

Planning African rural towns

The case of Caia and Sena, Mozambique

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UNIVERSITÀ DEGLI STUDI DI TRENTO
Dipartimento di Ingegneria Civile
e Ambientale

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Doctoral School in Environmental Engineering

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“Só a Antropofagia nos une. Socialmente. Economicamente. Filosoficamente. Única lei do mundo. Expressão mascarada de todos os individualismos, de todos os coletivismos. De todas as religiões. De todos os tratados de paz. [...]

Só me interessa o que não é meu. Lei do homem. Lei do antropófago [...]

*A alegria é a prova dos nove.
A luta entre o que se chamaria Incriado e a Criatura – ilustrada pela contradição permanente do homem e o seu Tabu. O amor cotidiano e o modusvivendi capitalista.
Antropofagia. Absorção do inimigo sacro. Para transformá-lo em totem.
A humana aventura. A terrena finalidade.”*

Oswald de Andrade, *Manifesto antropófago*, 1928

Preface

The present study is part of a wider research and spatial planning activity conducted over the last seven years by the DICA—Department of Civil and Environmental Engineering (University of Trento) in the district of Caia, Mozambique. The DICA, in fact, is involved in a decentralized cooperation program, named “*Il Trentino in Mozambico e il Mozambico in Trentino*”, between the Provinces of Trento (Italy) and Sofala (Mozambique). The Province of Trento acts in Mozambique through the CAM—*Consortio Associações com Moçambique*, a consortium of local associations that is responsible for managing the program.

The program aims to promote cooperation in different fields, including urban planning and management, between the local communities of Trento and Caia. The public sector reform in Mozambique, in fact, has recently transferred this responsibility from provinces to district administrations without providing them with adequate financial resources and technical instruments. Therefore, the local administration of the district of Caia asked for the support of the CAM, which in turn sought expert advice from the DICA. In particular, support was required in the drawing up of two master plans for the small towns of the district: *POTU—Plano de Ordenamento Territorial e Urbanização da Vila de Caia* (2006), and *PEU—Plano de Estrutura Urbano da Vila de Sena* (2009).

By way of the program “*Il Trentino in Mozambico e il Mozambico in Trentino*”, I had the opportunity to conduct a two-month field research in the district of Caia in the summer 2008. The aim was to draw up a preliminary study for the master plan of Sena, the results of which are discussed in this thesis. Furthermore, I was asked to teach a two-week intensive course on urban management to the technicians of the Spatial Planning Office of the district of Caia. This was an important opportunity that allowed me to set the tone of the research, from the very beginning, with the actors to whom it is principally addressed: the local technicians that are responsible for managing the transformations of Mozambique rural towns.

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Where not specified, photos were made by me and figures where the product of my own elaboration.

Summary

Over the last few years, academic research and international aid organizations have been underlining the important role that the small towns of Sub-Saharan Africa have in promoting development in the surrounding rural areas and in reversing the polarization trend of major urban centers. Nevertheless, defining the particular characteristics of these towns—which the majority of African population lives in or refers to—and analyzing the relevant transformations that they are experiencing are still unsolved issues. Moreover, until now, policies, programs and projects related to African urban development have focused mainly on major urban centers, while small towns have an almost complete lack of planning on how to accommodate people coming from the surrounding rural areas and how to provide them with services.

The aim of the research is to define a conceptual and methodological framework to support the spatial planning activity of local administrators and technicians in Mozambique small towns.

To reach the objective of a spatial planning process that results from the thorough comprehension of this particular typology of human settlement, the research was based mainly on the analysis of case studies: Caia and Sena, two *vilas rurales* situated in a rural district in central Mozambique along the Zambezi River. Together with literature review, a field research was conducted by the author in the district of Caia that consisted of the analysis of already existing data and documents, direct observation, interviews with institutional and non-institutional actors, and a household survey in Sena. Afterwards, a SWOT analysis was used as a tool to manage such a greatly varied amount of information. The research process allowed to identify the main features of the small towns, that are here denominated as “rural towns”, and to understand the major trends related to the “rur-urbanization” process.

The rural town is defined as a hybrid settlement pattern in which persisting elements of the rural world melt together with emerging urban characteristics. *Vilas rurales*, in fact, are traditionally rural contexts characterized by a dominance of vernacular settlement patterns and architectures. The socio-economic and cultural features of the towns, as well as their physical structure, are rapidly changing as a consequence of the ongoing “modernization”. The risk is that a rapid and uncontrolled urbanization process could threaten the natural, economic and cultural bases of the small towns without adequately replacing them. Thereby, some suggestions follow on how spatial planning can contribute to the sustainable growth of the rural towns.

The central idea that is proposed herein is to preserve the rural characteristics, which are widely present within the rural towns, and to integrate them with the emerging “urban”

features. This strategy aims to support the subsistence activities adopted by the majority of the population and to outline a spatial planning process that responds to the specific characteristics of this typology of human settlement by culturally appropriate means.

The thesis consists of three parts. The first part presents the results of the literature review. The origin of the debate on small and intermediate urban centers of Third World countries in the late 1970s is presented in Chapter 1 while Chapter 2 actualizes this debate, also in the light of major processes occurring at global level and affecting African small towns. Chapter 3 stresses the big gap in urbanization theory and practices related to small towns of Africa and focuses on their characteristic of being predominantly vernacular settlements in which a “deculturation” process” is taking place as a consequence of the imposition/adoption of western cultural models. The second part of the thesis presents the analysis of case studies. The research methodology is outlined in Chapter 4. In Chapter 5, Caia and Sena are contextualized within their macro-institutional and regional contexts. Then, an analysis of the rural towns is proposed at the local level. Chapter 6 offers a snapshot of the emerging lifestyles in Sena through the results of the household survey. The rur-urbanization process is described in Chapter 7, first by analysing the spatial evolution of Caia and Sena from a historical perspective and, then, by proposing four key topics that identify the main features of the rural towns and describe the major trends related to the rur-urbanization process. The third part of the research, Chapter 8, presents the conclusions. First of all a definition and an assessment of the rural town is offered. Moreover, a conceptual framework is presented that relates key topics, risks, planning principles and actions related to the spatial planning activity in the rural towns. Finally, a methodological framework is proposed that translates the conceptual framework into more operational terms by outlining a spatial planning process aimed at the rural towns.

INTRODUCTION

According to United Nations' projections, more than one billion people will move from rural areas to cities and towns of Third World countries by 2030, and small towns of Sub-Saharan Africa will be absorbed by a non-insignificant part of this urbanization wave. Therefore, managing the urban growth of these human settlements is a pressing issue (UN-Habitat, 2003; 2010).

Small towns are generally defined as those centers, with a population of less than 20,000 inhabitants, that perform urban functions. Most of the population of Sub-Saharan Africa actually lives in these settlements or refers to them for economic, social and political transactions (Hardoy and Satterthwaite, 1986). African small towns are essentially towns of farmers, characterized by a dominance of vernacular settlement patterns and architectures, and in which the development of strictly urban economic activities and functions are founded in a society whose features are typically rural.

