

PART B: PREPARATION

CHAPTER 4 AUDIT

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4.1 UNDERSTANDING YOUR TOWN'S CONTEXT AND TRENDS

An understanding of the regional context and the growth and change dynamics within the area is essential for good strategic planning.

4.1.1 The Town in Regional Context

Any effort at managing or directing the growth of informal settlement at a town-wide level, requires an appreciation of the prospects for further growth in the informal part(s) of town. In other words, will the informal parts increase, decrease or remain the same as a percentage of the town's overall makeup? Four factors strongly influence the prospect for more/less growth. The first two relate to the "attracting" potential of the town and the last two to its "absorption" potential. In analyzing these factors precision is not needed, only a rough appreciation.

4.1.1.1 Attractive Force 1: Location of the town in the Urban Hierarchy

A country's urban hierarchy is the ranking of urban areas from largest (metropolitan areas) to smallest (e.g. rural villages). The larger the town, or higher up on the hierarchy, the more likely it is to draw people from further afield, and the more in-migrants it can expect. Such migrants are also bound to be very diverse (both urban and rural, South Africa and other-nationals). The lower on the ranking it appears the smaller the number of people attracted, and those will be from the immediate vicinity. Intermediate towns (sometimes called secondary cities) make up the majority of South Africa's urban places. Such towns tend to:

- experience a moderate but steady influx of families seeking work;
- attract families from the wider region and its immediate rural areas;
- have in-migrants with substantially similar backgrounds (occupation, culture, incomes, wealth).

The larger the town and the more diverse its economy, the stronger will be its attraction for potential urbanisers.

4.1.1.2 **Attractive Force 2: Economic product to "population-share" contribution**

The extent to which migrants are attracted to your town is very strongly, yet not exclusively, determined by the difference between the town's annual contribution to the national economy and its share of national population - or the town's "wealth". For instance, if a town's contribution to national gross domestic product (GDP) is 4% while it only contains 1% of the national population, the local economy is performing very well. The signals will in time filter through and, in an effort to regain equilibrium, will result in an increase in the in-migration rate. Conversely, if the town is "poor", in-migration will be retarded, yet never stopped.

4.1.1.3 **Receiving Capacity 1: employment opportunities**

High levels of unemployment obviously discourage further urbanization. But employment opportunities that are not suited to a job seeker's background (low skills base, illiterate and agricultural) has the same effect. Failure of the local economy to adjust or respond to this need never halts influx - it merely delays it. Simultaneously, the rise of a strong informal market economy (petty trade and services) can be anticipated in and around informal areas, eventually extending along major formal movement routes and intersections.

4.1.1.4 **Receiving Capacity 2: utility infrastructure/space**

A shortage of land/space available for settlement can also retard further in-migration. Very few towns indeed in SA can claim this as a reality, so it is not a major factor. Tardiness in planning and regulating the release of available land for informal settlement also does not halt the process - it merely means the settlement pattern is not ideal. A similar logic applies for urban services. A delay in extending them merely means existing services are overloaded more, and may in times succumb to overload.

4.1.2 **Predicting settlement**

The greatest contributor to new informal settlement formation is usually in-migration. The nature of in-migration, particularly whether the source is singular or multiple, strongly influences the pattern final settlement takes. This pattern has a micro dimension (on-site shack distribution and placement) and a macro (where in town new settlements are more likely

to appear). Both can be estimated and predicted fairly well by understanding the settlement process described below.

- 4.1.2.1 Urbanization studies across the world have shown that the principal motive people have for coming to town is the search for employment. But this does not mean that they locate where employment is to be found. Instead, new arrivals find temporary residence with, or near, acquaintances, following word-of-mouth advice. They mostly also seek formal permission from local leaders. Their "first settlement" thus turns out to be in locations where there are few external threats and some minimal form of protection. This tends to be close to existing, especially the larger, informal areas, or to the "townships". Once some form of employment has been found a relocation, or "second-settlement", may follow, close to work-to the major employment centres.
- 4.1.2.2 Informal settlements, especially in their formative periods, depend heavily on existing neighbouring townships for access to potable-water, refuse collection, maybe even food and some transport. Vacant, unprotected spaces adjoining the poorest parts of the formal city are thus the most susceptible to new shack erection. These would include marginal land such as riverbanks, servitudes or low-lands and areas reserved for public open space, schools or clinics. At this point the settlement remains "dependent" or "parasitic" on the neighbouring township. This has implications for how their upgrading is treated since social links are bound to be strong.
- 4.1.2.3 Some informal settlements will, however, be "independent". Of these there are two types: those that have grown (in density and extent) to a size where they generate a dynamic of their own, and can no longer be regarded as dependent on anyone formal township; and those that have emerged suddenly in pockets of land which are visually concealed, or have been unprotected and ignored for extended periods of time. The latter kind tend to be located at some distance from the city's network of infrastructure. Again it has implications for how their upgrading is treated.

GIS systems have been used to great effect in recording the features of an informal settlement, and provide the facility to record a great deal of data regarding each property/household

4.2 BASE MAPS AND AERIAL PHOTOGRAPHY

Base maps and aerial photography are valuable tools for assessing the status of an informal settlement.

