emerging from the survey of houses, the settlement information is refined and updated.

Group formation: Using the registers, wherever the communities are willing, households are grouped into units of 50 and another round of data-checking is undertaken. From this stage group work begins in earnest and much of the qualitative information collection and capacity-building is done. Many female leaders take part in the household and community surveys. During this whole process the repeated interaction between Alliance staff and local people allows a rapport to develop and the inhabitants of the settlement become more knowledgeable about the issues of community control and management and how to work with government agencies. The household group size of 50 has been found to be optimal for the sharing and validation of the information and to facilitate easy communication in general.

Regrouping: This grouping of households has great importance, particularly if they are to be relocated since the groups have a critical role in organising the move and the resettlement together. Although initially households are grouped by numbers and numbers are given consecutively to households next to each other, each resident has the freedom to move from one group to another. Ultimately, these groups will be sub-units which, when they are relocated, will live next to each other. Their natural gravitation towards each other will be strengthened by the things they are assisted to do together.

Women's participation: The development of women's groups is encouraged. While men are not excluded, information sharing is encouraged between women. Communities are urged to allow women to take the lead. Later, these groups will begin savings and credit groups, start developing skills to access municipal and state government services, get involved in house and settlement design and hopefully supervise and manage the transition phase of resettlement.

Family photographs: Once rechecking is completed and registers are finalised, communities are encouraged to take family photos, creating identity cards for themselves. Along with the registers of households, they are encouraged to keep this record for themselves while the NGOs and relevant official agencies keep copies for their records.

9 Patel, Sheela, Celine d'Cruz and Sundar Burra, 'Beyond evictions in a global city: people-managed resettlement in Mumbai' Environment and Urbanisation, Vol 14 No. 1, IIED, April 2002.

10 Cadastral defines the extent, value and ownership of land for taxation purposes

Tanzania: WaterAid, mobilising local communities

In 2001, WaterAid Tanzania took the opportunity to carry out a community mapping and enumeration process with some of the communities it works with.

The process had been introduced to the WaterAid office through contact with Slum Dwellers International, and the process seemed to offer a good opportunity to mobilise local communities through gathering information on existing services. WaterAid also wanted to add to its ongoing research of the impact of the privatisation of water utility management on the poor. A community mapping process would be an interesting way of gauging the communities' knowledge of private sector participation and perhaps increasing their knowledge.

In short, through community mapping the communities WaterAid worked with would be in a better position in the future to engage with local municipalities and future private service providers. The methodology was outlined by WaterAid Tanzania, and can be found in the papers put together by Heike Glöckner, Meki Mkangi and Timothy Ndezi.¹¹

*Please see community maps on pages 22 onwards of appendices.

Some lessons learned

- This was a highly successful mobilising tool, which moved beyond the participatory techniques which WaterAid has previously used. Unfortunately, due to changes in the Dar es Salaam programme, there has been little action since the mapping process two years ago and little support available for the next steps, such as savings schemes that began as a result of it.
- Service providers, such as DAWASA, are more willing to engage with communities following this survey, and communities have successfully negotiated a bulk water supply, among other improvements.
- There was some difficulty in carrying out parts of the enumeration and mapping in some areas, due to previous interventions which have delivered nothing.
- Despite the fact that local government reform emphasizes community involvement in planning, it was difficult to get key decision makers and policy makers to attend the feedback workshops, and to engage with communities.

11 Local empowerment through community mapping for water and sanitation in Dar es Salaam, Heike Glöckner, Meki Mkangi and Timothy Ndezi, Environment and Urbanisation, Volume 16, Number 1, IIED, April 2004.

Zimbabwe: The Zimbabwe Homeless Peoples' Federation

The Zimbabwe Homeless Peoples' Federation is a member organisation of Slum Dwellers International and carries out community mapping and enumeration processes as part of its community mobilisation processes. The purpose of enumerations is threefold: to gather information in order to work with government, to let people learn about themselves by gathering their own information and to mobilise people into savings schemes. The following extract is taken from the journal 'Face to Face' and is Diana Mitlin's experience of an enumeration process in Mbare, Harare.¹²

"May 3, 1999 : The rooms in Mbare's hostel blocks open off long outside corridors with flimsy metal staircases and communal toilets at the ends ... The federation moves through the buildings, which go on as far as you can see. In the narrow corridors, small groups stand outside doorways, filling out survey questionnaires. Someone comes up, "You didn't do me – I'm in 4-D." Another invites us inside. The room is divided into two parts, everything neatly arranged, but the broken windows and peeling paint give away how the building is succumbing to age.

