

Spatial Planning to Avoid Urban Inequalities: Experiences in emerging small towns of Mozambique

Corrado Diamantini

Introduction

Over recent decades, a number of economists and geographers have studied small towns in less developed countries, and have reached the conclusion that, faced with growing poverty in the cities and increasing divisions between city and countryside, it was necessary to keep down rural migration by improving living conditions in the countryside. According to these scholars the way to do this is by strengthening the position of small and medium sized towns in order to enable them to supply the goods and services required by the inhabitants of the surrounding rural areas (Rondinelli & Ruddle, 1978; Hardoy & Satterthwaite, 1986; Baker & Pedersen, 1992; Tacoli, 2006).

It has been said that this approach was not initially welcomed by central governments, partly because it involves the transfer of resources from the major urban centres, where power is held, to the countryside, which has no political voice (Lipton, 1977). However in the last few years there has been a turnaround and policies aimed at supporting rural development have started to be implemented in sub-Saharan Africa (Pedersen, 2003; Owusu, 2005). These policies involve both direct intervention, intended to stimulate local development through specific projects, and indirect intervention – like decentralization – in an effort to promote the participation of as many territorial actors as possible.

These development policies are directed particularly at agricultural districts, and, above all, the small urban centres within them, leading to the latter's growth and rapid transformation. There are undoubtedly benefits – among them the diversification of income sources – but also perils.

Two factors, in particular, contribute to this criticality: the way in which towns are changing is widening the social and spatial gaps between rich and poor – a seemingly ineradicable feature of large cities – and, secondly, the speed and depth of the changes, which do not appear to have been supported by the necessary transfer of economic resources and technical competences. But while the latter has been the subject of considerable attention on the part of academics and policy makers (Van Niekerk & Marais, 2008), the former has not received due consideration, even from urban planners. And yet there are at least two reasons why planners should pay attention to what is happening in the towns of sub-Saharan Africa.

The first is the opportunity presented for tackling a problem right from its inception; that process which leads from social division to actual spatial division within urban centres (Santos, 1979), and thus to have a better chance of halting, or at least limiting, its progress.

The second is the scope offered for innovative planning decisions in contexts which present far fewer constraints than are met with in big cities, where one is inevitably working within pre-existent structures which allow for only those interventions, which alleviate rather than resolve problems.

In order to make the most of these opportunities, however, some old paradigms of the discipline must be reconsidered.

Firstly, it is necessary to be aware that small urban centres in sub-Saharan Africa are not like the towns of equivalent size in industrialized countries. They usually have distinctive

features, maintaining, for example, alongside urban functions, subsistence agriculture, rural ways of life and traditional institutions, which are reflected in a spatial organization and housing typologies much closer to that of a village than of a city (Jenkins, 2003). These features are intrinsically fragile, and risk being swept away by hasty decisions, which would not replace them with measures able to ensure satisfactory living conditions for everybody.

Secondly, planning practices need to be adapted – starting with the approaches adopted – to these distinctive features, so that urban planning does not become an instrument of their destruction. A useful lesson can be drawn by referring to two forms of bad practices which, in the early decades of the 20th century, connoted the construction of colonial cities. Le Corbusier proposed a scheme for Addis Ababa in which the traditional settlement was razed, by redesigning the city according to the dictate of new urban functions. Guidi and Valle, on the other hand, imposed a plan on the city, which marginalized by means of zoning, the entire African population (Diamantini, Patassini 1993). This last approach, more practical and in line with a model, which was then becoming established (Njoh, 2006), was immediately adopted.

Today we have come a long way from the bad practices which characterized the construction of colonial cities, but many of the approaches and techniques used, zoning, for instance, remain fundamentally unchanged and it is easy to fall into the error of applying them, even while intending to follow a completely different approach, producing similar results. This risk is notably present in small towns, as their rapid growth may lead to the adoption of a purely technical approach for the sole purpose of demarcating development areas and thus ratifying local administrations' taxation rights.