Most municipalities should have topo-cadastral sheets showing 1 metre

contours and existing buildings and engineering services. In some cases land uses and vegetation present at the time the map was made may also be shown. These maps can be reduced or enlarged to various scales to assist with the survey and design process.

However, in most cases the layout of informal settlements will be missing from these map sheets, usually because they developed only after the maps were made, or because surveying each dwelling is an extremely complex task and they are often considered to be temporary.

Even if all the information is available on a map sheet this method of depicting the layout of the buildings and the contours is often difficult to use in public participation as people are often not familiar with the conventions used to draw maps.

For this reason large scale aerial photographs are an important planning tool, particularly for functionally illiterate participants who usually find a photograph much easier to understand than a map. Aerial photographs are available in "Raster" technology which allows them to be used with "Vector" CAD programs. Thus, the aerial photograph itself can be used as a base map for engineering services allowing people to see on one document where all the various development components will be located. The aerial photograph base plans can even be used as contract documents for labour based upgrading programs by illiterate contractors and labourers.

If an aerial photograph is suitable for use as a base map and is not available they can be relatively easily made by an aerial photography company.

GIS systems have been used to great effect to record the features of informal settlements, and provide the facility to incorporate a great deal of data regarding each property/household.

4.3 PRELIMINARY SURVEY

Without an accurate picture of the number of structures and the number of people residing in an informal settlement, at a point in time, it is not possible to recognise growth, and where necessary, to stop it.

The marking of numbers on the structures (in a way that precludes easy duplication or modification) should be done at the same time that the occupants are surveyed and recorded.

In the event of an upgrading project the product of this survey may well prove to be the basis for beneficiary identification (see section 10.12). It is therefore essential that it is carried out thoroughly, accurately and

transparently and that all documentation is kept in a safe place.

This information should be checked at least once every 6 months, while the settlement should be visited at least a few times a week to monitor growth. It should be included in the duties of all officials who visit the settlement that they must monitor changes in the settlement as they go about their duties, and report these to the relevant official.

4.4 SETTLEMENT PROFILE

Once the parameters of the settlement have been established more detailed research of the community can be undertaken. It is essential to obtain an understanding of the human content of a settlement. There are, however, degrees to which this can be attempted. Surveys may range from superficial to comprehensive. The following factors should be used to help determine what kind of survey should be undertaken at any point of time:

- What information is indispensable, what would be essential for strategic planning, and what would be just helpful and interesting
- How much time is available
- What resources are available in terms of expertise for preparing a survey, interviewers and the funds to pay them
- How much community support and participation can be harnessed
- To what extent a survey could raise unrealistic expectations within the community that would then be difficult to manage

The priority is usually simply to record the names and ID numbers of all residents, on a *per dwelling* basis. This should be done without any delay - in order to define the target population. Any surveys can then be linked to that base data. Information on this process is given in the "Incorporation" section of the handbook - Chapter 7.

A socio-economic survey can provide a broad range of qualitative data that can be very useful in planning at different stages in the process.

Section 4.12 of this chapter provides ideas of what can be included in such a survey. Remember that a survey can be tailor-made to the circumstances. There could, for example, be an initial pilot survey that obtains basic indicators, followed by one or more surveys that yield more depth and breadth of information. The resultant database could be used as a resource for planning, allocation of resources, prioritising, fund-raising and a variety of other functions.

The conducting of a survey can also provide a valuable relationship building opportunity between the community and the project team.

4.5 SETTLEMENT PARAMETERS

The audit is largely concerned with information on the community itself and qualitative aspects of the settlement. Settlement parameters refer to the physical and quantitative aspects of the settlement that must be evaluated before deciding on the actual development path to be followed.

4.5.1. Land Ownership

The basic question is whether the land on which the settlement stands is in private or public ownership.

Although land ownership does not affect the physical constraints facing the upgrade of an informal settlement it does have a legal impact. If land is in public ownership and it is decided that from all other aspects the settlement should remain in its current position then the land does not have to be purchased on the open market. However, there may be a complex process of inter-departmental transfers that have to be undertaken if the land is not registered in the name of the department that will be facilitating the upgrade program. It may also be necessary to give communal or individual title to residents to enable them to use the land as collateral or raised development finance or stimulate buying and selling in a secondary housing market. This will require transferring the land into a trust or other vehicle which can assume fiduciary rights and responsibilities.

If an informal settlement is located on privately-owned land it is the responsibility of the owner to provide basic infrastructure. Should the owner fail to do so, and if the settlement is declared a health risk, the local authority has authority in terms of the Health Act (see 1.5.2.4) to install services at the landlord's expense. The local authority would also have the option to expropriate the land. Another option is for the local authority to make some services available on the closest publicly-owned land.

In circumstances where there are many informal settlements requiring attention those that are on private land tend to be given the lowest priority.