An unending shower of survey questions: When did you come? Who is living here? What rent do you pay? How much do you earn? Would you like to stay? What about the services? What about safety?

As each questionnaire is finished the interviewers move on. When one whole block is finished the teams gather downstairs to check the next.

Back at the federation's office, everyone waits for the survey teams to return with today's data. It's a large room, donated by the shopkeeper next-door, but looks small with so many people crowded into it. Wandering toddlers are swung up onto their mother's backs and secured with a towel, groups come in to make savings deposits. People whoop for joy when news comes that the council in Beit Bridge has offered land to a savings scheme there. One group sits around a big table, transferring data from questionnaires into ledgers, and another prepares tables for each hostel block to make it easier to tally the results later on.

Earlier, there were discussions about the need for an official report to present to the City Council and about how to tally the survey results. The obvious tool is the computer, but everybody agreed it was more important to let people work with the data first, tallying by hand, so the information comes alive for them and brings new understanding of their neighbourhood.

Everyone is amazed how well the enumeration is going. Everybody said it would be difficult, that the people here are hard, that they're not interested, that they're all crooks. When the first loans were proposed even the Mbare groups said 'not here – we cannot trust people here, they are all thieves...'

The survey has generated a lot of excitement and many people are drawn over, many questions, curious onlookers. Federation leaders spread out, explain how the savings scheme works, show passbooks and collect deposits. Many new groups are formed. The South Africans watch for a little bit, then start swapping

12 Polishing Communities : the enumeration at Mbare, Diana Mitlin, Face to Face, ACHR 2000.

songs and stories with the different groups. As dusk comes on, the voices rise in song. After an hour or so, people slowly get up to go. "Come tomorrow," another group is told, "Come to the office and deposit more savings. On Saturday we'll be back again." The songs continue as people make their way home, many with long bus-rides through the bush to resettlement camps outside Harare.'

Some lessons learned

- That trust between people exists even when it is not expected by the communities themselves. The enumeration process builds on this.
- The importance of people handling the data themselves, so that it is owned and understood, before submitting it to a computer, where people turn into numbers.
- The joy and excitement in community mobilisation.

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Anzorena, Eduardo Jorge, Selavip, *Journal of Low-income housing in Asia and the World*, available by sending a request to: proyfil@hogardecristo.cl or anzorena@aa.mbn.or.jp or is delivered to WaterAid resource centre

Websites:

Amerindian Peoples Association: www.caribbeanngos.net
www.sdn.org.gy/apa

US and UK community mapping
www.policylink.org

www.foodpovertyprojects.org.uk

www.nelrc.org

www.telus.net/cground/index

Sparc website: www.sparcindia.org

The Asian Coalition on Housing Rights website: www.achr.net

The SDI website: www.sdi.org

Appendices

Baseline survey of household for water and sanitation programme

S. No.	House No.	Street No.
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A. Personal Information

Name of household head	No of households/ family members	Less than 16 years		Above 16 years		Profession of head	Profession of females if any?
		Male	Female	Male	Female		

B. Water and sanitation information

Drinking water available		Connection of drinking water		House connected with sewer		Latrine of households		Type of latrine?	Latrine connected with	
Yes?	No	Inside	Outside	Yes	No	Inside	Outside		Sewer	Pit

C. Cleanliness and environmental

Water used for face washing		No of children washing faces daily		Solid waste collected and disposed from house			Solid waste collection and disposal system			
Supply water	Ground water	Male	Female	Daily	2-3 days	Weekly	Own	Govt	Private	Any other

D. General Information related to health

Any disabled person at home		If yes		Type of disability? <i>Choose one of the following or specify</i>	Has the family one of the following diseases? <i>Please tick and add any other</i>	How often family has to visit the doctor for medical treatment? <i>Tick one of the following</i>
Yes	No	Age	Sex			
				<ul style="list-style-type: none"> • Blindness • Physical • Mental • Deaf/dumb 	Eye infections Diphtheria Flu/cough Cholera	Daily Weekly Fortnightly Monthly Occasional