Urban planners can also make their views heard on the inadequacy of the administrative structures of small urban centres in their attempts to cope with the current changes. In fact even in highly developed regions planning often needs to be done for contexts, which do not seem to be adequately prepared for the work involved in drawing up and implementing a town plan. Procedures for the development of plans have therefore been set up, based on the direct involvement of local actors and technicians, which can be usefully applied in the small towns of sub-Saharan Africa.

This paper discusses these aspects, with reference to experiences on the ground in two towns in Mozambique, where the author has been directly involved in recent town planning decisions. My objective is twofold: both to explain the approaches and choices involved in the planning process and to describe the solutions which were found for some problems, with particular reference to the part played by urban design.

Emerging small towns: Caia and Sena

A changing urban system

Mozambique is one of the countries in which rural development policies are being pursued (Republica de Moçambique, 2004; Massuanganhe, 2005). These policies, implemented both through investment and decentralization, are having interesting results, particularly when one considers the extent to which the country's urban system has changed in a single decade.

Comparing data from the 1997 census with that of 2007, we see that the population of the large towns and cities has grown by 28.5%, while that of the medium sized towns (from 100 – 250,000 inhabitants) is 37.1% bigger.

The demographic dynamic in some provinces follows the same pattern: in Sofala, for instance, the two biggest centres (Beira and Dondo) have not grown significantly, while rural

districts (like Marromeu, Nhamatanda, Gorongosa, Caia, Buzi, Inhaminga) have registered a population increase six times that of these centres. Moreover, the populations of all the small administrative centres in these districts have grown at a speed very similar to that of the country's medium sized towns (Diamantini, Nicchia, 2009).

It is not easy to point to all the factors that have led to this process. The end of the civil war and the optimism about the future which seems fairly widespread have definitely played their part, and people seem to be relying on the resources available to them where they live, or in towns not far from their home. Taking Sena as an example, we see that its growth has been driven by the trade between the town and surrounding countryside, which, since the return of many refugees from Malawi, has remained extremely lively. The considerable investment in infrastructure, both the restoration of what was destroyed in the war and a serious attempt to provide basic services in many small towns, must also be taken into account.

Moreover, the rapid growth of small and medium sized towns has coincided with a process of decentralization which began in the mid-nineties with the creation of the *autarquias* (municipalities) and culminated in the 2003 Law of Local Organs of the State, which increased provincial autonomy and turned districts into administrative units. The fact that these districts now have considerable administrative autonomy has meant not only the strengthening of administrative structures (with a consequent influx of new employees), but also an improvement in the provision of services, in the infrastructure and in the structure of the towns.

It is undoubtedly arbitrary to correlate the above administrative changes with population growth in small towns, but the 128 district capitals in Mozambique – like Caia – certainly have been swept into an entirely new dimension, in which important economic and social decisions are now made locally, on the ground, thus encouraging the development of a certain social cohesion at the local level.

Anyway, it has to be underlined that the growth of these small and medium sized towns is also fuelled to no small extent by the migration of people from the surrounding countryside, where life is still very problematic. The fact that these towns are in a position to allow for the permanent settlement of their new inhabitants testifies, at any rate, to their capacity to retain those forced from the countryside within their districts, thus avoiding the necessity of their moving on further to a city. Living in smaller towns means that peasant families are within reach of cultivable land and can thus integrate incomes from agriculture and work in the town, whether regular or occasional (Tiffen, 2003).

Caia and Sena

Caia and Sena, two small towns situated in a rural district on the Zambezi river, provide an example of the change that the Mozambican urban system has undergone and of the effects that this change is having on the towns.

Caia grew up in the 1950s, around a sugar factory, the *Companhia Açucareira Industrial Agrícola*, after the administrative and commercial sectors of the town moved from Vila Fontes, on the bank of the Zambezi, to a more secure site on the higher ground above the alluvial plain. It was only after independence that Caia became, as well as the administrative capital of the district, a focus for successive waves of migration on the part of peasant families fleeing the frequent flooding of the Zambezi river. At the end of the civil war, and up until a few years ago, Caia was a small town at one end of which lay the ruins of the Portuguese colonial buildings, and at the other the tightly packed traditional dwellings of the

spontaneous *bairros* (neighbourhoods), straggling along the railway line. The railway, like the station and the sugar factory, were largely ruined.