In the last two decades, however, relevant processes have been determining the “modernization” of the traditional characteristics of these towns. Globalization of the economy, modernization of transport and communication infrastructures, increasing rural-urban linkages, rapid urbanization, and administrative decentralization are deeply transforming both the physical structure of the small towns and their socio-economic and cultural features. The result is a hybrid settlement pattern—here defined as “rural town”—in which persisting elements of the rural world melt together with emerging urban characteristics.

Focusing the problem

Rural towns of Africa are in an extremely delicate situation. The above-mentioned “modernization” is altering the traditional socio-economic, environmental and institutional balance of the small towns and is producing a wide range of undesirable effects on local urban systems. In particular, the risk is that a rapid and uncontrolled urbanization process could threaten the natural, economic and cultural bases of the small towns without adequately replacing them. This could lead to (or increase) environmental degradation, socio-economic polarization, loss of local cultural heritage, and social and political exclusion. Or, on the other hand, rural towns could offer the opportunity to experiment with more “sustainable” patterns of urban growth with respect to those that have characterized the expansion of major cities.

The search for adequate policy responses and actions related to the management of the urban

growth is one of the main declared objectives of the national governments of Third World countries as well as of international organizations. However, there is a big gap in both urbanization theory and practices related to small urban centres. Up to now, urban development projects have centred mainly on *megacities*, while small towns almost completely lack planning in regards to how best to accommodate people moving from the surrounding rural areas and to provide them with services (UN-Habitat, 2003). Actually, local governments and international actors operating in the small towns of Africa generally propose small-scale interventions (urban projects) or sectoral programs (i.e. infrastructural improvement, *site-and-services*, upgrading programs), rather than a consistent and organic activity of urban planning. Ordinary management or, at best, the upgrading of already existing urban contexts are generally the maximum objectives of local administrations, to whom planning the urban growth represents an unattainable goal under present conditions. Furthermore, the few experiences of spatial planning in small towns are generally influenced by Western cultural models, to the point that a “deculturation” process can be noticed (Latouche, 1996). The physical transformation of the towns, in fact, often shows the loss of cultural identity and a break with the rural culture. New settlement patterns and architectures generally refer to international housing models, which are passively transferred to small towns without considering the specific characteristics of the location or the local culture (Oliver, 2003). Finally, another central question is the lack of economic and technical resources of the local administrations, which represents a big constraint on urban planning and management.

The inadequacy of planning experiences is not the only problem. Academic research also pays poor attention to this argument. Today the role (effective or potential) of small towns in Africa in promoting a more equitable rural development and in reversing the polarization trend of major urban centers is widely recognized (Rondinelli, 1983; Hardoy and Satterthwaite, 1986; Baker, 1990). However, small towns have always been considered only from the regional development perspective and, more specifically, mainly through a functionalist approach (Aeroe, 1992). The interest in small towns of Africa is based on their potentiality as possible *foci* for economic interaction and, consequently, so far only a few efforts have been made in defining the complex “nature” of this typology of human settlement and the characteristics—also physical—of its urbanization process. Moreover, individuating planning principles, which could guarantee the sustainable growth of these small towns, is still an unsolved issue.

Objectives of the research

Considering the above-mentioned gap in literature and the inadequacy of current urban planning and management strategies, the present research has two main objectives.

1) To understand and describe the main features of African rural towns and the

transformations that are involving them, with a specific focus on the most negative effects of the ongoing urbanization process on the physical structure of the towns.

2) To develop a conceptual and methodological framework to support the spatial planning activity in African rural towns. This should be appropriate to the particular characteristics of this typology of human settlement: it should enhance local human, natural and cultural resources and avoid the undesirable consequences that have characterized the expansion of major cities.

The conceptual and methodological framework, then, is intended as an action-oriented instrument to support the spatial planning activity in African small towns by local administrators and technicians, to whom recent public sector reforms have assigned this responsibility for the first time.

To reach the objective of a framework that is culturally appropriate to African rural towns and that is based on the deep comprehension of their particular nature, the research was based on the analysis of two case studies: Caia and Sena, *vilas rurales* situated in a rural District in central Mozambique along the Zambezi River. These urban centres can be considered representative contexts within which to analyze the main features of African small towns, as well as the transformations that are involving them, as it will be explained in the second part of the thesis. Furthermore, Caia and Sena present two characteristics that are generally recognized as the most important precondition for harmonious urban growth and “generative” urban-rural relationship: an—almost—egalitarian land-owning structure and the devolution of powers to the local administration (Hardoy and Sutterthwaite, 1986; Southall, 1988; Rondinelli, 1983).

Through in-the-field research, it was possible to empirically test the general hypothesis resulting from the literature review and to obtain indications for the spatial planning activity.

Key strategy

One important conclusion of this research is that African rural towns could experience more “sustainable” patterns of urban growth with respect to those observed in major urban centers, in terms of: a more equitable socio-spatial organization; a more sustainable relationship between the anthropic activity and the environment; more inclusive governance mechanisms; and valorisation of local human, cultural and material resources. Nevertheless, in order to obtain this result, the spatial planning process should be culturally appropriate and respond to the specific characteristics of this typology of human settlement.

The central strategy for the planning activity has been individuated in the valorisation of the rural characteristics of the small towns and in their integration with emerging urban features. Two main reasons determined the choice of this strategy. The first one depends on having understood, through the analysis of the case studies, that the preservation of the rural characteristics of the small towns is essential to support the survival strategies of most of the

population. Moreover, some planning practitioners and scholars maintain that this rural component, whatever the names used to define it—informal, rural, vernacular or traditional—is a useful resource for planning practices (Roy, 2005). In fact, facilitating the rural component to adapt itself to a town means also helping the town to enact its role of being a place of social interaction and satisfying of all its inhabitants' needs.

The second reason is that protecting the rural characteristics of the small towns is a useful strategy to reverse the ongoing “deculturation” process. To avoid the colonization of western models, in fact, it is here suggested to enhance vernacular settlement patterns and housing typologies. This means reinterpreting the vernacular tradition by culturally appropriate means (Oliver, 2003). “Modernity” is not rejected, since external influence and technological transfer are not inimical to the passing on of traditions. The focus, however, is on the introduction of culturally-compatible changes, whose acceptance may require acquisition, testing, and assimilation or rejection. Also in this perspective, the full participation of the members of each culture concerned is vital to the satisfactory application of this strategy.

How to preserve the rural characteristics of the small towns and to combine them with modern ones within an inclusive spatial planning process is a central question that has been explored by this research.