Enumeration form used in Hanover Park Land, South Africa community mapping

ENUMERATION FORM
AUGUST 2001
SURNAME:
FIRST NAME/S:
ID NUMBER:
ARE YOU A MEMBER OF THE FEDERATION?:
NAME OF YOUR SAVINGS SCHEME:
HOW LONG HAVE YOU BEEN A MEMBER OF YOUR HSS?:
HOW MUCH HAVE YOU SAVED WITH YOUR SAVINGS SCHEME?
WHERE DO YOU LIVE?:
DO YOU HAVE JOB?:
IF YES, WHAT IS IT?
DO YOU HAVE OTHER SKILLS/ TRAINING?:
IF YES, WHAT ARE THEY?:
DOES YOUR SPOUSE HAVE A JOB?:
ID NUMBER FOR YOUR SPOUSE:
WHAT IS YOUR JOINT INCOME?:
HOW MANY PEOPLE IN YOUR FAMILY?:
HOW MANY CHILDREN IN YOUR FAMILY?:
HAVE YOU APPLIED FOR A HOUSING SUBSIDY BEFORE?:
SIGNATURE:
SPOUSE'S SIGNATURE:
ENUMERATION CONDUCTED BY:
DATE:

Baseline survey form used by Anjuman Samaji Behbood (ASB) Faisalabad, Jaranwala Sanitation Project

Household questionnaire		
Name of village	House No	Date

B. Identification:			
1	Name of respondent	Electricity	
2	Male = 1, Female = 2	Drinking water	
3	Name of head of household	Sewerage	
4	Age of respondent Married / unmarried	Own/rented home	
5	Biradari/qaum/cost	Gas	
6	Education	Phone	

C. Social profile of the respondent's household								
Particulars	5yrs		6-15yrs		16-65yrs		65yrs	
	Male	Female	Male	Female	Male	Female	Male	Female
1 No. of members								
2 How many are at school								
3 How many are working								
4 Sick/disabled								
5 Do you own any land? Yes = 1 No = 2								
Type of land	Total land [acres]							
6 Canal irrigated								
7 Tube-well irrigated								
8 Barani								
9 Leases land								
10 Tenant								
11 Joint holding								

12 Do you receive cash from sale of crops? Yes = 1, No = 2 Amount RS _____

13 Own home Rented

14 Details _____

15 Do you own a motor vehicle? Yes= 1, No = 2

16 If yes, solely = 1, jointly with hh members = 2, with extended family = 3, with others, eg biradari = 4-

17 [describe] _____

18 Type of vehicle [Please circle] Saloon car Suzuki Dabba Suzuki pickup Larger pickup Van Tractor with trailer
Tractor without trailer motorcycle other [specify] _____

19 Is the vehicle a source of earning? Yes=1, no. =2

20 How _____ Approx. income Rs. per month _____

21 Do you any of the following [Please circle]

Television coloured Television B/W VCR Telephone Mobile Refrigerator Deep freezer Radio Bicycle Motor Bike

INCOME									
1 Do any household members hold jobs/ [Write amount received per month from relative category.]									
Male	Govt.	Private	Service of individual	Apprentice	Regular	Part-time	Daily wages	Pension	Piece rate
Female									
Comments									

7 Did you sell any livestock during the year? Yes=1, No=2

8 Income from livestock: Above plus dairy produce, eggs etc.

Type	Buffaloes	Cows	Goats	Sheep	Poultry	Other
9 Nos holding						
10 Income						

Socio-economic survey form used in Umfelandawonye – Sanco, Katlehong, South Africa

1. Household details

1.1 Head of household

Name:	Sex:	I.D. No.:
Postal address:		

1.2 Nature of house (circle one):

Shack Backyard shack Garage Single room Sharing room House Sharing house Other (specify):

What is the value of your house?
Maintenance or rental costs per year?
Area of house (in square metres)
No. of rooms?
Is your house (1) self-built (2) purchased (3) rented [please circle one]

1.3 Tenure security

Do you have (1) title deed (2) rental agreement (3) other form of security (4) no legal tenure [please circle one]
Have you received a housing subsidy?

1.4 Migration history	
How long have you lived in this house?	
How long have you lived in Katlehong?	
Where did you live before you came here?	
Where are you originally from?	
Have you ever been evicted?	
How many times?	
When did this happen?	