The history of Sena is different. Although it too is a small town, its origins lie in the period when the Arabs controlled the coast and the Zambezi valley. Under the Portuguese, the town, because of its strategic location beside the Dona Ana bridge, became an important administrative centre, and developed a railway depot. The end of the colonial period, and the outbreak of the civil war brought about a rapid decline in Sena's fortunes, as the activities of both the port and the railway collapsed. The repopulation of the town, like Caia, has been due mainly to the influx of peasant families. A number of traders, who decided to stay on in Sena, having been first attracted by the camps of returned refugees set up there after the civil war, have also boosted the population.

Both towns are important transportation centres: the national road, linking north and south, crosses the Zambezi near Caia, and the railway from Beira divides at Sena, one line going to Tete and Moatize mine and the other to Malawi.

The last five years have seen important changes along the axis on which Sena and Caia lie, caused by various factors:

- The restoration of the railway linking Beira and Sena, where it divides, one line going on to the coal mines at Moatize, the other to Malawi
- The construction at Caia of a big new bridge over the Zambezi, and the extension of electricity lines to the two towns
- The enlarging and modernizing of the hospital and the construction of a big secondary school in Caia, and the creation of a bank at Sena.

There is another factor which should not be ignored however: the very frequent flooding of the Zambezi which has led to the construction of new *bairros* to give shelter to people fleeing from the flood plain.

All this has occurred in less than five years, in which time physical changes in the two towns have mirrored the economic and social changes taking place for their inhabitants. These last involve an increased level of non-agricultural activity – or rather of activity which can supplement incomes from agriculture – which is sending shock waves through the still mainly rural social structure of Caia and Sena. Different life styles are being adopted, and different consumption models are being picked up from the many newcomers to the area. People's increased spending power is due mainly to the expansion of cash crops (particularly the growth in world demand for sesame seeds); many people have also been employed in the construction of the various projects mentioned above.

These are changes which are going to continue: in fact the completion of the railway line is encouraging greater mobility, as travel is now quicker and cheaper than before, and consequently increased contact between the district and bigger cities.

The plans

Confronted by these changes – particularly the impact of the new bridge over the Zambezi, the administration decided to have town plans drawn up for Caia and Sena. They turned to the *Consortio Associações com Moçambique*, an NGO from Trento which operates in the district of Caia. The *Consortio*, in turn, sought expert advice from the Faculty of Engineering at Trento, and thus I became involved.

With reference to these plans, the following aspects are considered: the interaction with the institutional and administrative framework, the problems faced and the solutions proposed.

Starting with local institutions

The Law of Local Organs of the State, passed in 2003, promotes the districts to the level of autonomous administrative units, allowing them budgetary autonomy and control of local programming and planning. The law also provides for a system of public participation, which should allow the various social groups to cooperate with the local administration in their search for “solutions to the major problems affecting the population, its wellbeing and the sustainable development of the territory”. Traditional authorities and leaders – *regulos*, *nfumo* and *sapanda* – also play an active part in this participatory system: their authority to resolve conflicts and make important decisions on matters like access to land is recognized by law.

The drawing up of, first, the *Plano de Ordenamento Territorial* for Caia (Governo do Distrito de Caia, 2006) and then the *Plano de Estrutura Urbano* for Sena (Governo do Distrito de Caia, 2009) took place within this new institutional framework. The active involvement of the district government has been sought, in the formulation of the plan and the decisions around it. A firm connection has been established with the provincial administration, taking into account, on the one hand, the ongoing national debate about the Town Planning Law, and, on the other, the fact that all town plans must be approved at the provincial level.

We have been careful to involve both members of the administration (including local representatives from the *bairros*) and traditional leaders, like the *regulos*. This has been done through discussions with working groups; which are in addition to the formal meetings held with the *Conselhos Consultivos* (Advisory Councils), at various levels, which are required by law.

