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Sustainable Human Settlements – Challenges for CSD [1]

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1. CSD – THE BACKGROUND

The overall goal of the CSD's work on human settlements is to achieve significant improvements in the living conditions of the poorest population groups, in particular slum inhabitants, by the year 2020. The goal is also described as addressing the needs of the poorest 100 million people.

This requires initially, putting together an overview and analysis of needs, technological requirements, actors, and processes. It also requires a broad appreciation of the issues, both political and ethical, and of the basic philosophies behind such work.

Finally, it is a prerequisite that CSD's work be firmly based on principles for sustainable development.

Sustainable development:

In international circles, sustainable development is now generally understood as having three major aspects. These are often represented by interlinked circles defined as ecology, economy and society (or some variation of these three). SD particularly in the context of human settlements must be understood in its full breadth, encompassing not only environmental but equally social and economic sustainability. This understanding of sustainability has important implications for development strategy by an actor such as the CSD.

The building sector:

As we now know, the building sector is responsible for around 40% of all energy use, wastes, and emissions. This is also the case in developing countries.

Buildings are therefore a larger cause of global environmental pollution than either industry, or transports. This has not been realised until quite recently; and we still find ourselves in the situation where the planning and building sector is given far less attention.

Most development programs however do include construction - but this is often not seen as a main issue. For example a health project includes building of clinics, agriculture projects include storage buildings, but these are programs led by doctors or agriculture specialists, so they are often not closely interested in the buildings. Therefore, the buildings are unfortunately often planned without thought to energy and sustainability.

Sustainable building needs to be a main focus of the UN agenda. The building sector is one of the main challenges to global sustainability, and must therefore be given the same importance and attention as better-known areas like biodiversity. A major task of CSD should be to raise awareness of this in international circles and in the UN system.

The whole and the parts:

The above implies that it is not only individual buildings which are the issue, but just as importantly:
- how settlements are put together, in other words town layout, infrastructures etc
- how the settlements are financed, organised and run (forvaltning).

This is in line with state of the art thinking both in Norway and internationally. Sustainability in the built environment used to be seen as a question of making sustainable buildings, but the focus has now shifted towards appreciation of the larger picture. This is because the shape and design of a housing area or town as a whole, is more important than the individual buildings, and has a longer lasting effect on biodiversity impacts, energy use, transport needs, etc.

Process and product:

Equally, the organisation and processes involved in creating human settlements are at least as important as the products. An apparently excellent solution for a house design can be a complete failure if it is not financed and delivered in an appropriate way. A recent OBOS/Husbanken project in South Africa, for example, has been mainly concerned not so much with actual building of housing but with institution-building, that is, creating structures such as borettslag, housing financing systems and the like. These are things which we in Norway may take for granted, but they are largely unknown in post-apartheid South Africa. We don't think about them but they are the framework within which, the very prerequisites for a housing programme to succeed and function.

2. SOME BASIC QUESTIONS IN CSD'S MANDATE

2.1.WHAT DO WE MEAN BY HOUSING?

Broadly speaking there are <u>three main classes</u> of housing that may be targeted for delivery. It is important to define clearly which of these are to be encompassed by CSD.

A.Emergency shelter:
Normally appropriate for relief in refugee or natural disaster situations, such housing has the following basic requirements or characteristics:
- it is temporary
- it should be deliverable and mountable in a very short time
- it should be either easily disposable, or recyclable.

Because it is temporary, it does not necessarily have to fit in technically, architecturally or culturally with local traditions. However, it has to be recognised that emergency shelter not uncommonly does stay in place for long periods, and may even become permanent.

B.Minimum shelter:
This category covers a range of types where one provides a "startpakke", for example projects of the "sites and services" type. In these, one sets up the basic infrastructures for access, health and hygiene such as roads, water, sanitation, and provides building sites with for example just a concrete floor slab, a bathroom and perhaps an electricity point. The users themselves then build the rest.
There may be further provision of assistance in the form of building materials or a skills centre to give information and help to self-builders.

C.Basic housing:
Here one is providing what is seen as a more or less sufficient and finished product. Of course, provision will often be built in for future expansion and upgrading of the units. Such housing may be in individual buildings or in clusters / apartment blocks.
In developing countries such housing is often designated into various classes, depending on the income level of the recipient groups, with attendant standard sizes and levels of amenity..

To the above three should be added the issue of upgrading <u>existing</u> poverty housing, see below. Naturally the above have variations and may overlap. These three categories may also be defined respectively as: <u>temporary</u>, <u>provisional</u> and <u>permanent</u>.