2. Household profile

Name (Start with head of household)	Age	Sex (M/F)	Wage earner / self employed / unemployed	Description of job	Salary/income	Relationship
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total household income:						
No. of people living in your house?						
No. of tenants in your house?						

3. Savings

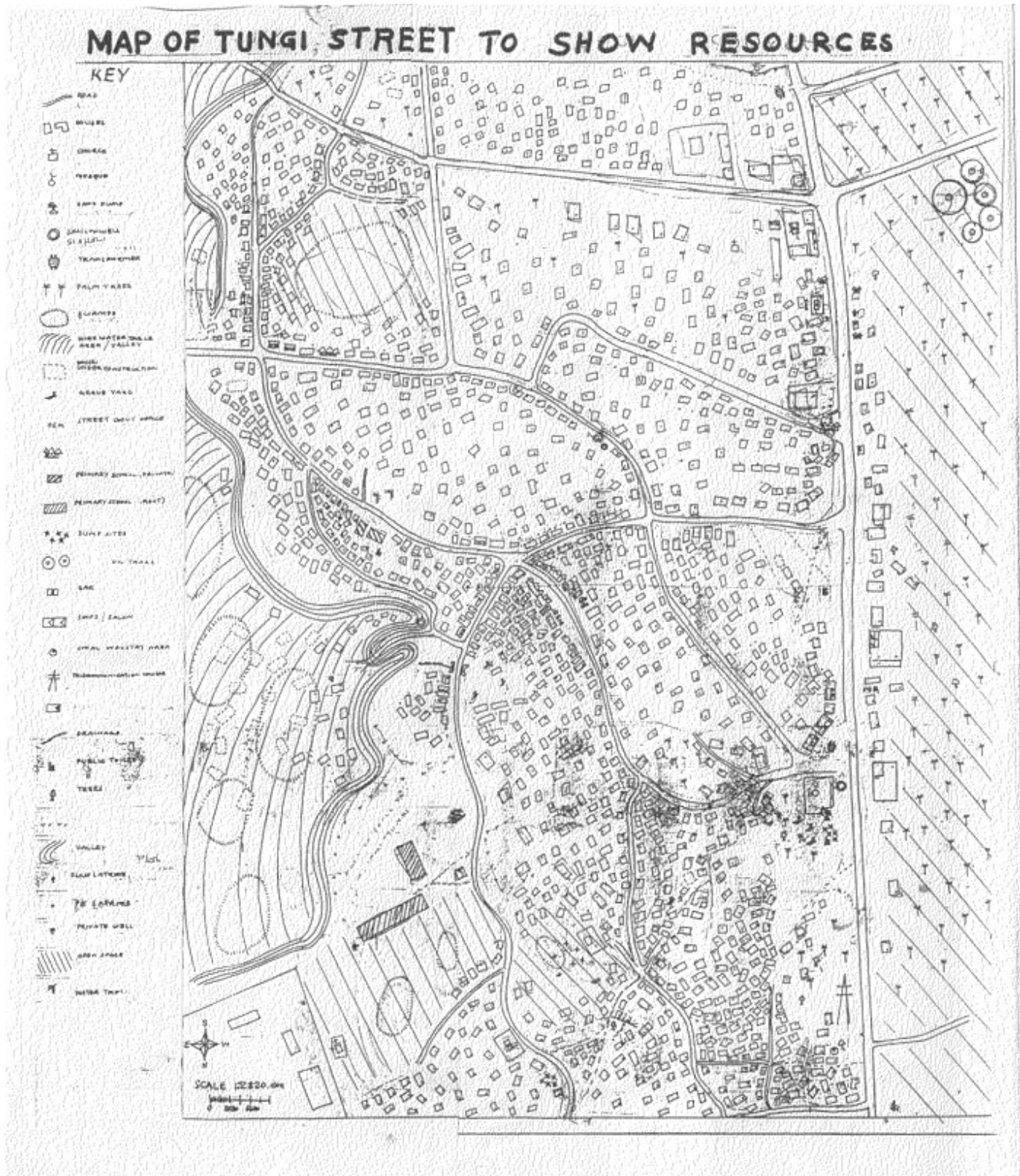
Do you save in (a) bank (b) credit union (c) savings scheme [please circle]
Have you ever taken a loan?
From where?