PART I

Theoretical framework

Chapter 1

The origin of the debate on small and intermediate urban centers in Third World countries

1.1 Theory of modernization

The debate on the role of small and intermediate urban centres of Third World countries started at the end of the 1970s as a reaction to the failure of foreign aid and national development policies that had been carried out during the previous two decades. These policies were inspired by the “theory of modernization”. This postulated that Third World countries, mostly former colonies of Western countries, had less developed economies but could have potentially reached the same level as the Western World. The “Rostovian take-off model” (also called "Rostow's Stages of Growth") is one of the main contributions to the “theory of modernization”. It is based on the idea that the path to economic modernization is the same for each country and it consists of five basic stages, of varying length: traditional society; preconditions for take-off; take-off; drive to maturity; age of high mass consumption. According to Rostow, countries go through each of these stages fairly linearly, starting from a condition in which the structure of the State is dominated by the so-called “traditional society”, in which most of the population is involved in the primary sector, mainly subsistence agriculture. This first stage is followed by massive growth of industrialization, which is subsequently replaced by tertiary activities in a context dominated by an integrated economy based on interdependent linkages (Rostow, 1960). With reference to the “theory of modernization”, most Third World countries were considered to be still at the onset of modernization at the beginning of the 1950s, and their economic growth would have occurred by following the same developmental path as Western countries. According to a dualistic construction based on Lewis’ (1954) model, the modern sector would have progressively replaced the traditional sector, and the same would have happened with a monetary economy replacing the subsistence economy.

Industrialization and urbanization were two important elements of this conception of the “modernization” process. Third World nations, at the onset of modernization would concentrate investments—and therefore population—into one or a few large cities, the so-called “growth-poles” or “growth centres”. This was seen as the most efficient strategy to

promote development for a variety of reasons associated to agglomeration economies and the inertia of infrastructural development (Alonso, 1980). Concentration and megacity growth were considered as a function of development within the modernization approach. Similarly, rural-to-urban migration and the transfer of labour from rural agriculture to urban industry was perceived as a positive process, which was expected to occur as a consequence of limited opportunities in rural areas and of the allure of modern cities. The central idea of this theory is that very large cities help a nation to concentrate its meagre financial resources efficiently. At a second stage of the modernization process, the high rates of output resulting from this strategy would have automatically spread the benefits of development through trickle-down effects outside the major metropolitan areas, thus reversing spatial polarization and alleviating the effects of the inevitable “uneven development” (Mera 1973; Wheaton and Shusido, 1981). Modern institutional forms, technologies and mindsets would have also diffused out from the largest metropolitan areas and a process of urban/hinterland, intraregional and interregional integration would have occurred. This trickle-down effect would have eventually ameliorated the worst inequalities and the inevitable social disequilibria produced by the first phase. Technology was seen as the prime engine of social change, which would have finally overridden older forms of social organization and replaced them with its own institutional matrix. A rough convergence of First World and Third World development patterns was expected, according to an ethnocentric, one-sided perspective that focused basically on the Western world and culture (Kasarda and Crenshaw, 1991).

1.2 Failure of the theory of modernization and its effects on national and local urban systems

Today, there is a growing concern about the failure of the “theory of modernization” and of the policies it inspired. The expected “trickle-down” effects never took place and the negative consequences of spatial policies that determined the concentration of industries, wealth and almost any form of public investments in only one or a few larger metropolitan centres are visible still today in almost any Third World country.

These negative effects can be analysed on a national scale in terms of unbalanced national urban systems and stark regional disparities. At the same time, it is also possible to observe a wide range of problems on a local scale related to the most extraordinary patterns of the Third World’s urban development of the last century: the megalopolis and the growth of city-regions.

The unbalance in Third World national urban systems is testified to by *urban primacy*, that has been defined as a condition where a single city dominates other cities in the intranational urban system. Even if the concept has been modified to include the notion of two-city primacy (e.g. Brazil’s Sao Paulo and Rio de Janeiro) and regional multiple-city primacy (e.g.

India urban system), Third World countries generally tend to single-city primacy (e.i. Uruguay's Montevideo, Thailand's Bangkok, Tanzania's Dar es Salaam). Urban primacy is thought to denote a lack of economic, political and social integration in any given system of cities and is considered a symptom of underdevelopment. Moreover, it is seen by some economists as a structural constraint against future economic growth (Lipton 1977; Gugler, 1982; Armstrong and Mc Gee, 1985).

The enduring polarization process has produced the well-known phenomenon of the growth of the "megalopolis", with populations of more than 8 million inhabitants, and that even more spectacular form of "hypercities", which are the most extraordinary pattern of Third World's urban development of the last century. With more than 20 million inhabitants, these human settlements exceed any urban form known up to the 20th century and represent new post-urban structures¹ (Davis, 2006). Furthermore, cities are merging together and create extended metropolitan regions. These new configurations take the form of mega-regions, urban corridors and city regions (UN-Habitat, 2008), which are generally the most dynamic parts of a national system².

In these new urbanization patterns, urban and regional development melt together. The distinction between what is urban and what rural has faded away with the expansion of the cities along transportation corridors that surround and encompass small urban centres and villages, which undergo big transformations *in situ*. Similarly, some Latin American city planners assisting at the consolidation of polycentric urban systems stress that they present no clear boundaries between rural and urban. The geographers Adrian Aguilar and Peter Ward (2003) have proposed the concept of the "Mega City Region" to describe the contemporary peri-urban development around Mexico City (Mexico), Sao Paulo (Brasil), Santiago (Chile) and Buenos Aires (Argentina). Lower metropolitan population growth rates coincides with a more intense circulation of goods, individuals and capitals between the city centre and its hinterland, with less compact boundaries between urban and rural, and with a delocalization of manufacturing activities towards metropolitan periphery and beyond,

¹ Some examples are Mexico City (Mexico) and Mumbai (India), both exceeding twenty million inhabitants, or Lagos (Nigeria) that reached a population of 13,627,000 in 2010.

² Mega-regions are polycentric urban clusters surrounded by low-density hinterlands. They are natural economic units that result from the growth, convergence and spatial spread of geographically linked metropolitan areas and other agglomerations. The extended metropolitan region Rio/Sao Paulo (RSPER) in Brasil could represent an extreme example of mega-region. Urban corridors, on the other hand, are characterized by linear systems of urban spaces linked through transportation networks. In Asia, examples of this phenomenon are the urban-industrial megalopolises of the deltas of Zhujiang (Hong Kong) and Yangtze (Shanghai) rivers and the corridor Beijing-Tianjin. Other dynamic and strategic cities are extending beyond their administrative boundaries and integrating their hinterlands to become city-regions. These are emerging in various parts of the world, turning into spatial units that are territorially and functionally bound by economic, political, socio-cultural, and ecological systems. The Megalopolis del Centro de Mèxico (MCM) is an example of this; or the big conurbation that is growing along the Guinea Gulf, with Lagos as its fulcrum.

towards peri-urban areas, the “twilight zone” surrounding megalopolis.

Contrary to the expectations of modernization theorists, which described megacities as the cradle of modern industrial production and prosperity for the urban population, contemporary Third World megalopolis must face enormous problems at local level. From the literature review, it was possible to underline some of the major problems associated to the phenomena of the megalopolis and growth of city-regions, which are described in the following notes.