4.5.2. Natural Environment

The impact on the natural environment of upgrading the settlement is a key concern. In some ways informal settlements have less impact on the natural environment than conventional townships. For example, there is very little impact on the topography because there are no earthworks to speak of. This can have positive spin-offs in that micro-climate situations such as sheltered areas and dunes are preserved. On the other hand lack of sanitation and energy sources can negatively impact on water

quality and surrounding vegetation.

4.5.2.1 **Geology and soils**

In-situ upgrading of informal settlements implies their remaining in their current location in the long term. This can only occur on ground that is able to support the installation of services and the construction of permanent buildings. Therefore, the founding conditions and bearing capacities of the ground need to be assessed. It should be noted that single-storey light-weight buildings can be supported on relatively unstable ground such as capping of tip sites or poorly consolidated fill. There are also non-conventional building technologies that allow permanent buildings to be constructed in areas where conventional foundations may not be sufficient. It is, however, important that the ground is sufficiently stable to prevent breakages in pipe networks.

The agricultural potential of the ground should also be considered. In thinking ahead, it may not be wise to establish a settlement on ground that could be better used for growing crops and vegetables, or it may be possible to leave open spaces for use by the community for food production.

4.5.2.2 **Climate**

The local micro-climate has a great impact on the quality of life in a housing settlement. The direction of the rain and prevailing wind and the impact of the sun can be managed if these aspects are taken into account. It is notable in informal settlements that, over time, residents may make adjustments to buildings and streets and, where possible, plant trees to minimise the impacts of the climate.

The directions of rain, wind and sun should be shown on plans so that, where appropriate, streets can be orientated perpendicular rather than parallel to the prevailing wind direction. Space for tree planting can be left on the north side of streets and open spaces. Public transport shelters and community buildings can be orientated and designed so as to minimise the impact of the climate.

4.5.2.3 **Hydrology**

Ground water tables and surface flow patterns often have considerable impact on an informal settlement. Informal settlements are often constructed in marginal areas such as floodplains, and those parts of an urban area prone to flooding during rainy months. These areas were previously not developed for formal townships and thus left vacant, thus making them targets for informal settlements, particularly in the dry season.

1:50 and 1:100 year floodplains should be mapped. Dwellings within 1:50 year flood lines should not be consolidated but rather encouraged to

move. This land can be used for playing fields, food gardening and other open space needs of the community. Because of excessive flooding in recent years there are moves to extend the development setback line to the 1:100 year flood line. It should be noted that this does not necessarily imply a doubling of the area under the flood-line. This depends on the steepness of the river banks and the volume of water held within them. If river banks are steep the 1:100 year flood line may only be a few metres further from the centre line of the river than the 1:50 year flood line.

Even if the informal settlement is far from a river flood line stormwater implications should be carefully understood. Informal settlements may be subject to localized flooding. If it is not possible to create platforms to keep dwelling unit floor levels out of the water then the settlements should not be consolidated. Road and path ways may be required to act as overland stormwater channels depending on how they are aligned with the fall of the land. Informal dwellings blocking such overland stormwater channels should be relocated.

4.5.2.4 **Topography**

The topography of an informal settlement should be mapped using 1 meter contour intervals. These will indicate the hills and valleys within the settlement and where there might be drainage problems.

An advantage of informal settlements is that they are generally better able to incorporate the existing topography in their upgrading. Although this pattern may be more complex than, for example, the reshaping of the contours that tends to be done with new development projects (greenfields projects) on the Cape Flats, it often holds many micro-climate advantages. For example, the sheltered areas in the slack areas between dunes are usually much warmer in winter and cooler in summer than the exposed crests. These areas are destroyed when the dunes are removed. The incremental nature of service installation in informal settlements is far better able to cope with the greater variation of the landscape than a single phase "greenfields" project.

4.5.2.5 **Vegetation**

All municipalities in South Africa now subscribe to Agenda 21 principles, some of which include the need to preserve bio-diversity. This has also been adopted as a policy by the City of Cape Town. This requires that important areas of vegetation are mapped and where possible retained for open space and environmental education purposes.

There may also be mature trees which can provide shade and a sense of quality to what might otherwise be a rather bleak and inhospitable environment. If these opportunities are identified in advance it may be possible to plan around them and so ensure that they are retained. Obviously, safety aspects must be considered. Old or diseased trees that

could prove a danger to property or life should be identified and removed.

4.5.3 Environmental Impact Assessment

In most instances an environmental impact assessment will be necessary in terms of Section 22 of the Regulations pertaining to the Environmental Conservation Act (see 1.5.2.8). This will require a broad range of ecological and social criteria to be assessed.

The social criteria will mainly relate to ensuring that there has been adequate public participation in the process.

The ecological criteria will be concerned with ensuring that the impact of the settlement on the natural environment is minimized in both the planning and design and the ensuing operational stages. Particular attention must be paid to:

- Enhancing bio-diversity (preservation of indigenous vegetation where possible)
- Minimizing impact on water quality and supplies through river setback lines and appropriate sanitation
- Reducing air pollution through the use of renewable or non-polluting energy resources

Previously it was possible to be exempted from this process if an application was deemed to have negligible impact. However, this policy is currently being reviewed.