Survey conducted by: _____

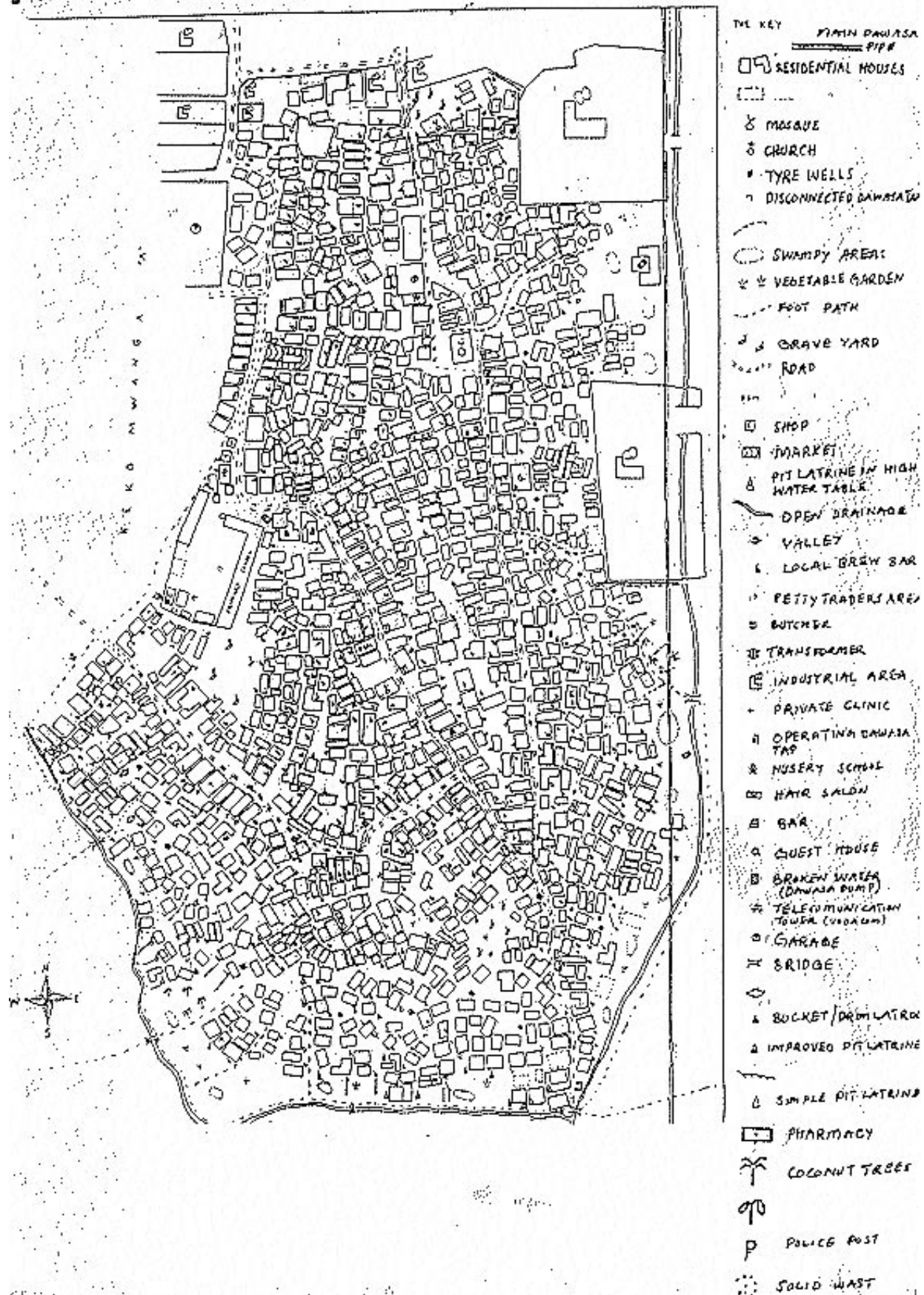
Date: _____

Attach family photo with names written at the back

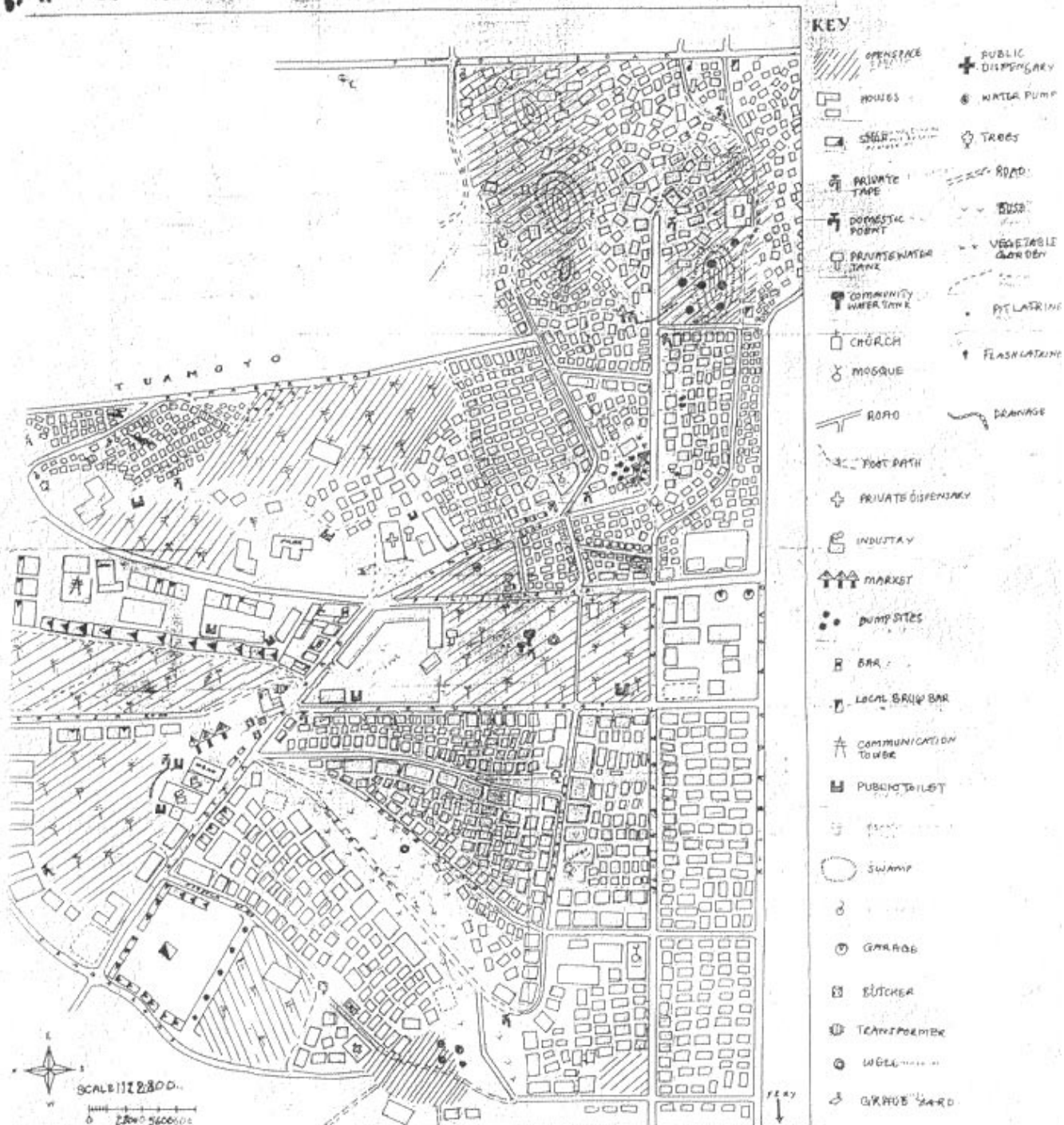
Examples of community maps from WaterAid in Dar es Salaam, Tanzania



MAP OF KEKO MWANGA B TO SHOW RESOURCES



MAP OF KIGAMBONI TO SHOW RESOURCES





WaterAid – water for life
The UK's only major charity
dedicated exclusively
to the provision of safe
domestic water, sanitation
and hygiene education to
the world's poorest people

WaterAid, Prince Consort House, 27-29 Albert Embankment, London SE1 7UB. Telephone 020 7793 4500.
UK charity registration number 288701