1.2.1 Overurbanization and urban dualism

When assessing the phenomena of megalopolis, hypercities or mega city regions, scholars usually refer to the category of “overurbanization”. This is generally defined as the tendency in developing countries for urbanization to exceed either industrial or overall economic development. Overurbanization is intended as a structural condition in Third World major cities and denotes saturated labour markets, truncated opportunities in rural areas, overburdened public services, the isolation of large segments of the urban and rural population from the fruits of economic growth, and retarded economic growth due to the high costs of urban development (Gugler 1982; Bairoch, 1988, Gilbert and Gugler 1982; Lipton 1977).

Another category often used to analyse the Third World urbanization process, and that depends on the first one, is that of “urban dualism”. According to the economic development model of Lewis (1954), Third World cities’ growth was usually accompanied by the dichotomy between the capitalist economic sector and the subsistence one³. Many studies promoted in the 1970s by the ILO-International Labour Office, which aimed at investigating the labour demand in many Third World cities, were based on this dualistic theory and proposed a separation between a formal sector and an informal sector of the urban economy⁴. The informal sector was considered as the complex of ways the immigrated population thought of to survive because of their exclusion from the saturated formal labour market. Informal activities, then, were considered as residual activities, the dimension of which was

³ Lewis distinguishes a “capitalist sector”, which is constituted by that part of the economy that uses a reproducible capital and offers profits to the capitalists that use it, from the “subsistence sector”. This sector includes not only traditional agriculture, but also all those urban activities in which the marginal productivity of labour is very low and reproducible capital is not used. According to this model, development will be spontaneously realized, thanks to the accumulation of capital in the capitalist sector and to the unlimited—and thus low-cost—offer of manpower coming from the subsistence sector.

⁴ The informal sector is considered the one that includes all small-scale activities led in Third World cities but, differently to what happens for the subsistence sector that for Lewis is just a way to mask unemployment, the activities of the informal sector are here considered an important part of the urban economy. In a report of the Economic Commission for Africa, it is stated that “...basically, the informal sector may consist in small scale production and marketing activities covering essential goods and services which are requested by the mass of the population” (Eca, 1985).

determined by the number of immigrants exceeding the job opportunities.

Dualistic theories were very useful in underlining one of the major differences between Third World cities and major urban centres of more industrialized countries. They were, however, absolutely reductive of the complex reality of Third World cities' economies. One of the problems of these studies is the substantial lack of interest towards the characteristics of the subsistence sector and towards the study of the rural areas, where this sector was widely diffused⁵. What was still missing in the debate was the recognition of the persistence within Third World cities of modes of production, consumption and behaviour borrowed from rural societies, as well as the research of the variety of possible relations between different economic forms⁶ (Diamantini, 1996). One of the most interesting contributions going in this direction was by Samir Amin (1976). He stressed the continuity of tradition in the urban centres, where pre-capitalist economic forms do exist and present characteristics that are different from those of the rural areas of origin⁷. On the other hand, rural areas cannot be considered "uncontaminated" subsistence contexts, as they are deeply transformed by the contact with monetary economy⁸. Furthermore, Samir Amin noticed that the persistence of pre-capitalistic modes of production doesn't lead to their separation from the capitalist economy, but rather to their integration. These economic systems, separate in origin, end up presenting very uncertain boundaries. It is exactly the contrary of what was postulated by dualistic theories, which insisted on the stark separation in the economy of Third World countries between two non-communicating systems and on the progressive reduction of space for the subsistence economy, doomed to disappear. On the contrary, Samir Amin

⁵ Important studies, centred principally on rural areas, were lead in the 1960s by anthropologists. These studies allowed to define important characteristics of the subsistence sector also in the cities. Moreover, Sahlins (1980) individuates some characteristics of this economic form: production directed to self-consumption (that is to satisfy the needs of the producers), sexual division of labour, autonomous access to production assets, centrifuge relation between producing units. As producing unit within the subsistence economy is considered the household, which is the unit where decisions are taken, concerning production, allocation and use of labour forces and resources. Objectives consist not in the research of abstract richness, but on the fulfilment of family needs. This assumption could be an explanatory factor for a distinguishing characteristic of subsistence economy: the underproduction. Sahlins individuates in the "domestic mode of production", the most important structure of primitive economies.

⁶ An important turning point in the debate is determined by the intuition of the researchers of the Rhodes Livingstone Institute, studying some Asiatic cities. In particular, Mc Gee (1974) talks about the coexistence within urban contexts of two different economic systems, a "capitalist system of production" and a "peasant system of production". Moreover, Lipton (1977) uses the concept of "family mode of production" to explain the nature of the informal sector, that comprehends both urban and rural subsistence activities.

⁷ First of all, agriculture is not anymore the subsistence primary source and it is substituted by urban activities, which are basically based on monetary circuits. Moreover, subsistence urban activities present signs of a contamination with technological modernization.

⁸ The same households, in fact, can both have subsistence agriculture and at the same time commercial agriculture; or the agricultural activity can be alternated—through seasonal commuting—with salaried labour in capitalist firms.

affirms that the subsistence sector is not subordinated to the capitalist one, but—depending on the context—demonstrates a certain autonomy from it, or forms an integration and even competition with it.

1.2.2 Favelization

The coexistence of two different—but often interdependent—socio-economic systems within the same city is reflected also in a stark socio-spatial segregation of the population within Third World major cities. The population, in fact, is mostly organized into two distinct urban systems, each with easily recognizable physical characteristics. These systems differ normally in terms of settlement patterns, urban morphology and housing typologies. They also present large disparities in land-owning structures, as well as in services, infrastructures facilities and population density, being the informal part characterized by poor housing, overcrowding, lack of services and insecure tenure.

The 2003 United Nations' Global Report on Human Settlements underlines that the current huge increase in urban population amounts to a crisis of unprecedented magnitude in urban shelter provision. Every year, the world's urban population is increasing by about 70 million. These people all need to be provided with shelter, employment and urban services. The stretched capacity of most urban economies in developing countries is unable to meet more than a fraction of these needs. In fact, neither national governments, nor the private sector in Third World cities have been able to meet the growing demand for basic shelter and it is estimated that the formal sector is able to cover no more than 20% of the housing need. As a consequence, the informal sector is providing most of the new employment and housing in environments that have come to be known as informal settlements or slums. Here, more than half of the population in many cities and towns of developing countries are currently living and working. The phenomenon is so massive that within the Third World "favelization" has become synonymous with urbanization. Sometimes the informal settlement is spontaneous and self-organized by the people in need (squatter settlements), but it more often depends on the speculation of developers and agents (illegal settlements and subdivision). Approximately one billion people, 32% of the world's urban population, currently lives in slums and does not have access to adequate housing, drinkable water or sanitation.