The Record of Decision issued by the authority competent to act in terms of the legislation completes the environmental impact assessment process. This must be in place before planning decisions can be finalized.

4.5.4 Planning

This section relates to the human settlement and urban management aspects of an informal settlement upgrading project. Most of the information should be depicted on maps. Where this is not appropriate it can be described in text.

4.5.4.1 Description of settlement

A brief description of the nature and size of the settlement is required. This will mention its history and who comprises the community as well as its setting and regional context. The economic basis of the settlement's

residents should also be mentioned. This description should serve as a brief introduction to the nature of the settlement that can be used in press releases and council reports.

4.5.4.2 Surrounding land usage and zoning

Activities in and around the informal settlement should be described including nearby industrial, commercial and residential development. The socio-economic characteristics of the surrounding residential development must be understood so that potential conflicts can be identified. Informal settlements often raise issues of socio-economic interface, particularly in South Africa's context where different groups have been separated for so long by apartheid and such an important store is set on the character of the surrounding neighbourhood when valuing properties.

The surrounding zoning as well as that of the site of the informal settlements should also be identified (see 7.2). Zoning is the primary tool for development control in South Africa. It is also the only level of land use control that determines real rights of property, in other words, what the property may actually be used for.

4.5.4.3 Transportation Access

Access points, (intersections, bus stops, drop off zones and rail stations), to the surrounding road and rail infrastructure should be identified. This is crucial as most residents in informal settlements are dependent on some kind of transport to gain access to the local informal or formal economy.

4.5.4.4 Location of community facilities and employment

The nearest community facilities (schools, creches, clinics, hospitals, halls) and employment areas should be located and their distances in time and kilometers should be mapped.

This exercise should include informal and formal opportunities and facilities.

4.5.4.5 Planning and development policy

The local authority's planning and development policy for the land on which the informal settlement is situated should be assessed. If the settlement occupies a piece of land vital to achieving some overarching city development goal or is the site of an important link in the public open space, transportation or services system then it may need to be relocated.

However, there should also be flexibility in applying structure plan or zoning criteria. For example, if the settlement occupies land designated for industrial or commercial use it may be acceptable to rezone this land to accommodate the settlement. Older structure plans, and particularly

zoning schemes, were designed and implemented in an era that was governed, firstly, by apartheid and the separation of race groups and, secondly, by modernist town planning which promoted the separation of different urban activities. These ideas are currently being revised as they do not promote the integration and efficient operation of towns and cities. Informal settlements may represent a more rational response to the opportunities offered by a town or city because they locate, not according to the designations of a zoning scheme, but according to the functional needs of the residents. (See also 7.2)

4.5.4.6 **Densities**

Densities are calculated by dividing the number of units/population/number of dwelling units/building area, by the area of the site under consideration. Quantitatively derived densities can be used as qualitative indicators.

Densities are an important indicator of a number of factors within the settlements such as:

- efficient use of land
- convenient access within the settlement
- ability to support small businesses, public transport and community facilities.

The main density indicators are defined as follows:

Net dwelling units per hectare - density of a settlement taking into account area dedicated to dwellings only, e.g. the plots on which they stand. Net densities will usually be higher than gross densities;

Gross dwelling units per hectare - number of dwellings taking into account total area of settlement including roads, schools, business areas, parks, etc but not the area of metropolitan wide facilities such as larger river corridors, metropolitan sports complexes and other external facilities.

Usually an area greater than 1 km² (1000m x 1000m) should be used when calculating gross densities.

4.5.5 **Engineering**

There are two main aspects to assessing engineering services in the audit phase.

4.5.5.1 **Existing services**

The first relates to existing services. An informal settlement may already have some services installed, particularly water and sanitation, although the latter may only be temporary, e.g. portable chemical toilets. There may also be electrical services and certain roads may have been improved.

Where possible existing infrastructure should be incorporated into new proposals so as to save repeating the investment.

4.5.5.2 Availability of bulk services

The second is the availability of bulk services. These refer to water, sewerage, stormwater, electricity and telephone supplies to the edge of the settlement in a form suitable for domestic use. For example, high tension power lines adjacent to a site are no use unless there is a step-down transformer reducing the power to usable levels.

4.6 NEEDS

The opportunity should be taken to incorporate a needs analysis in the socio-economic survey. It may be useful to have this in the beginning of the survey with the socio-economic questions at the end. People are usually more open about their needs than their personal details. Structuring the survey in this sequence can help to ensure better answers to the socio-economic questions, especially those on income.

Always recognize the danger that a survey may raise expectations within the community.

A simple question within a survey can ask people to list and prioritise their needs. Care should be taken to ensure that people distinguish between household needs and community needs. Separate questions should be asked for each.

It should be noted that the community is not the only determinant of needs. There are two other important parties:

Officials should participate as they are often aware of the underlying causes giving rise to problems experienced by the public. For example, there may be problems with low water pressures at certain times of the day, which might not seem much of a problem. However, the officials may know that this is shortly to become a major problem and a large piece of infrastructure such as a new pipe-line or water reservoir is required. The community will not necessarily identify the need for a new piece of bulk infrastructure.