Without the active participation of all these elements it would not have been possible to get the two plans approved, particularly given their content and formulation.

It is worth adding that in 2006 the district administration also concluded the drawing up of a Strategic Development plan for the district (again with the support of NGOs operating in the area), and made some provision for the resettlement of people displaced by flooding. All this thanks largely to the initiative and coordinating skills of the district administrator and his immediate colleagues.

The plans for Caia and Sena were born from the same spirit of initiative; there was no legal requirement to initiate them. When work began on the plan in 2004 the Town Planning Law now in place in Mozambique was still being debated (it came into effect in 2007), and, moreover, it did not (and still does not) oblige the towns in rural districts to draw up urban plans.

The Caia plan was completed in 2006 and the Sena plan in 2009; right from the start – from the initial questionnaires to the on site surveys related to the improvement of some of the spontaneous *bairros* – two experts and six young activists (specially chosen and trained) were actively engaged in the work on the plans, supporting the local functionaries, who were neither sufficiently qualified nor numerous enough to manage the drawing up and implementation of the plans alone. The whole process was carried out inside the administration, specifically in the *Gabinete do Plano* (Planning Office), specially created for the purpose.

The planning office was also a dynamic place, open to the public. It organized events designed to keep people informed about what was going on, and even sessions of participatory planning.

After the approval of the Caia plan the office was dissolved and replaced by a district department of planning and infrastructure. As the Law of Local Organs of the State recommends, this department is now responsible for all planning matters in the area: land

management, the land registry, building (both public and private), the management of municipal services and, most importantly, water. This is a considerable improvement on the previous system, which involved an extremely complicated bureaucratic procedure in which all requests pertaining to land use were dealt with at the provincial level. The speed with which titles are granted, in combination with an energetic public awareness campaign and the availability of clear information led at once to strong demand for both building sites and the regularizing of existing land occupations or use.

Emerging problems

Caia and Sena are towns of peasants, meaning that in both towns the main source of income is still agriculture. According to two surveys carried out in 2005 and 2008, agriculture is the only source of income for half of the families, while another 30% would not be able to survive if what they earned as petty traders or artisans were not supplemented by their agricultural activities.

Women carry out most agricultural labour: the preparation and ploughing of the land, sowing of seed, hoeing and, finally, harvesting of the crop. All this after a walk of, on average, one hour. Women are also responsible for the collection of water, from wells either within the towns or on the flood plain.

The men chop down trees and procure wood for building. Less tied to the fields, they can pursue other occupations – from fishing to trade. It is also the men's job to build the family dwelling; almost everyone does this using locally sourced materials.

Although 60% of families have a cash income of less than 800 *meticaís* (\$25) a month - not including yields from subsistence agriculture, in Caia and Sena there is scarcity but not extreme poverty (following distinction proposed by Dahrendorf, 1987), although food is always in very short supply in the months leading up to harvest.

Some causes for concern emerged during the drawing up of the plan, since the proposed modernization was not going to benefit all members of the urban population equally. Without considering the differences in income, which signalled the creation of new social groups involved in the growth of the modern and administrative sectors, different patterns of access to services emerged.

Only people in the *bairro de cimento* (old colonial nucleus) had electricity, partly because an account costs 150 *meticaís* a month. The situation regarding drinking water was similar; there is a water main, only supplying the centre of the towns. A kind of vicious circle had been created: the administrative offices, public services, health services, formal commerce and houses built using durable materials all gravitated towards and became concentrated in the *bairro de cimento*, thus continuing to reinforce a widening socio-economic and spatial division between different parts of the two towns.

Furthermore, especially in Caia, the construction of the bridge, the repair of the railway and the electrification of the town raised the sights of the administration, and inspired it to want to give the town a modern stamp. Therefore the plan involved meeting these expectations while ensuring that this would not lead to the marginalization of a large swathe of the population, as has happened in many cities in less developed countries, whose economic growth has only benefited a very limited number of people.