Slums and urban poverty are not just a manifestation of a population explosion and demographic change, or even of the vast impersonal forces of globalization. The exponential growth of the "informal city" must be seen as the result of a failure of housing policies, laws and delivery systems, as well as of national and urban policies. Past approaches to satisfy the housing need in Third World cities, such as public housing, sites-and-services, core housing upgrading, and government assisted self-help programs, have been demonstrated to be

absolutely inadequate⁹ (UN Habitat, 2003).

1.2.3 Environmental deterioration

The problematic interaction between the anthropic activity and the environment in megalopolis, hypercities and megacity regions is an alarming issue.

The spontaneous expansion of developed areas generally has strong impacts on the occupied territory such as reshaping land surfaces; filling valleys and swamps; extracting and moving large volumes of clay, sand, gravel and crushed rock; tapping water sources; and channelling rivers and streams (Douglas, 1983; 1986). At the same time, the haphazard localization of the population takes often place in hazardous areas that are left out of the formal market because they are unhealthy or even risky.

Cities transform environments and landscapes not only within the developed areas but also for considerable distances around them. First of all, city-based enterprises, households and institutions have a high demand for resources that are found outside the cities' boundaries (products of forests, rangelands, farmlands, watersheds or aquatic ecosystems). Moreover, solid, liquid and air-borne wastes generated within the city and transferred to the surrounding region has strong impacts, especially on water bodies where liquid wastes are dumped without the measures to limit their environmental impact (Hardoy et al. 2001).

Furthermore, poor sanitation, combined with an unsafe water supply and a lack of hygiene, claims the lives of many slum dwellers every year. Against a global background of urbanization and continuing industrialization, modern environmental health hazards have become major contributors to the environmental diseases affecting the African continent. The major such hazards include water pollution from environmental degradation and industrial operations, urban air pollution from motor vehicles, radiation hazards, climate change, and the emergence or re-emergence of infectious diseases. Industrial pollution, in particular, is becoming highly concentrated in expanding urban areas, and as a result pollution intensity in Africa is among the highest in the world. Such environmental health hazards affect many urban residents even in countries that have made significant progress in the provision of access to services and housing¹⁰ (UN-Habitat 2008).

⁹ The international community has recognized providing adequate responses to the housing need of the world urban citizens as a priority, as testified to by the "Millennium Development Goal 7, Target 11": adequate shelters for all (Millennium Summit of the United Nations, September 2000). Moreover, the theme of the "World Urban Forum 4" (November 2008, Nanjing, China) was "harmonious urbanization: the challenge of balanced territorial development". Furthermore, for World Habitat Day 2008, the United Nations chose the theme of "Harmonious Cities" to raise awareness about one of the most pressing issues that the world is facing today: rapid urbanization in Third World countries and its impact on communities, cities, economies and policies.

¹⁰ In Dakar, for instance, the prevalence of diarrhoea among children remains high, even compared with rural areas: 28.1 percent in the Senegalese capital, vs. 16.7 percent in smaller cities and 22.4 percent in rural areas. In Dakar, access to improved water and sanitation, durable housing, waste collection and sufficient living areas has

1.2.4 Social and political exclusion

The last negative effect related to Third World cities' growth concerns the governance of the phenomenon and, more specifically, the exclusion of poor people from the decision-making process.

The failure of policy is at all levels—global, national and local. “At the global level, policies that have weakened national governments without any countervailing central control appear to be leading to an unrestrained globalization that is accommodating greater inequality and marginalization. At the national level, liberalization and the sectoral fragmentation of policy and analytical and institutional frameworks have failed to support the urban–rural and cross-sectoral dynamics that are critical both to sustainable economic growth and the distribution of its opportunities. At the local level, a startling lack of capacity to cope with, or manage, the situation has left many slum citizens in a no-man’s land of illegality, insecurity and environmental degradation” (UN-Habitat, 2003: 6).

Policies failed also in experimenting with new forms of governance and community participation, as they were rather centred on a top-down approach. This not only worsened social exclusion and spatial segregation dynamics, but affected also the implementations of the same policies and programmes (J. Borja, 2000).

In every country in the world, access to the “urban advantage”¹¹ and distribution of the related benefits in terms of opportunities, employment and services is determined by various organizations and institutions—including, crucially, the formal land and labour markets as well as public utilities. “The problem in developing countries is that most of these institutions are weak or dysfunctional, exposing them to undue influence from, or capture by, vested domestic or foreign interests. In some cities, necessary public institutions are lacking altogether, in which case essentially private vested interests fill the void and act as substitutes for institutions that would otherwise prioritize the interests of society at large” (UN-Habitat 2008:XIII). In both situations, the markets for land, basic services and labour are skewed in favour of private interests, enabling these to claim more than their fair share of the benefits of the “urban advantage”. As a result, large numbers of people do not fully benefit from the “urban advantage”, do not participate in decision-making and do not enjoy effective fundamental rights and liberties while others do live in decent, healthy and environmentally friendly places with full exercise of their citizenship.

been extended to many households, but even among these the prevalence of diarrhoea remains dramatically high (27.1 percent). It is clear that the fight against childhood diseases must transcend the traditional realm of the household in order to encompass the modern environment of disease: the neighbourhood, and the city as a whole, with all the attendant risks and harms (UN-Habitat 2008).

¹¹ The “urban advantage” refers to the abundance and variety of goods, services, amenities and opportunities which cities make available compared with rural areas. Social connections—or “human capital”—are also part of that. The urban advantage is a function of the density and scale of public, business, education, health, and cultural and other institutions a city manages to concentrate.

In particular, slum dwellers, and especially women, are too often deprived of what is generally defined as the “right to the city”¹². They can neither fully realize their productive potential nor participate effectively in the decisions that impact on their lives. They are not socially integrated and often carry the stigma of the urban area where they reside. They are also denied opportunities to contribute to the city’s cultural life and style. Furthermore, not only are most vulnerable urban groups (such as homeless or slum dwellers) excluded from decision-making processes, but they are often openly turn into targets. Their social and political marginalization is increased by the persistence of discriminatory legislation such as anti-vagrancy and anti-beggary laws combined with other methods—biased interpretation of criminal law, anti-squatting laws, misuse of anti-terrorist laws, new surveillance strategies and “zero tolerance” policies (UN-Habitat, 2008).

1.3 The origins of the debate and main theoretical views

Concerns around the failure of the theory of modernization and of the negative effects produced on national and local urban systems stimulated a debate on the need of integrating national space economies and overcoming the growing disparities between urban and rural regions. Specifically, many scholars have underlined the lack of important secondary and tertiary cities in the Third World.