2.2. WHAT DO WE MEAN BY LIVING CONDITIONS?

The mandate of CSD refers to "bosettingsspørsmål" and to "livsvilkår".
The term "living conditions" may be interpreted narrowly to focus on the <u>housing</u> only. However, if one's goal is to improve the conditions of life in an urban slum as a whole, then there are other considerations. In would seem clear that it is the <u>urban living conditions as a whole</u> which should be the focus of such a program.
To take some simple examples:
- upgrading the <u>water supply and drainage</u> may be more important than improving the buildings,
- <u>relocating</u> residents to a new housing estate may cause more social disruption than improvement, with consequent criminality and other problems
- many slums are controlled by landlord mafias, whatever the official city policy, so that improving <u>security of</u> <u>financing and tenancy</u> may do far more to uplift oppressive housing conditions than physical measures,
- upgrading <u>public spaces</u>, not the houses, may be the best way of improving the living space of the greatest number at the least cost.

This again underlines the importance of focusing on the goal of sustainability in human settlements in a wholistic way. The examples also raise the question of finding the most cost effective approaches.

2.3. IS THE FOCUS NEW HOUSING, SLUM UPGRADING OR BOTH?

Many would argue that with world population growth slowly flattening out, underlined upgrading of existing housing is the major part of the task. But both tasks are important.

Upgrading is also the more difficult task. Not least there is a relentless dynamic in informal urban settlement which means that the task increasingly gets out of control for the authorities. In the deprived inner city areas of New York, even, the starting point had to be a painful acknowledgement by the city authorities that they had failed.

In cities such as Ankara (Turkey), squatter settlements around the city started as one-storey shacks, but this does not last: after some years, they develop into three and four storey urban dwellings. It would therefore have been useless for the city to put in water and sewage infrastructure based on a static picture of one-storey shacks.

Slum improvement normally may start with an amnesty and the legalisation of land or tenancy rights; without this there is no basis for investing in physical improvements. These are complicated and long processes. Involvement of and cooperation by the residents is a prerequisite. The processes require some form of community or neighbourhood organisation, such as CDC's (Community Development Corporations). Here again, what is possible in any specific place will depend very much on local cultural traditions and community structures.

Planning and construction of new areas, on the other hand, is in some ways simpler. But in developing countries it is often done without attention to basic principles of planning for sustainable development. This is often due to a combination of low levels of skill, limited resources, and urgency. One thus often copies outdated housing models - or imported models – which may be creating problems for coming generations to deal with.

An example is reconstruction in the Balkan countries. Due to the urgency of the task, housing is being built which more or less copies the concrete apartment blocks of the fifties. This is a disaster in several ways: socially, but also environmentally, since these blocks will depend on huge amounts of fossil fuel energy for the next 50 years. One is thus locking the struggling countries into a new cycle of economic dependency on imported fuels, and a new cycle of serious environmental degradation.

One reason for this is that emergency and aid agencies often do not have qualification in the (relatively new) field of sustainable building.

Slum upgrading requires removal of housing built in unsafe or landslide-prone slopes; provision of areas for roads and infrastructures; demolition of some houses to provide space for schools, parking and public space. Both the logistics and the economics of upgrading existing slums are very demanding. A major slum development project in Bogotà (Colombia), has shown that upgrading of existing slums costs about double what it costs to provide new urban areas for low income groups. In other words, prevention (by better urban planning to begin with) would save large amounts of scarce funds later on.

2.4. WHAT DO WE MEAN BY DELIVERY?

A program for delivery of housing faces three main issues: product, process and institutional capacity building. All three of these need to be addressed and policies formulated.

A.Product:
Housing is anything but a simple product. Some of the main variables are climate, available construction materials and technology, and the choice of solutions which fit the ethnological/social/cultural context in a given culture.
There may for example be religious beliefs which make an entrance on the north side or a square form unacceptable; there may be social requirements which mean that if only one room is provided, women will be relegated to an outside place. It is not easy to define what a good product will be.

B.Process

Planning and design may be with or without user participation. Construction may be self-help or by an outside contractor. Management may be individual, public, or cooperative. These process factors will be probably as critical to success as the product itself.

The Rio principles regarding sustainable development, embodied in Agenda 21, stress that processes must be appropriate and local, if we are to achieve sustainability. The stakeholders must be closely involved. Community participation and user involvement are essential to success.

C. Institutional capacity

The goal of a housing program is not only to deliver the first results, like a "once-off" project, but to build up capacity locally to implement more projects in future. Sustainable delivery requires the building up of knowledge as well as institutional capacity and organisational structures.