A new perspective

The challenge was thus to support both modernization and the integration of diverse economic and social models.

This has been done by giving due importance to the traditional economy: most importantly agriculture, but also small scale activities and in particular petty trade.

This was possible, considering first of all agriculture, because in Mozambique land is commonly held, so access to it could be controlled within the plan, allowing for the strengthening of land rights through the granting of titles for land use, whether formal or informal. For land on the alluvial plain, in particular, which can be considered the domain of subsistence agriculture, it was a question of granting title to no more than 1.5 ha to any one person. This was intended to stop possible investors from acquiring large tracts of land and thereby depriving family farmers of their best plots.

At the same time it was necessary to envision a means for the improvement of incomes and quality of life for the majority of the population, best done by creating as many links as possible between traditional life and the modern world.

The plans have worked in this direction by, above all, encouraging the integration of the different areas of the town. Therefore:

- Locating appropriately new centralities, using them as real connection points between the modern nucleus and spontaneous *bairros*.
- Locating the various public offices and services wisely, so that they encourage contact and not division.
- Facilitating the free movement of people and preventing the creation of spaces from which many people might be excluded.
- Furthering the integration of the development of the two town centres, which were becoming steadily more modern, with that of the spontaneous *bairros*, thus avoiding a clear division between the various parts of the town that differ in their functions, in their building types and in their incomes.
- Making the various areas all equally suitable for living in, by providing the basic services to which all have a right. This to be done in particular by upgrading the water system (perceived by people to be the most pressing need), and the drainage system for surface water and the collection and disposal of rubbish.

Both Caia and Sena are sprawling towns, full of green spaces in which, given the absence of cars, people can socialize and children can play. Even private spaces, bounded by nothing more than small bushes, are open areas in which people largely live their domestic lives. Now and then a *machessa*, (a traditional building in which public meetings are held), can be seen in the middle of an open area.

So, it was a matter of ensuring – without, of course, diverging from the path towards modernization - a spatial organization, similar to the present one, which encouraged sociality and the use and enjoyment of public spaces. This not in the big public spaces, but also proposing an alternation of traffic flows in order to encourage pedestrians and bicycles (most families have a bike) and to foster a new relationship between dwelling places and the street.

The urban design

These concepts were translated into three key areas:

- An urban design clearly focused on giving each town a homogeneous character and integrating their different areas, by distributing focal points.

- The improvement of the spontaneous *bairros* so that the aforesaid integration is effective, including guaranteed access to basic services for everyone.
- The adoption of implementation methods that assure the achievement of the objectives.

The urban shape

The attention paid to urban shape is a result of the work done to identify the factors that drove the settle and expansion of the two towns. These settlement factors, described below, can be related, on the one hand, to the physical characteristics of the area, and, on the other, by deeply rooted human custom.

- Firstly, avoidance of floods: both towns grew up on terraces looking over the alluvial plain, protected from the Zambezi's floods.
- Secondly, the proximity of farmland, or at least of that which lies along the river, reached by paths which radiate out from the towns.
- Thirdly, the high aquifer level, which means that water, can be reached by the sinking of traditional wells.
- Finally, the location of various neighbourhoods along main roads, which, as well as being communication links, are also sites of production and trade.

These factors combined have led to Caia being built in an arc, with the colonial centre below the apex of the curve and the spontaneous settlement lying along it, from north to south, mainly on the other side of the railway. Within this context, the old colonial centre can be seen to retain its own identity, with a big rectangular square at its centre from which streets branch out, leading all the way into the new *bairros*.

In Sena's case these settlement factors meant that the town developed linearly, stretching from the edge of the terraces in the east to the hills in the west and forming a corridor along which the traditional *bairros* have grown up to the north and south of the railway depot, where the line turns north-east to cross the Zambezi over the imposing Dona Ana bridge.