Since its beginnings at the end of the 1970s, the debate on the development of a network of secondary cities has always been inextricably related to that over the most appropriate spatial structure for promoting economic growth paired with social equity. “Our interest in this subject arises from our concern to explore alternatives to processes which concentrate the comparatively high productivity and high income jobs, savings and investments in one (or a few) cities within each nation. It also arises from our concern to try to better understand how the performance of regional economies can be improved and how a more equitable spread of the benefits of development can be promoted in terms of increasing the proportion of people with both access to basic social services and physical services (for instance piped water, improved sanitation, health care services and education) and an adequate, stable livelihood” (Hardoy and Sutterthwaite, 1986:1). The same authors indicate also other reasons that stimulated their interest in small and intermediate urban centres. First of all, these are the contexts wherein most of the population of the Third World lives¹³, and within which most

¹² Some places have applied the “Right to the City” as a theoretical, political conceptual framework that refers to such aspects as enforcement, empowerment, participation, self-realization, self-determination, and different forms of protection of existing human rights at the city level.

¹³ According to United Nation’s estimations for 1980, almost four/fifths of the Third World’s population lived outside urban centres of 100,000 or more inhabitants, while in Africa and Asia, more than three quarters lived outside settlements of 20,000 or more inhabitants.

rural people and enterprises interact. Secondly, sub-national and sub-regional levels of government are located in small and intermediate centres, which could articulate local needs and possibilities as well as influence policies and resource allocation at higher levels of government. Moreover, certain of these centres could play an important role in the priorities of the national government (i.e. increasing agricultural production). Furthermore, they are crucial for de-concentrating urbanization (urban primacy) and reversing the polarization trend of major Third World cities.

The debate on the role of small and intermediate urban centres of Third World countries has developed in a rich and varied way. It has been influenced by various general theories about economic development and urbanization in the Third World as well as by different national policies. Theories and policies are clearly linked, but they are discussed separately in the following Sections for analytical purposes. Up to now, three main views can be recognized within this debate: the positive view, the pessimistic view and the intermediate position (Baker, 1990).

1.3.1 The positive view

The so called “positive” view assumed that supporting the construction of a network of small and intermediate urban centres was, conceptually and empirically, an important strategy. This strategy aimed to promote economic growth with social equity in the Third World and to reverse the polarization trend of major cities (Rondinelli, 1983).

National development strategies should have been reformulated by focusing on that part of the urban system that had previously been ignored: small and intermediate urban centres (or secondary and tertiary cities, to use other terms). Promoting the socio-economic and demographic development of secondary cities would have also benefitted the development of the rural areas, given the generally strong link and complementary relationship of small and intermediate urban centres with their rural hinterland (Baker and Claeson, 1990). Small towns, in fact, were generally seen as playing a positive role in development, as the centres from which innovation and modernization would trickle down to the rural populations.

A highly influential contribution to this positive view was the development of the concept of “Urban Functions in Rural Development” (Rondinelli, 1982; 1983; 1984). The UFRD approach of Rondinelli was inspired by the central place theory and the rank-size rule, which were postulated by Walter Christaller (1933). It was recognized that many developing countries do not have efficient systems of central places and this was thought to obstruct the emergence of a sectorally—and geographically-balanced pattern of development. According to Rondinelli’s “functionalist approach”, the most effective and rational spatial strategy for promoting rural development was to develop a well-articulated, integrated and balanced urban hierarchy. This network of small, medium-sized and larger urban centres was described as “...locationally efficient—it allows clusters of services, facilities and

infrastructure that cannot be economically located in small villages and hamlets to serve a widely dispersed population from an accessible central place” (Rondinelli, 1983:45). The location of more urban centres supplying a variety of services, agricultural inputs and consumer goods to the rural areas was seen as playing a crucial role in rural development. Moreover, different objectives that national policies should have pursued in order to put this strategy into practice were listed¹⁴. These objectives required a very strong commitment from national governments that proved to be too much for poor national economies and their low administrative capacities.

The value of Rondinelli’s work consists in having provided an important stimulation to the debate and to further research. This approach has been widely used by large international donors, such as USAID (which commissioned most of Rondinelli’s studies), and still influences more recent regional planning models. However, it has been criticized from more than one side. Principally, it has been underlined that low rural consumption is caused by social inequality and low incomes rather than by difficult access to supply (Hardoy and Sutterthwaite, 1986). His major critic was, however, Aidan Southall.

1.3.2 The pessimistic view

The pessimistic view, mainly represented by Aidan Southall, saw the development of a system of small and intermediate towns as conceptually useful but empirically almost impossible to be realized under present circumstances.

Southall articulated his view also in response to Rondinelli’s model¹⁵. Southall’s view is the result of more than ten years of research that started from more optimistic assumptions. Thanks to Southall’s commitment, in fact, two conferences were organized that collected

¹⁴ Developing a system of secondary cities should include: strengthening the existing secondary cities, upgrading smaller cities and towns to intermediate size and creating and improving linkages among secondary cities and larger and smaller settlements. Another basic condition was to strengthen the developmental capacity of secondary cities to serve rural areas. These macro-policies should be accompanied by micro-policies to be pursued in secondary cities, such as extending support services for economic development, building the planning, administrative and financial capacity of local governments, improving physical infrastructures and strengthening the economic base and employment structure of small and intermediate urban centres.

¹⁵ “The research supported by the United States Agency for International Development (USAID) clearly promotes a positive view of the development policies in which USAID is involved. But it rests upon two major fallacies. First, it emphasizes the ideal and the potential—what might be done with good will in optimal circumstances—without offering any relevant supporting evidence or experimentation to demonstrate that these positive and desirable results are in any way likely under prevailing circumstances. Empirical studies actually demonstrate the opposite point, that in most cases, and in most African countries, small towns are instruments of exploitation if they have any effect at all. No attempt is made to specify plausible circumstances under which foreign-induced small urban development would have positive effects. Second, the optimism rests upon the confusion, which sometimes seems almost deliberate, that the stimulating effects which small towns had in the development of the autonomous economies of the advanced capitalist countries can be reproduced artificially in the peripheral, dependent economies of the Third World. This is the fallacy which lies at the heart of the modernization theory which provided the intellectual rationale for the development effort” (Southall, 1988:12).

scholars from USA, Africa and elsewhere to report their research on the role of small towns in African development.

The first conference proposed the idea that small urban centres are “the most strategic key to problems of rural development”, a development which could be reached through the provision of the incentives and innovations necessary to increase rural productivity and income by way of small towns. Anyway, it was recognised that “most small towns appear as the lowest rung of systems of exploitation of rural people” (Southall, 1979:211). The influence of national bureaucracies and over-centralization were recognized as the main obstacle¹⁶. It is only in the proceedings of the second conference, held in 1986, that Southall’s pessimistic view became more mature and clear: under present circumstances, rural development via small towns cannot take place. The main argument, echoing the “urban bias” debate, was that small towns contribute to rural impoverishment by being “vanguards of exploitation” of the rural poor by external forces which, according to the case, may be colonial powers, multinational enterprises, central national government, local administrators, local élites and international donors¹⁷ (Southall, 1988).