Economic instruments are equally important, and are particularly problematic when targeting the poorest income groups. Successful examples have included the Grameen Bank (Bangladesh), which operates microfinancing structured on a neighbourhood basis.

Delivery of a housing area is short term delivery. The issue however is how to ensure that many, many more projects can be delivered, not from outside but as far as possible by the country itself.

One should note that CSD itself will not deliver any housing projects. The role of different actors at various levels therefore needs to be discussed.

2.5. WHICH ACTORS AND LEVELS OF ACTION?

What can be delivered by an actor at the level of the CSD? It is obvious that the actual delivery of housing happens at a local level. In broad terms one may distinguish three main levels of action for urban development initiative:

A.International

Agencies such as UN, Unesco, FAO, GATT, ILO, IPCC, etc., define overall principles and goals at a global level. These principles are further translated into target programs in specific areas of action - such as shelter, labour, trade, human rights, education, climate change abatement, etc.

International programs thus create the broad frameworks. They can further, spearhead concrete programs at the lower levels, evaluate results and propagate experience; but they are not themselves implementers of projects.

Regional agencies (defined for example by categories such as Asian, Sub-Saharan, Tropical, Arctic …) fulfil a similar overarching function, their area or function being slightly more region- and perhaps culture-specific.

Other international organisations and groups such as NGO's and Policy Institutes operate very much at the same level.

In the field of housing and human settlements, the actors include bodies like Habitat, the International Architects Union (UIA), iiSBE, IFHP, etc.

In Norway the relevant expertise and networks are largely to be found in the Habitat group, connected to KRD.

However, as noted by CSD, the whole sector related to spatial planning and buildings has never achieved a high profile internationally, even though it is a key component in all development.

B.National

In most cases, concrete projects are still implemented on a national basis. These nations have their own policies, views and priorities, which will not always coincide with the international ones - even if these nations are signatories to all the relevant UN agreements.

International agencies like UNDP and FAO however also act as specific implementing agencies, and this they do at the national level. (They may also have regional bases, such as ESCAP). In this case they work from in-country national offices, and must often modify their own focus quite radically to adapt to the priorities of the host nation, and with attendant compromises.

Host nations often wish to implement projects themselves, which strengthens their internal capacity; this is in line with Norwegian policy.

International programs thus have to empower and support concrete projects, at national or local levels, within a clear framework without watering it down to something meaningless.

C. Local and specific

Concrete delivery is provided by specific agencies, NGOs, international suppliers and contractors, as well as by local implementation.

Many development programs aim to maximise local delivery in order to achieve the goal of in-country capacity building. Coming in with a Norwegian contractor may provide the product, but without helping the recipient country in any way to be able to implement projects itself in the future. It is questionable to what extent such delivery may be termed successful.

One of the main issues is therefore that of technology transfer - or capacity building to use another term. This is a key factor to evaluate sustainability.

It is important to add that most housing world wide is still provided by users themselves, without any of the above institutionalised actors. Local people often have both the resources and the knowledge, but lack only some legal and financial frameworks to be able to provide their own housing. This is particularly the case if one is targeting the most needy population groups. Housing provided by outside agencies, even if very low cost, will very often still be inaccessible for the poorest groups.

The issue here is both sustainability, and enablement. Many programs aim to strengthen just this, rather than trying to provide housing by institutionalised mechanisms.

D. Communication between levels

Global action such as in CSD, cannot possibly be in close touch with all the very varied realities locally. There must however be sufficient feedback between grassroots realities and global discussions - overall priorities must be informed by local needs. It is only at the local level that the concrete possibilities for good solutions can be seen - they can not be designed in Geneva or Oslo.

The role of actors like CSD is therefore to provide guiding global principles for local action; active political campaigning to highlight, explain and prioritise the targeted area; and as far as possible to secure financial commitments (both international and national, multi- and bilateral) for concrete projects to be implemented by member nations.

International work demands high levels of communication skills and cultural sensitivity. Foreign experts may communicate badly in other cultures. One of the main roles for CSD would thus seem to be that of communicator.

A further function is to raise public awareness, evaluate and disseminate good practice as widely as possible. Though the role of international programs such as CSD is not directly to implement projects, but it is important in political terms to "sponsor" and highlight successful project cases, in order to convey an image of useful concrete results as opposed to global talk shop.

3. CHALLENGES AND ISSUES

3.1.WESTERN MODELS: SUBURBIA? HIGH RISE?