Both urban designs have reasserted the importance of these settlement factors and hence the attention that needs to be paid to protection from floods and erosion; to access to clean water for the most vulnerable sections of the population; to agro-urban relations, which are the basic source of livelihood for most families and, lastly, to the reference represented by the bigger roads. This has meant that the existing shape of the towns, which is originated by these factors, was largely retained and thus there was a need to think very carefully about any choices that would involve changing the original structure of the towns, even when dictated by emergency situations, like big construction projects, or those involved in the resettlement policies.

Great care was taken, particularly in Caia, not to impose a rigidly orthogonal plan on the town, as this would have seemed inappropriate, both in relation to the old colonial area, still able to bestow a decidedly urban air upon the town, and to the lay-out of the spontaneous *bairros*. In the case of Sena, however, the very shape of the settlement seemed to call for expansion along geometric lines.

The new centralities

Both urban designs included a network of roads, which marked out the grid of the urban development; the locations of the most important constructions foreseen in the plan, the building lots, and the system of parks and public spaces.

In the case of Caia the urban design was meant to rearrange the many scraps of the urban fabric into a single lay out, and in that of Sena, to give the town greater cohesion starting from a more homogeneous structure.

This has been done using a network of roads and, most importantly, by creating new public spaces which would go on to generate new centralities. The intent, as has been mentioned, was to make sure that the rapid transformation of the two old colonial town centres, in which all the new services, and the modern buildings, were being concentrated, did not cause a rift between them and the spontaneous *bairros*, where the peasant families lived. In both towns the relocation of the markets was a key opportunity to create one of these new centralities.

In Caia the small market structure in the *bairro de cimento*, had become too small and many of the petty traders had moved out and set up their stalls in the gaps between the old colonial buildings (almost all of which were in ruins at the time). Then, with the buildings restored, a street market suddenly seemed out of keeping with the smart new centre and its functions.

In Sena, on the other hand, the petty traders (putting up their stalls in the shelter of the few commercial buildings built in lasting materials) had taken over the considerable expanse of ground between the town centre and the edge of the terrace beyond which the area liable to flooding began, even spreading down into this last. Here too there was the problem, for reasons similar to those in Caia, of the relocation of the many stalls.

In Caia the plan situated the new market centrally, with reference to the new urban shape; a centrality, moreover, reinforced by the proximity of the station, which had been reopened in conjunction with the restoration of the railway line. In Sena the new market was situated in an area next to the centre, although initially the administration had been to set it apart, outside the town perimeter. The final decision was intended to emphasize the market's importance as the real economic heart of the town.

The two markets, which are vital to the urban economy, still predominantly sustained by elementary exchange operations, were therefore also meant to become sites of interaction – both spatial and social – between parts of the towns doomed otherwise to being cut off from each other.

Urban requalification

On the whole, the *bairros* where the peasant families live, particularly the oldest, like Amilcar Cabral in Caia or XXV de Setembro in Sena, appear charming; the combination of traditional dwellings (some of which are very elaborate), open spaces and green areas, along with the care with which individual *mudzi* (households structures) are maintained, make them appear pleasant places to live. In other words, they seem far removed from any concept of marginality; they are, to all intents and purposes, areas of countryside transposed to the town.

These *bairros*, however, have no road systems – the dwellings, or rather family compounds, were built without any supporting infrastructure; the clean water supply is not adequate, some of the wells are still of the traditional type and even the improved wells are subject to pollution through contaminated ground water seepage from their surroundings. The *bairros* are also subject to surface water flow during the rainy season, often causing erosion, which makes life very difficult for their inhabitants. Then there is the further problem of waste disposal – rubbish heaps behind the dwellings are often just burned – and, finally, the very complex problem of the lack of a sewage system.

The idea of a unified town comprising different, but permeable, areas, which was fundamental to the two plans, was translated, with reference to these problems, into a

phased improvement program. An effective model, developed by the Faculty of Architecture and Physical Planning at the university in Maputo, as part of a project financed by Habitat (MICOA, 2005), was adopted for Caia and Sena. The plan involves the construction of a network of all-weather roads within the *bairros*, but doing this without compromising the original spatial organization and usages. Surface water drainage and some basic services are put in place as the roads are being built.