Secondly, the requirements of legislation should also be taken into account. There are a number of basic requirements, for example, minimum standards of access to water and sanitation, safety protection of

electricity supplies, that must be complied with. These will be known to the official taking part in upgrading projects.

4.7 PERCEPTIONS

It is important to realize that the various stakeholders in an upgrading project come from many different starting points. An effort must be made to understand the perceptions and perspectives of the community, officials, neighbouring communities and any other stakeholders.

The existence of these different positions could form the basis of much conflict around informal settlement upgrading.

The first step to resolving potential conflict is to ensure that all stakeholder groups are involved in the process (see Ch. 3).

The second is to invest time in understanding the positions, objectives and constraints of the different parties. It is always worth making the effort to understand each other. If this becomes difficult it may be advisable to involve an independent facilitator to help establish a common platform, upon which progress can be made (see 5.3.4, 7.3 and 7.4).

4.8 OBLIGATIONS

As people (in urban areas) live closer to each other, so their behaviour impinges more on their neighbours. As a result obligations are created which express what role residents and local government must each play toward each other. These obligations simply commitments that need to be explicit. They will have consequences such as matters that need to be addressed in “resident educational brochures”, in budgeting for operating costs by local government, or in the need for by-laws to address excessive noise.

It is advisable to reflect upon these obligations and their implications in the “audit” process presented in this chapter.

4.8.1 Residents’ Obligations

4.8.1.1 To other residents

- to use their property for residential purposes, unless there is neighbourhood agreement for another use (eg a burial parlour)
- to limit their coverage of the plot, and leave space between house and boundary as directed by the local authority (to prevent fires)

- spreading)
- to limit the number of stories they build (so that neighbours can also get light, and direct sunlight)
- to limit number and kind of domestic pets and (farm) animals to that allowed by the local authority

4.8.1.2 To the local authority

- to accept the rules and regulations from the local government, as being in the best interest of the greater good
- to find out what rules and regulations apply in the area where they live
- to pay for services received at the municipality's offices
- to follow proper procedures before building on their residential plot
- to use the wastewater system (toilet and manholes) only for wastewater (e.g. not for dead animals)
- to use refuse containers (plastic bags, bins, skips) for specified items of refuse (not for hardened concrete)
- to report local problems (eg leaking water pipe, hydrant) to the nearest municipal office
- to use electricity supplied to each dwelling for that dwelling only.

4.8.2 Local Authority Obligations

4.8.2.1 Regarding the residents' plots

- to ensure that each plot is used/developed for the purpose and in the manner, that have been agreed upon with the community
- to ensure that each plot has access to those services (water, electricity, wastewater removal, refuse removal) that are available to the broader community.

4.8.2.2 Regarding public access

- to ensure that reasonable public access is available to each plot
- to ensure that emergency vehicles are able to proceed to within a specified distance from each plot
- to ensure that proper maintenance is provided to the access route and the pipes, overheads and poles located in the access reserve

4.8.2.3 Regarding vacant land

- to ensure that sufficient land has been provided for non-residential purposes (ie schools, public open spaces, shop, church etc.)
- to ensure that land reserved for other uses is kept in good order until finally developed
- to ensure that non-residential sites are allocated in a manner that combines community support and the requirements of the developer.

4.8.2.4 **Regarding social services**

- to ensure that the community has reasonable access to social services such as libraries, community centres, clinics
- to ensure that the fire department and other emergency vehicles (ambulance) have access to within a reasonable distance of each plot.

4.8.2.5 **Regarding trading services**

- to ensure that each plot has access to water and electricity
- to ensure that each plot has a unique address so that mail can be sent to and received by each family
- to ensure that each community has access to an office where accounts can be paid/queried.

4.8.2.6 **Regarding training**

- to ensure that each community can be linked with areas of economic activity, and with institutions which provide training and empowerment programmes.

4.9 **OPPORTUNITIES**

Within an urban area or town opportunities are greater than within a rural area because of the greater range of resources available in close proximity and the creativity that flows from social interaction.

Conversely, opportunities are limited by the fact that each person/family should not exercise their “opportunities” in a way that impinges on the “opportunities” of another. (For example : one person cannot choose to build on vacant land, when that land is owned by another).

It can therefore be helpful to consider opportunities within the context of the “audit” process because it can stimulate perspectives that can assist in strategic planning.

4.9.1 **Opportunities for Resident on Their Own Plots**

- to build a house suited to their needs (within the limits of the approved plan).
- to create a “home industry” to raise income, subject to the guidelines set by the local authority.
- to sell their plot with house on it, should they wish to move to another plot or suburb (a plot may only be sold by its owner).

4.9.2 **Opportunities for Resident on Public Land**

- to beautify and maintain the verge outside their plot (between their boundary and the edge of the road surface).
- to apply to lease land that is available for community purposes (eg for parking vehicles, for growing vegetables). This will require the approval of the relevant authority.