It is remarkable that even though one is addressing the needs of the poorest groups, the housing model one very often sees applied in developing countries is that of western, upper-class suburbia – in a poorer version - that is, individual housing units on individual plots. This solution has many limitations, creates diseconomies, as well as far higher environmental loads.

In further imitation of western suburbia, such developments are very spread out (lav tetthet) - and planned as if the residents had access to motor cars. This creates great hardship for the residents to commute long distances, often with little or no public transport available locally - and no local services or shops either. This reinforces the point made above about how important it is to approach housing in terms of the whole settlement, services, and living conditions.

The ultimate goal of any human settlement program is <u>not</u> sustainable houses, but <u>sustainable community</u>.

In many developing cities the model is western-style high-rise. This too may be environmentally costly as well as culturally inappropriate. High quality high rise, which rich cities can afford, may be acceptable, but poor quality, overcrowded high-rise (as in many Asian cities), is probably the worst of any solution.

One should remember that the "compact city", (høy tetthet) which in discussions in our part of the world is said to be the most sustainable solution, is dependent for other things we perhaps take for granted and are not necessarily available in developing country situations. For example there are cities with 10-storey blocks - none of them with lifts. Not what we would call acceptable living conditions! High density requires a minimum of public open space. In towns like Bhutan's capital Thimphu, where land is scarce and prices determine density more than city planning, a policy of high density in the name of "sustainability", may mean construction on every plot, with <u>no open public space</u> at all.

High density also presupposes clean air, for example. Most cars in African cities are so badly tuned and maintained that air pollution is very high. Building compact cities is not a good idea given that kind of traffic emissions. Here again, concepts like "high density is sustainable" which may be relevant in our context, may be recipes for disaster in a Third World context.

Many slum areas are haphazard collections of thousands of dwellings, with no open space except bits of leftover waste land, and with no urban or community structures. A remarkable project in the townships of Capetown (South Africa) is addressing the issue of low-cost, high quality public spaces that create identity, social interaction and cultural life. It is also seen as creating basic human dignity in the context of neglected slum communities.
(Obs: they are invited to visit us in Scandinavia in November, I strongly recommend a seminar for MD)

In addition to problems with specific models, is the issue of avoiding a narrow focus in general. As is rightly underlined in the recent Habitat documents (Styremøte Nairobi 5-9 mai 2003, KRD), for example, even if a main focus is on <u>cities</u>, one must not lose sight of the connections between town and country. This is especially true in the perspective of environmental sustainability and ecological footprint. One may well wish to give a clear focus, for strategic and political reasons; this is very understandable, even necessary if one is to be efficient politically, however when it comes to concrete support to projects, one should emphasise a wholistic approach.

3.2. APPROPRIATE TECHNOLOGY

Many development projects fail because the solutions chosen have been inappropriate, that is poorly adapted to the climatic, functional or especially cultural context of the recipients.

One can for example not export a Scandinavian wooden structure to a tropical climate. The well known NORAD-financed Kerala case illustrated how the (in principle excellent) solutions for improved fishing boats, put large numbers of local people out of work. Another classic "white elephant" was the attempted introduction of solar cookers into cultures where it turned out that food was traditionally only prepared after sunset!

Projects by pioneers like Hassan Fathy (Egypt) have developed low-cost, bioclimatic housing using local materials, renewable energy and reviving traditional techniques such as the Nubian vaults which can be constructed without shuttering.

Development solutions must in other words be well adapted and sensitive to the recipient cultures. Work by organisations such as the Intermediate Technology Development Group (ITDG) in many countries have applied these principles in practice for many years, and their approach combines ecology and culture. There are now organisations in several countries working on these lines, such as NCAT (Wales), Development Alternatives (Delhi), DSC (Nepal), CESTA (Central America), etc.

3.3. COMMUNICATION, FEEDBACK AND EVALUATION

It is often recognised in Aid and development circles that the "development learning curve" is poor. There is too little use of existing experience or learning from past mistakes. New agencies arrive in a country and repeat earlier errors by others. Aid programmes have a short time horizon, so they often don't know whether their projects are still working five or ten years later. Donors may be reluctant to hear "bad news" - not least because of possible political criticism back home - so that evaluation missions may avoid difficult issues. Host countries don't want to hear bad news either.

A major challenge in a broad mandate such as that of the CSD is therefore to obtain a realistic overview and analysis of existing experience.