In order to make the upgrading as effective as possible, steps were taken to create synergies between foreign aid projects focused on the rehabilitation of the water mains and extension of the water system. The limited scope of these projects, which, in both towns, extended little beyond the boundaries of the town centres, prompted the setting up of a scheme to upgrade the wells in the spontaneous *bairros*. It is, however, hoped that in the future it will be possible to extend the town water mains out to the spontaneous *bairros*.

The combination of these improvements, along with guaranteed access to land, should be able to ensure acceptable living conditions pretty well immediately.

Implementation

The plans foresaid the implementation of these decisions through:

- Traditional cartography that maps out land use
- Detailed planning
- Priority interventions.

The areas to be developed have been divided into blocks by the main roads. For these blocks specific plans have to be drawn up (some of which are finished and are already being implemented), so that the local authorities can ensure gradual, steady growth and efficient management, with any necessary technical support from the Province.

Priorities are being decided for the requalification of the spontaneous *bairros* (requalification experiences have already been put into action in two *bairros* in Caia), according to how built up the area is, the proximity of the main infrastructures, and the extent to which durable building materials have been used. A detailed plan for the requalification of each *bairro* will have to be drawn up, involving the whole community and with the collaboration of traditional authorities and the district administration.

The new centralities above mentioned (a part from the markets, new services and areas for productive activities) have also to be designed in detail: one of these designs, for the Caia market, has been completed and is being implemented.

On the whole the two planning documents include a priority actions plan, to be implemented in the first three years in which the plans are in force, and a time line in order to ensure that the plans can be implemented over a ten-year period.

Two very serious problems still remain unsolved. The first is pollution, caused by both the lack of a sewage system and the build-up of rubbish – usually put into pits dug just beside people's homes, or else thrown onto waste land and set alight. The administration did not consider this issue to be a priority. The second problem is energy supply, which until now has come from the burning of firewood, leading to the deforestation of a wide area around the two towns. Although everyone recognizes the urgency of this problem, its solution has been referred to the competence of the *Plano de uso da terra* (Land Use Plan) to be drawn up for the whole district, as it is considered that this is the scale at which the problem can best be addressed.

Conclusions

The towns of sub-Saharan Africa, until now almost exclusively studied by economists and geographers, are now posing problems which seem of relevance to town planners too.

In the first place, it seems clear that in many countries an evolution of urban systems is taking place, centred more and more in the small and medium sized towns, which are proving to be capable of containing the rural exodus. This is leading local administrations to adopt planning instruments in order to control and direct the consequent growth of their towns.

In the second place, it also seems clear that the rapid shift towards modernity in towns which are still predominantly rural is polarizing rich and poor and thus threatening the old social cohesion.

In the third place I believe that a plan concentrating entirely on the regularization, or delimitation, of urban development would not adequately tackle this polarization.

In order to combat polarization it seems necessary to integrate, in as far as is possible, all the different elements of an urban space, thus discouraging both spatial and social division. The planning experiences carried out in Caia and Sena were intended to realize this integration, through the application of more appropriate models of urban design.

In particular, the use of zoning was sparing, given that, although useful in the assignation of rights, it can, by drawing boundaries, encourage division. A project based approach was adopted, in the belief that the coherent implementation of planning decisions would be better guaranteed through direct interventions, rather than land use regulation. The various projects have been integrated into an urban fabric, which, designed referring back to the original pattern of settlement by peasant families around the colonial centre, seemed to best guarantee the integration of the former into the changing town.

Lastly, a complaint made by many observers deserves consideration: the supposed inadequacy of local administrations faced with rapid change in the rural areas. It is undoubtedly a criticism I share, but it must also be said that the planning experiences conducted in Caia and Sena revealed the presence of an effective capacity of the local administration, which, however, can only operate on three conditions. The first is that it is not suffocated by excessive bureaucracy; the second that it has technical back up, in the form of people who can work with the decision makers and local actors and contribute to the training of new administrators; the third is that it has at disposal sufficient financial resources to implement its choices.

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