4.9.3 Opportunities for Local Authority on Public Land

- to resolve that capital projects should be constructed on public land (eg transport interchange, playground, parking area, library, civic hall, sports field, detention pond), after discussion with the community.
- to resolve how the operating costs and the management of the project will be handled, after discussion with the community (the management and maintenance could be undertaken solely by the local authority, or it could be shared with an NGO or Civic group).

4.9.4 Opportunities for the Local Authority on Private Land

- to enable/facilitate the owner to achieve the best development and use possible within the zoning and building regulations for that site.
- to assist the owner in changing the zoning and regulations for the site, where this is not injurious to the neighbours.

4.9.5 Opportunities for the Local Authority on Land that is Zoned / Available for Other Uses

- to advertise the land for development.
- to ensure that the land is actually developed, within stipulated time periods.
- to ensure that land is re-advertised if not developed through the first process.
- to have the land re-zoned to a more practical use.

4.9.6 Opportunities for Entrepreneur on Private Land

- to assess what development could bring the greatest benefits and services to the local community.
- to approach the local authority to consider re-zoning.
- to invest in private developments (or on partnership basis) to bring benefits to the community and return to the investor.

4.9.7 Opportunities for entrepreneur on land owned by the local authority

- to assess what development could bring benefits and services to the local community.
- to approach the local authority to enter a public private partnership for the development.
- to obtain approval to undertake the project.

4.10 CONSTRAINTS

4.10.1 Competition Between Areas for Attention

There are generally a range of areas or suburbs that need attention: perhaps several informal settlements within the local authority need upgrading. Each settlement may be at a different level of development.

One settlement may require basic services, another may need more toilet facilities; another is demanding a community centre or a sports field. For another, a clinic is their priority. A particular community may have been promised new serviced plots on another site, but there have been delays in the acquisition of the land by the local authority. Two settlements may have similar needs, but the representatives of one make louder protestations than the other.

Normally all problems cannot be dealt with at the same time. A way must be found to prioritise each project, or each part of the project. It is also important to inform each community what is being done, and where they are on the programme of intended actions. Because circumstances change, the informing is an ongoing activity.

4.10.2 Limited funds

In the light of the great needs in informal settlements, there is always likely to be an inadequate supply of funds.

Steps should be taken to obtain from wherever possible additional funds, especially in the form of grants - which are not repayable. Attempts to leverage additional funds and investments from private sources have had little success.

The aims must be to maximise the availability of funds and to focus upon those projects or parts of projects which are most critical to address. The establishment of principles within each local authority will assist in identifying the most critical projects to prioritise.

In a dynamic environment, this balancing of limited funds with priority projects is an ongoing exercise.

4.10.3 Limited Staff Resources

In many local authorities, the problem may be that there are just not enough personnel.

In such a case, appeals for assistance could possibly be made to neighbouring local authorities or, in the last resort, even to the Provincial Housing Department. Where the lack of resources is in a wider sense, there are different options.

There are consultants who are experienced in the area of informal settlement analysis, and upgrading. There are also university departments and technical college departments who may be able to make an extremely positive input into this area of urban development. You could contact the Provincial Housing Department in this regard - see details in Chapter 1.

The possibility also exists that local residents and students can be used to do specific units of work to contribute to the overall project. Surveys of existing residents and their socio-economic details have been done using this procedure. A standard form used for survey is attached, as an example.

However, it may be that there are sufficient personnel within the local authority, but not enough of them are being deployed in informal settlements. If there is a "staff champion" for informal settlement upgrading, it should be possible to overcome the problem of limited staff resources by that person appealing for an allocation of personnel that matches the local authority's commitment to address informal settlement issues.

4.10.4 Difficulties in Reaching Agreement (see also 7.4)

Consultation is a constitutional requirement, but agreement can sometimes be difficult to achieve. It is thus essential to address the problems of informal settlements with stated goals, clear guidelines, but with a flexibility in finding a compromised implementation strategy and process that can be "bought-into" by the residents.

The aim is to try and reach agreement between Council (staff predominantly) and the community (leadership primarily). Agreement has to be within Housing Policy (National and Provincial) and Council policy as well. It is also relevant that agreement about the housing development or upgrading proposals need to be reached within an agreed time period.

Where there are difficulties in reaching agreement, certain approaches

(individually and/or collectively) can be attempted.

- Focus on principles for the development, not differences between individuals/groups.
- Clarify and seek agreement on the parameters, working down to the details.
- Use a facilitator of the same culture as the community.
- Identify whether there are causes of local frustration that can be positively resolved (e.g. better waste removal services).
- Where helpful, form a joint working group to address specific needs (eg resolve conflict between who should be beneficiaries of phase one of proposed development).
- If needed, arrange a leaflet to go to the whole community to inform them of the situation (or the blockage to progress).
- If there is a small minority who continue to block progress, then strategize to proceed without them (and inform the community about this).

Eventually it may be necessary to set deadlines for agreement or compromise to be reached, and if this is not possible, to put the project in abeyance for a period.

The local politicians should be involved in the process from the start, so that they share ownership and are then able to help resolve the areas of dispute.