3.4. MARKET AND STATE

The sites and services model given above illustrates the need for a pragmatic attitude to state intervention, public planning, private sector or user-led development. As is recognised, also in liberalistic economics, all markets in order to function have to be regulated to some extent. This applies especially to conservation of nature and past heritage - which otherwise may be exploited and torn down due to market forces - and equally, to long term future values and goals such as environmental sustainability, which short-term market forces alone do not recognise - due not least to the discounting mechanism in our economic system.

In developing countries however the public-private equation can be very different. For example, it is unthinkable to privatise the health sector in a country that has limited technical skills, poor logistical organisation and above all, little regulatory capacity within the state itself. The result would almost certainly be a badly coordinated health system, prone to corruption, with fake medicines and little effective control as well as least opportunity for the most needy.

The effectiveness of public or private initiative depends on many conditions which we take for granted in our countries. Countries like India and Bhutan illustrate this in many areas; the move towards private sector-led development takes time, and needs to be handled very carefully - certainly not according to western neoliberal economic theory any more than socialistic dogma. The state itself may not be a very good planner and deliverer of housing, but the private sector in such countries may be far worse.

The UN and Habitat's focus on governance is very useful in this respect and can be used as a good tactical focus, because it shifts attention to pragmatic issues and away from a dogmatic approach.

In many developing countries it is also a fact of life that both public and private sector implementation mean, in practice, a large part of the cake ending up in the hands of a small elite. One

way or the other, this issue is of central importance when discussing appropriate (eg. effective) delivery models for development programs such as CSD. The answer will vary from country to country.

4. SUSTAINABLE HOUSING

Internationally there is a large corpus of literature on sustainability and housing, as well as documentation of case studies with a wide variety of approaches.
Regarding urban upgrading of *favelas* or slums, much work has been done in Latin America and South Asia in particular.

It is well recognised that the poor suffer most from urban deprivation, including health problems due to location on the least favourable sites near polluting industries, unsafe water and hygiene, and not least health problems caused by bad energy sources for household use. A series of studies in South African townships have documented the extremely polluted atmospheric and lithospheric conditions. The second largest cause of death in South African township children is ARI (acute respiratory infections), and it is the leading cause of death in some urban areas *(van Horen et al., EP 5/93)*.

South Africa presents an interesting and not untypical example. Here as in many countries there is a huge need for new housing. However, this is often done on the basis of tendering out large numbers of houses to the cheapest contractor. There is almost no urban planning. One thus finds hundreds of houses laid out in straight rows, with no variation, no public spaces, no thought to future public transport, schools or other services which are essential parts of any urban community.

It illustrates a continuation of a historical model from apartheid times, when black housing was a low priority and was delivered by the white regime as cheaply as possible, and with very little concern as to quality or community. Soweto outside Johannesburg was basically a dormitory for a million cheap workers; their living quality was not a concern.

Issues such as climatically adapted construction, energy supply and biodiversity are ignored. This in turn reflects a low level of awareness amongst the administrators and planning authorities. Even though the political intentions are far better now, old planning attitudes are still in place. The need is not so much for housing solutions, as for capacity building in the administration.
Such programs may provide thousands of houses; but they don't provide sustainable urban communities. In addition, they lock a developing country into huge negative effects as regards future resource and energy use.

The example raises one of the fundamental dichotomies of such improvement programs: short term need versus long term sustainable development. In addition to unnecessary environmental damage, the economic implications are enormous. Studies show that huge amounts of money can be saved by better forward planning, and that later upgrading is both physically very difficult, and will cost far more - so upgrading will seldom happen.

Sustainable housing is considerably easier to address when one is dealing with higher income groups. If the goal is to reach the most needy, models that we know from our own safe world of qualified staff, legal contracts, and accepted quality standards, are often not relevant.

In accordance with the concept of sustainable development given above, sustainable housing has three main aspects: ecological/technical, economic, and social.

Technical:

Housing should be adapted climatically and should require low inputs of energy and resources, as well as avoiding hazardous and unhealthy substances. The ecological footprint of construction can be measured in simple ways, conveying the effectiveness of space use, energy requirements, environmental impacts and biodiversity.
It should be stressed again that the ecological impact is as much dependent on the overall urban layout and infrastructure, as on the individual buildings. This refers in particular to energy supply systems, transport requirements, water and waste cycles.
In developing countries, there is often far less concern about environmental protection, urban biodiversity and green space. Attitudes to nature are different, combined with for example overriding

needs for firewood and lack of land control mechanisms. Biodiversity and vegetation issues therefore need to be paid special attention.