However, the analysis of empirical case studies reported during the two conferences and documented in the related proceedings led Southall to indulge in a warm optimism: when there is a relatively egalitarian class structure and free access to land (that means that all families can provide for basic subsistence and reproduction), and where the stimulus to urban

¹⁶ “The positive development role of small urban centres conceived as possible and desirable by our research project presupposes the possibility of decentralization and deconcentration, permitting genuine grassroots participational input to the development process. Despite some serious efforts in this direction it is doubtful whether this is a reality anywhere in Africa. The commonest form of decentralization effort is the devolution of planning and development decisions from the centre, in the capital city, to regional or provincial capitals. Where such efforts have been made they often involve duplication, overlapping and conflict, with an increase in the bureaucracy rather than a decrease as might naively have been expected. They result in autocratic, top heavy regional bureaucracies which are just as impervious to grassroots participational inputs as the centralized bureaucracies which preceded them. This is not considered to be genuine decentralization” (Southall, 1979:214).

¹⁷ “Present techniques of development by major international donors, or multinational investors, cannot, in the present structure of African nations and economies, promote beneficial rural development by developing small towns as a stimulus, because those groups are already committed to a contradictory overall operation (honestly expressed in the World Bank's original charter (Mason, 1973:18,335), but not in its current slogans) which makes this impossible. Few development efforts seem to benefit the majority significantly, and most do quite the opposite, often building on pre-existing exploitative relationships to further depress the status of the majority” (Southall, 1988:12-13). This view is reminiscent of the “dependency approach” in the development debate. Santos (1979) turned the “dependency or core/periphery” approach into a specific theory of urbanization. According to this theory, nations and regions of the globe are interconnected through an urban network, in which the “world cities” of the developed world use the primary capitals of the Third World as accumulators and transmitters of wealth. Resources flow from a “periphery” of poor and underdeveloped states to a “core” of wealthy states, enriching the latter at the expense of the former. Common for core-periphery approaches was the concept that infrastructural development, also in smaller towns, allows for the capitalist penetration into the hinterlands to outstrip local production, thus reinforcing the highly unequal social structure required by this economic system.

growth results in activity primarily by the people and for themselves, then small scale urbanization may be beneficial locally¹⁸ (Southall, 1988).

Even if permeated with a sense of frustration, which led him to intellectual inaction, Southall's analysis contains many elements of truth and provided interesting critiques that stimulated further research and debate.

1.3.3 The intermediate position

A third, intermediate position sustained the validity of developing a system of small and intermediate towns, even underlining the need to collect more studies and experiences before making definite conclusions. Hardoy and Sutterthwaite (1986) are the most representative proponents of the third position.

Unlike much of the previous literature, Hardoy and Sutterthwaite's conclusions were drawn from detailed empirical studies from Latin America, Asia and Africa. One major finding of this position was that universal generalizations and prescriptions, which formed the basis of most spatial planning models up to that time, were not valid because of the uniqueness of each individual small and intermediate urban centre. "Special programmes for small and intermediate urban centres should be based on the understanding that each such centre will have its own unique mix of resources, development potential, skills, constraints and links with its environs and with the wider regional and national economies.... [which, in addition] will change over time" (Hardoy and Sutterthwaite, 1986:399)¹⁹. From this assumption

¹⁸ "Where development comes from outside, the resulting urbanization is exploitative. It is only where the stimulus to urban growth results in activity primarily by the people and for themselves that small scale urbanization may be beneficial locally. This is to assume a relatively egalitarian class structure for 'the people.' 'Relatively egalitarian' refers to the generally recognized fact that in most African societies all families had free access to land and subsistence resources sufficient for sustenance and reproduction" (Southall, 1988:5).

¹⁹ Growth pole, dependency and functionalist approaches all have the ideological undertones of top-down planning in common. Moreover, they are not much concerned with the specificities of local contexts and local people's needs. A fourth approach, instead, the "territorial" one, wants to ensure locally-appropriate development through the maximum mobilization of endogenous material, human and institutional resources (Friedmann and Weaver, 1979). "Basic-need strategies", therefore, such as the "agropolitan strategy" (Friedmann and Douglass, 1978), belong to the territorial approach. Agropolitan strategy amounts to an integrated, locally controlled, rural development strategy, the precondition of which is the existence of an egalitarian agrarian structure. The reference territory is defined as the "agropolitan district". The district population—local community of interest—is described as a political community with the capacity of self-determination in matters of common concern. The purpose of the urban centre is to strengthen its surrounding rural base and to improve the life of the community through provision of services and social infrastructures (Friedmann, 1988). The role of the small towns is thereby not that different from the role as service centres proposed by the functional approach. There are, however, two important differences. First of all, the territorial approach is a "basic need" strategy that is labour intensive, small-scale, rurally-centred, makes use of regional resources and relies upon "appropriate" technology (Stoehr and Taylor, 1981). Secondly, it introduces the notion of "development from below" and a community approach which stresses the importance of involving the members of a community—and in particular the poor and marginal population—in democratic decision making processes in order to enable people to solve their own problems. Lo and Salih (1981) assume that regional development policy from a bottom-up perspective should consider the urban component of rural development. This means to recognize the central role that small towns play in rural development, and their

followed a second one, which considers administrative decentralization a fundamental prerequisite to achieve an integrated and healthy rural-urban economy. Moreover, another essential aspect was the need for an egalitarian class structure and land tenure, that is the existence of a land-owning peasantry with the necessary income level to create demands for local urban goods and services. Furthermore, eliminating spatial and sectoral distortions deriving from a-spatial policies was recognized to be essential to avoid a “parasitic” relation between small towns and their hinterlands²⁰. Finally, it was underlined the importance of small towns as centres for social interaction, for the expression and promotion of social solidarity and continuity, particularly during periods of transition and change²¹.

The intermediate position proposed by Hardoy and Satterthwaite is the one that has been mainly followed by scholars in the last decade. Its assumptions can be considered valid still today and are adopted also within this research.

1.4 National policies and programs

Previously-described theoretical approaches inspired different typologies of special

potentialities in the perspective of a bottom-up strategy. Main obstacles to this approach are the lack of self-reliance from part of the communities (thus making central the empowerment of local communities) and the lack of financial and technical support by the national government. Furthermore, the agropolitan strategy seems to be very weak because of being very general. Other critiques of the agropolitan approach mostly concern its utopian and naïve character, which romanticizes the role of small-scale activities and local units (households, neighbourhood etc..) without taking into account local power structures, macro-economic contexts, and local political and economic realities. Furthermore, the ability of the African weak state apparatus, with its meagre economic resources, to create adequate foundations and for an agropolitan strategy (that means large-scale, basic-needs projects) was also questioned. However, the people-centred focus, sensitive to indigenous values and local resources, is an interesting indication, as is the idea of “empowerment” of the poor and grassroots action.

²⁰ “Virtually every government policy, government action or item of government expenditure has some effect on the spatial distribution of development (and thus of population). Many of the most powerful influences on where development takes place within the urban system stem from macro-economic policies, government structure, tax systems, pricing policies and sectoral investment plans”. (Hardoy and Sutterthwaite, 1986:407).