4.10.5 Land Ownership and Servitudes

A local authority may be constrained because an informal settlement has grown or exists on privately-owned land, or within a servitude. This may not be upgraded by the local authority without first acquiring the land or the right to develop the land.

Whether or not the land is eventually acquired, the local authority should recognise that the residents are part of the town/city population.

Where servitudes exist to protect an existing service (underground or overground), provision must be made for the community within the servitude to move. These residents should be informed as soon as possible that they will have to move, even if the date of moving may not yet have been established. The more hazardous the services (eg power lines), the more urgently should moving be planned.

Informal settlements on private land, which are often a result of a 'land invasion', can be a major problem. In the first instance, only the landowner has the right to take action (see Ch. 8). The local authority can

assume responsibility by buying or expropriating the land. Or the local authority can require the owner to provide essential services by serving a Section 27 Notice in terms of the Health Act (see 1.5.2.4). Whatever strategy is adopted the local authority is going to be far more able to address the issues than a landowner, and should accept responsibility sooner rather than later, by which time the problems may be extremely difficult to solve.

4.10.6 Limited Additional Land

There are only two usual options where there is limited additional land. Move outward on a horizontal basis, or build upward at greater densities. An alternative is to decrease plot size (down to say 80m²), which in many areas (of Cape Town) has already been done.

The larger the local authority, the more important it is to ensure what environmental or agricultural areas (or mineral-bearing ground) should be preserved. Then decisions can be taken (with the community) whether they have preference for “spread or high-rise”.

At present the Housing Subsidy is inadequate to finance high-rise, high density housing, so the acquisition of additional land is likely to be essential. This should be planned and strategised before it is occupied illegally. It is preferred to plan the direction of growth for the town/city, rather than let it happen by illegal activities. (see 12.1-3)

4.10.7 Lack of Political Will

This can occur at any time, but is more likely when elections are imminent. The officials should recognise this, and take appropriate steps in time.

The consequence of political inaction should be reported to the Council. This will include the difficulties staff face when trying to serve the community with their hands tied by lack of decision-making at political level.

Where there are direct or indirect costs associated with this lack of will, this needs to be spelt out so that the “costs of inaction” can be clear for all to see.

4.11 RESOURCES

4.11.1 Resources of the Residents

Residents of informal settlements have many resources to offer. An agreement should be reached at an early stage that all parties will contribute in whatever way they can to improve the quality of life, and that each party will respect the functions and responsibilities of the others.

With appropriate motivation, residents would be able to contribute their savings, their materials, their creativity, initiative and energy towards the upgrading of their settlements. One of the keys would seem to be ownership. When families have secure tenure and a street address, their attitude towards contributing their resources invariably changes.

4.11.2 Resources of the Local Authority

A critical question to ask is : what resources can the local authority contribute to informal settlements so that the residents start to feel that they are an integral part of the town/city?

This could include:

- planning for permanence
- planning for upgrading in phases
- structuring proper access ways and addresses
- planning access to social services
- facilitating interaction between the community and the local authority
- keeping communities informed of the plans made and steps to be taken

What is needed for this to happen?

- allocation of the required technical and financial resources
- appointment of facilitator to provide link with the community
- production of pamphlets or leaflets
- budgeting and spending 'phase one' funds for essential services

4.11.3 Resources of the Province

The Province provides finance for the creation of housing in terms of the Housing Code published by the National Department of Housing.

4.12 ASOCIO-ECONOMICSURVEY

A socio-economic survey would normally be administered via

questionnaires for each and every household which are presented verbally by a trained interviewer, who records the responses in a standard format. If a sample or indicator survey is required the target population would be reduced, and might even be interviewed through group discussions.

Relevant components of a survey are represented below:

4.12.1 Demographic Context

4.12.1.1 Age and gender

These questions will reveal the age/sex ratios of households and provide information on numbers of single woman head of households.

4.12.1.2 Household composition

The age/sex information will also assist with calculating dependency ratios (number of children and retirees compared to economically active), presence of men, etc.

It is also important to establish the exact number of households and the presence of lodgers within a dwelling. It should not be assumed that one dwelling equals one household or one family. There are many examples of projects where lodgers were not accounted for at the beginning of a project and then appeared, as if from nowhere, with demands for housing in the closing stages. It should also be recognised that it is not unusual for lodging to increase as outsiders seek to be included in the beneficiary list for a project.

One of the advantages of the in-situ approach is that the problem of accommodating lodgers is avoided to some extent because fewer people have to move. The existing accommodation arrangements can continue largely uninterrupted by the development process.

4.12.1.3 Place and Year of Origin

The survey is a good opportunity to investigate migration trends and to understand to what extent residents consider themselves as permanent migrants or temporary sojourners. This has a bearing on the nature of housing they are seeking. People who intend to only be in the city for a few years to earn as much money as possible tend to have considerably reduced needs in terms of tenure, building materials and infrastructure service levels (and funds that they are prepared to invest), compared to those whose see themselves staying permanently in the city.