Many successful projects are along the lines of "improved local architecture"; that is, they build on local traditions but introduce just a few important modernisations, such as better foundations, earthquake reinforcing, reduced timber use, better insulation. In quite many developing countries there are already excellent local organisations working with these themes in the building sector. These should be primary partners.

Traditional building techniques using natural, local materials can often be 'modernised'. This avoids expensive imports, and ensures <u>sustainable development</u> of local architecture which is well adapted to its climate. For a hospital in Bhutan, this author produced MCR (microconcrete) roof tiles using all local materials, for half the cost of the imported CGI tin roofing sheets which are normally used. MCR is a technique developed originally at the Kumasi Institute in Ghana by ITDG, and is now used in several countries.

Housing should as far as possible use passive design solutions, such as bioclimatic design, passive solar heating, natural ventilation. This is especially important for low income groups who can not pay for technical equipment, or for commercial energy supplies.

Usually passive environmental solutions can be found in traditional indigenous architecture, and can be adapted in modern forms. This approach to design also maintains local traditions and skills - an important element for <u>cultural sustainability</u>.

Economic:

Sustainable economics relates not only to direct costs, but also to financing, forms of tenure, and to the organisation and management systems over time. To be sustainable, housing must be financially <u>accessible</u> to the poorest groups and this in a way that is maintainable on a long term basis. Issues such as availability of work locally are equally important.

Housing should as far as possible be produced locally, so as to ensure best use of local resources and to strengthen the local economy. Imported components are also often impossible to repair and maintain - leading to more, not less dependency on foreign aid.

Legal and administrative structures, such as housing associations, are often lacking and unknown in these countries. This is another part of the economic framework that requires special attention (cf. Husbanken/ OBOS project in South Africa).

Effective maintenance and running of housing is, in environmental terms, at least as important as the initial procurement. Inefficient running will result in high energy costs, degradation, as well as direct building degradation. Some development projects with a design life of say 50 years, are seen to be rotting after only five to ten years. This often relates to lack of attention by delivery agencies to follow-up and evaluation.

Social:

A varied socioeconomic population is a fundamental requirement for a vibrant community. This is hard to achieve in slum areas.

Equally, qualities of urban space related to security, accessibility, identity, have both a social as well as an economic dimension. In our own societies high quality urban space is known to have a big effect on reducing criminality and vandalism - more so in developing cities.

Housing form is closely related to culture. Social groupings and hierarchies must be studied as basic decision criteria in planning housing layouts. For instance, providing blocks of apartments in some African countries led to some very curious social effects (traditional clans started to group themselves on different floors!)

Housing is in other words not just a technical question. The solutions both for individual buildings and for neighbourhood layouts must be adapted to culture. This often requires in-depth study, which can not be delivered by outside experts on a one-off basis.

Effective mechanisms for user involvement and local community organisation are a keyword to success in housing for the urban poor.

On specific technological aspects:

As noted above, the overall layout, design and choice of appropriate house types, etc., are fundamental. Flexibility over time, especially the possibilities to expand and upgrade the structures, is also a key requirement.

It is not possible to say that single family houses, or apartment blocks, are the right or wrong solution in general. The answers will be different in different places, and the acceptability of different types will often be heavily predetermined whatever the outside experts may prefer. Whatever the type of building, however, one can still make the solution as sustainable as possible.

The main technical issues are:

Energy:

The primary focus should be not on supply but on <u>reducing demand</u>. This should be solved as far as possible by solutions that need as little energy as possible. The poorest groups cannot afford commercial energy. Bioclimatic architecture uses natural cooling, passive solar gain and other strategies to reduce energy needs to a minimum.

Water and wastes:

To be solved mainly on a neighbourhood, not individual level. Water is critical in many countries. In arid areas greywater can be recycled (the city of Windhoek has been doing this for several decades). Both water supply and waste treatment are critical issues for urban health.

Building materials:

Should be local, renewable and have low embodied energy. Special care should be taken to avoid toxic materials since in developing countries, citizens often do not have the knowledge of how toxic these are and may easily misuse them (such as using chemically treated timber for cooking, which can be fatal).

Biodiversity and impacts on nature:

These aspects depend in particular on overall site planning, layout and management over time. Vegetation can greatly improve urban microclimate in addition to its other benefits. Urban environmental degradation often happens because the poorest people have no choice but to cut down available biomass and to overgraze what greenery there is.

Public space:

The poorest have minimum if not sub-minimum housing space, and the outdoor, public urban spaces are therefore their "common living room". So the urban spaces are nearly as important as the buildings themselves - in addition to creating identity, community interaction, and security. Cf. the award winning Uluntu Plaza project mentioned in South Africa.

It should be stressed that technology should be kept to a reasonable minimum. There may be a tendency to want, for example, a lot of imported components, or solar technology because it appears renewable and makes a strong "political" statement - and is of interest to industry. However this kind of solution may not be affordable, or sustainable. A keyword for the poorest housing groups has to be simplicity, with a maximum of locally adapted passive design solutions.

In addition to the above are the issues of <u>costs</u> and mechanisms or <u>processes of delivery</u> of the housing.

5. CONCLUSIONS

5.1. STRUCTURE AND CONTENTS

Documents:
A short policy document should define overall focus and goals, with a strategic program. It is important that sustainability should not be profiled as an added "extra" criteria for projects (as in the case of recent Norwegian urban sustainability initiatives!) but as a basic and essential quality requirement.

Examples:
Collect a small number of good examples, representing different regions, themes and approaches, and use these both as publicity, and for deeper evaluation within CSD of differences, problems and appropriate strategies. A few such are mentioned above but it is beyond the scope of the present short note to collect the information or describe them in detail.

Projects:
It is recommended that projects supported / promoted by CSD should not focus on single issues only such as energy, roads or water, but on wholistic approaches. Specialist solutions in one area are often hindered or damaged by specialist solutions in the next. Sustainability requires an integrated approach. This also leads to economies.
An example is infrastructures. Thimphu, capital of Bhutan, has been typical. In many developing country situations, one sees an aid agency come in and dig up all the streets to put in sewage lines. The next year another agency comes and digs up the same streets to put in electricity cables. Then comes another and digs it all up again to put in water supply. This creates problems for the inhabitants for many years. Each "specialist" agency goes away happy with its own work, but none of them see the whole picture. Each has maybe kept within its own budget. But the total cost is probably three times what it could have been with an integrated approach.
Establish contacts with existing "winners", eg. successful housing/slum upgrading initiatives which could be supported further. This will provide experience, as well as enabling CSD to share credit for "action" which is already happening.

Networks:
Identify a small number of successful and recognised individuals and organisations as initial partners in different regions. In doing so, look to select innovative partners rather than only ones which may be well established but bureaucratic and less creative. This is both to avoid existing "power games" and to encourage a variety of new thinking.
The above also relates to choosing winners in the sense of established and respected local organisations and NGOs, in particular, local housing groups or neighbourhoods. Synergy should be sought with anything related to local LA-21 initiatives, not least since this will heighten the positive international and UN profile of the work being done.
"Winners" can be found in all world regions, but it will be advisable to prioritise countries where delivery is known to be not too difficult.
Implementation modes will vary from country to country. At the UN level one may develop guidelines for sustainable housing. It may be useful to compare for example the IOC guidelines for "LA-21 for Sports". The UIA Work group which I am director of, *The Road from Rio*, have been contributing to this, together with Marianne Natvig /Lillehammer and KD.

Evaluation:
Give CSD's work a critical spirit. Develop a structure for critical review and evaluation of projects, and do everything possible to ensure it survives.
Methodology of evaluation should be structured in a clear way corresponding to today's understanding of the concept of sustainability, explicitly including separate focus on ecological, social and economic aspects.
Review can be at the usual stages - program, design stage, mid-term and post-evaluation. However if a learning curve is to be ensured, review must in addition be required in a longer time perspective, such

as 5 years later. Improve follow up and evaluation: as noted international evaluation is often weak and memory is short.

Dissemination:
Not adding to the piles of international newsletters and publications with general theory, policy etc., but spreading examples and critical discussion of concrete good practice, should be a very high priority.

5.2. STRATEGIC TARGETING

Regions:
It is probably advisable to focus on quite a small selection of initiatives. One might avoid countries where logistics and cooperation are known to be difficult, but the examples should come from all geographical regions - including a few deprived inner city programs in developed countries.

Themes:
It it tempting to select just one or two themes - such as sewage, or water, or renewable energy. However, the specialist approach is the opposite of a wholistic environmental view. It has not seldom been itself a cause of failure, because the specialist solution which in itself may look good, may not take account of other, overlapping issues.
Sustainability also becomes most economical when several ecological and social themes are considered in synergy and solved with integrated solutions.
CSD programs should be user-focused rather than purely technical. Certain key themes may therefore be given high priority, if this is really desirable - but if so they must be addressed not in a specialist way but within the context of an integrated and community-based (participatory) approach.