4.12.2 Economic and Spatial Linkages

Type of employment
Place of employment
Income
Expenditure
Shopping patterns

Answers to these questions will reveal the economic fundamentals of the community, particularly with reference to affordability. Aggregating income levels and expenditure patterns will reveal the level of effective demand in the community as a whole and the extent to which rates, rents and service payments will be affordable.

It is extremely important to accurately tailor housing and service standards to the actual levels that can be afforded if the accumulation of arrears in payments for service charges are to be avoided. Again, in-situ upgrading offers considerable advantages as much of the expenditure on shelter will have already been completed. Providing communal rather than individual services in the early stages of a project will also lower costs.

Comparison between income and expenditure responses will allow the accuracy of responses to be checked.

Knowledge of where most people work and shop provides insight into the long term viability of the settlement and the extent to which employment and shopping facilities are required.

4.12.3 Education and Life Skills

Literacy levels
Level of school attendance
Level of education attained
Occupation/skills

The survey provides an opportunity to obtain information on levels of education and life skills. While information on education may not be of immediate use to the development process this information is important for community economic and social development projects, particularly in the long term consolidation phase that will follow initial upgrading projects. This information will also help to assess the need for schools and adult education and training facilities and what spatial provisions should be made to accommodate these activities.

Numbers of children in school can also be cross-checked against the number of children of school going age from the age/sex data to see to what extent children are actually in school.

4.12.4 Housing and Urban Environment

This section analyses the physical conditions of both the settlement itself and its surrounding urban environment. Much of this analysis can be done from maps and aerial photographs

4.12.4.1 Area and rooms per dwelling

When related to data on the numbers of people per household this information will reveal levels of overcrowding and space allocations per person. Generally informal dwellings tend to have lower levels of overcrowding as they are so much easier to extend and adapt than formal dwellings.

4.12.4.2 Tenure and any rents or other informal payments

The desired form of tenure should be identified, i.e. rental or freehold. This is likely to vary according to levels of affordability and the extent to which people see themselves as long term residents in the area. If possible, efforts should also be made to establish current conditions of tenure. For example, some members of the household may be lodgers paying rent to the head of household. The head of household may, in turn, be paying some kind of rent to a local organizing committee.

4.12.4.3 Cost and type of building construction

Although informal dwellings are often made of “temporary” materials these, nevertheless, have had money spent on them. The cost of dwellings in an informal settlement represents a considerable investment when added together. These figures will give an indication of the level of effective economic demand and affordability within the settlement. They also give an idea of the opportunity cost of demolishing and rebuilding dwellings elsewhere.

Assessing the type of building materials gives an idea of what materials are available in the region. This may vary from timber off-cuts near sawmills to wood frame and corrugated iron construction in the cities. The degree of fire hazard can also be assessed.

4.12.4.4 Area of formal/informal plots around dwellings

Assessing the area of space demarcated for a household's personal use around a dwelling indicates a *de facto* plot size. Although these are often found to be much lower than in formal low income housing areas, where the plot size is usually determined by policy, they can be used as an indication of a minimum below which no dwellings should be permitted. Surveys in different countries, including South Africa, have found this minimum to average approximately 50m². Such a figure, derived in consultation with the community, can be used as one of the bases for assessing which dwelling units should remain and which should be

moved.

4.12.4.5 Higher order employment and shopping opportunities within a settlement

These activities are extremely important to the viability of the community, but are usually also very vulnerable to the disruptions that often accompany upgrading programs. Their locations should be mapped so that they can be accommodated wherever possible.

4.12.4.6 Available open space within settlement

Healthy communities require open space for recreation. However, such space is often at a premium particularly during short term emergencies and so they tend to be occupied. While experience has shown that communities can often make do with less space than is required in terms of many town planning schemes and land use guidelines, a minimum of land should still be set aside. This could range from between 10% and 20% of the total land area and should include land for recreational and sport purposes. More space may be required for ecological requirements, e.g. river corridors, important indigenous vegetation concentrations, steep slopes, etc. If the audit reveals less space available than outlined above then dwellings may have to be relocated.

4.12.4.7 Distance in time and kilometers from work, shopping and recreation facilities

When combined with information on place of work and shopping, information on distances and time shows how the settlement fits in with the surrounding area and how the settlement should be planned to optimize external access. For example, public transport interchanges combined with business opportunities may be required on the fringe or within the settlement to maximize external access. These interchanges may also require the relocation of dwellings or may provide an opportunity for the conversion of those dwellings to take advantage of increased economic potential.

4.12.4.8 Degree of urban integration

It is worth assessing to what extent the settlement is or can be self-contained. The degree to which a settlement can contain a full range of facilities depends upon the size of its population and the amount of space available to create such projects. For example, the Department of Education will usually only consider building a primary school if there are 1 000 - 1 500 households - and if the necessary land is available. Secondary schools are usually only justified when there is about twice that number of households. In reality, therefore, it is seldom possible to create a fully integrated self-contained informal settlement - it makes more sense to consider how the settlement integrates with surrounding areas, and how the benefit of that can be optimised.