Strengthen the urban layout and infrastructure issues:
As noted the houses themselves are only part of the issue. A shift in focus towards the bigger picture is generally accepted in sustainability circles now. The Nordic countries have a lot to offer here, with many decades of well thought out housing. (For example Husbanken and similar kompetansemiljøer. NABU is focusing increasingly on this level of neighbourhood/overall layout, with many municipalities asking us for assistance to develop sustainable housing areas).
However, it is also important to develop and build at least some specific housing types, in order to contribute to better future solutions, based on sustainable building design, which is almost unknown in many countries.

Recipients:
It will be an advantage to target certain user groups - for example children, women, old, and handicapped - not because these are necessarily more important than the others, but for strategic reasons. This also fits in with the mandate of CSD to target the most disadvantaged.
Focusing on children, women, the elderly, etc., may often help to clarify the goals and sustainability ambitions of projects; at the same time this is a good way to attract the international funding. The organisation CESTA in El Salvador deliberately targets these groups for its building and enterprise projects, as well as handicapped people.
It is often said that a city designed for children is good for everyone. This therefore provides a creative focus for design solutions.
It is also easier to get funding for these groups.
In addition, results involving children, women etc., are more media-attractive and good PR.

5.3. GENERAL

The provision of better living conditions for the poorest is both about building large new housing areas, and, to an increasing degree, upgrading or normalisation of existing slums.

Living conditions include both housing and the urban environment around that housing.

Upgrading existing slums to an acceptable urban quality has been shown to cost easily twice as much as if these areas could have been planned in advance, including planning for informal settlements. Seen in a sustainable perspective, this issue of avoided costs must be given top focus. Slums cause extremely poor environmental conditions and have serious ecological consequences. In other words the uncontrolled urban sprawl in developing countries is creating enormous burdens for the future. These burdens will be social, environmental and not least economic.

In choosing appropriate solutions local climate, building technology, administrative and cultural factors play crucial roles. The keyword is sustainable design and construction. Successful examples always build on many specific local factors - there are no ideal models which can be imported. What we can find, perhaps, are common principles; it is important however to note that these have to do with processes, more than with physical solutions.

One can find many models around the world both for new settlements and for upgrading of existing slums. Both of these demand a great deal of political and logistical efforts, and user participation is a key to nearly all of them.

Programs aimed at improvement of the living conditions of the poorest population groups are in other words, partly about physical products in the sense of good planning and construction solutions. However, such programs are to a very large degree about social and legal instruments and community processes.

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6. ANNEXES

6.1. NABU: contacts / resources:

NABU works within the field of sustainable architecture and planning and urban ecology. NABU has well-established networks in this field. These are principally Nordic and European networks, and there have also been international activities. The goals and methodologies of these projects relating to urban ecology and sustainable development aply in a global context.
NABU is the only 'kompetansemiljø' in Norway working specifically with sustainable planning and building. NABU's networks on sustainable building and planning include both Scandinavia and Europe, as well as international contacts.

We can through our Nordic and UIA networks collect international project examples, and provide further resources and contacts. If it is of interest, I can also "deliver" to CSD the involvement and cooperation of the following:

- The International Union of Architects (UIA),

- The international organisation iiSBE / Sustainable Building, with a particular view to involving CSD in the next congress to be held in Japan in 2005,

- Expertise / organisational partners in several developing countries where we already have established contacts, such as South Africa, Zimbabwe, India, Nepal, El Salvador, Taiwan, and in the Balkan region.

6.2. Norwegian basis and focus

Norway has over the years developed principles and policy guidelines for development aid (bistand), including in the field of human settlements. (Se *Norges Habitat-II rapport, KRD / Istanbul 1996*). These are very useful documents where the existing experience should be drawn on actively and will not least, ensure that CSDs work is in accordance with the accepted Norwegian goals and guidelines for such work.

As the above mentioned Habitat report states, Norwegian development aid has hardly focused on urban development, area planning or buildings. There has been rather more work with infrastructures. Norway has relatively little experience with user participation processes, and relatively little in renewable energy (excepting hydro), energy conservation, or sustainable building/planning.

There are nevertheless Norwegian projects relevant for CSD. These include slum improvement in Lusaka, infrastructures and water supply in Palestine, Zambia, Zimbabwe and Angola, aid to housing cooperation and professional education (East and South Africa) One can also mention road building in Botswana and other places; documentation and mapping (Tanzania, India, China); support to housing finance through microcredit systems (Bangladesh, Sri Lanka, Palestine).

Many of the Norwegian-funded projects have had a technical focus, however. There is less experience of issues relating to urban community development, social and settlement questions.

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