²¹ “Finally, attention must be given to the social dimensions of small towns and to the complexity of social networks, kinship and family ties which often blur the social distinctions between what is rural and what is urban” (Hardoy and Sutterthwaite, 1986:410). This assumption is central to the “economy of affection” approach to the development debate (Hyden, 1983; 1985; 1986). Within this approach, the success of national economies depends on the development of constructive relationships between the urban centres and their hinterlands. In this perspective, smaller towns have an important role, in particular in Sub-Saharan Africa. Critics to this approach relate the fact that the economy of affection is much less extensive and vibrant, even in rural areas, than is frequently presumed by scholars and policymakers. Surprisingly, many Africans do not participate in any type of social support network, and when they do, the amount of help exchanged is very minimal and under increasingly stringent terms. Furthermore, contrary to the familiar image depicted of the “weak” or “failed” African state, this is capable of producing tremendous social change on what are usually considered to be quite powerful and resilient social structures, such as the social networks of the extended family and village community. However, the direction and magnitude of these changes is often indirect and unintended (Morris, 2003).

programmes for small and intermediate urban centres. In particular, the “small town programmes” proposed by many African governments starting from the 1980s aimed to spread economic and social benefits of development more widely. There was concern, in fact, that development had been concentrated both in social terms (only a small group of relatively high income people benefitted of it, while the poorest may indeed have become poorer) and spatial terms (people living outside the major cities or metropolitan areas also benefitted little). From a very accurate survey of published literature on national policies affecting small and intermediate urban centres during the 1980s, Hardoy and Sutterthwaite (1986) suggested to classify the policies into five broad categories, according to their explicit aim.

1. The first category of policies includes those aimed to stimulate urban and industrial development in small and intermediate centres in more “backward” (and generally more rural) regions. These policies, which were implemented for instance in Kenya and Tanzania, took inspiration probably from the “growth centre” policies applied in Europe after the Second World War. This could explain the lack of attention to agricultural and rural issues.
2. The second category applied the “growth centre” policy to small and intermediate urban centres, but this time the specific aim was to stimulate and support rural and agricultural development. Policies related to this category were inspired by the “functionalist” approach, which asserted that an adequate hierarchy of small and intermediate urban centres (market towns and rural service centres) would have served and supported rural development in poorer areas. This concept recalls research studies by Rondinelli, which can be recognized behind the plans of Kenyan government, or in the villagisation programmes of Tanzania and Algeria.
3. The third category aimed to develop small and intermediate centres within urban regions according to a “growth management” strategy. This strategy should have de-concentrated major urban centres from population and productive investments by developing already existing small centres around them or new “satellite cities”. This should have happened through the improvement of transport connections to the major city and the increase in industrial investments. This “polarization reversal” was experimented in Lagos Metropolitan Centre (Nigeria) and Cairo (Egypt).
4. Similarly, the fourth category of policies wanted to address the principal cause of migration towards major urban centres, that is the concentration of productive investments, by stimulating urban development outside larger urban centres. These policies (generally unimplemented) planned big public investments to develop new “satellite cities” both around major cities and in “virgin areas” of the national territory.

An example of an attempt to follow this strategy was the national spatial plan of Egypt in the second half of the 1970s²².

5. The fifth category of policies aimed to strengthen local or regional governments by decentralizing the generally highly-centralized Third World governmental structures. The central idea was that giving more power, trained personnel and resources to local and regional levels of governments (situated in small and intermediate urban centres) could have enabled local administrations to play an important developmental role. Improving public service provision in small towns was also part of this kind of policies. Starting from the late 1970s, many African countries, such as for example Nigeria, Sudan and Tanzania, tried to strengthen sub-national and sub-regional levels of government.

In addition to this classification, Fair (1990) offers a review of policies, carried out during the 1980s in ten South African countries, that aimed at achieving rural-urban balance. Concerns about the fact that at the end of the 1980s most rural dwellers were poorer than 30 years before, that food production did not increase with rural population growth, and that income differentials increased between rural and urban areas led many African governments to focus their policies on spatial imbalance. This was intended as rural-urban imbalance, since the vast majority of the population in Sub-Saharan Africa was still rural. Countries like Zimbabwe, Malawi, Kenya and Botswana centred their spatial policies on the role of the small towns and service centres in rural development.

Even if it is important to recognize that all the above-mentioned programmes focused for the first time on those human settlements that were previously neglected by national policies, it must be also underlined that the results of these policies were not really spectacular. Poor attention to local conditions, top-down approaches, and the exclusion of local authorities and communities from the decision-making process are seen as the main causes for the lack of success of this first generation of spatial policies proposed for small and intermediate urban centres. Actually, even those programmes that explicitly aimed at strengthening local governments were often more a “deconcentration” of public employees rather than real decentralization. Consequently, the “top-down” approach was maintained, which often did not respond to local conditions and to the needs of poor and vulnerable groups. Furthermore, these policies concentrated on economic growth rather than on poverty reduction, thus often increasing social polarization. Finally, the failure of these programmes was often caused by the underestimation of the spatial implications of non-spatial macro-economic and pricing policies, which often worked against the development of small and intermediate urban

²² This plan intended to revert the “urban primacy” of Cairo City by planning enormous public investment in developing new “satellite cities” around Cairo, Alexandria, the Canal Zone and four “virgin areas” (Red Sea Coast, the New Valley, the areas around Mirsa, Matruh and the Sinai). The plan, in the end, remained unimplemented.

centres (Sutterthwaite and Tacoli, 2003).

The meager interest of international aid agencies on secondary and tertiary cities' development must also be underlined. This was expressed mainly in the form of conferences, publications and recommendations to governments, while it was generally not encouraged through concrete programmes or other forms of financial support²³.

²³ The United Nations Conference on Human Settlements (Habitat), held in Vancouver in 1976, produced a document titled "Recommendations for National Action", which focused on the urgent need for every government to establish a "national policy on human settlements, embodying the distribution of population and related economic and social activities over the national territory" (Recommendation A.1). The aim was to integrate into national economic and social development policies the objective of a more equitable distribution of the benefits of development among different regions and social groups (Recommendations A.2 and A.4). Furthermore, UNCHS included the topic of "planning and management of human settlements, with emphasis on small and intermediate towns and local growth points" at their Eighth Session in 1985 and produced a special theme paper on the subject (United Nations, 1985). In the perspective of secondary city development, the World Bank included in its lending portfolio projects of infrastructure and managerial assistance for small and intermediate towns. About the interest of USAID in the subject it was already discussed by reviewing the studies of Dennis Rondinelli, studies which were directly commissioned by this organization. Other international aid agencies which specifically focused on the subject are the United Nations Development Programme (UNDP), the European Development Fund, the US Agency for International Development's Office on Housing and Urban Programs, and the Inter-American Development Bank. Particularly interesting seems to be the activity of the Scandinavian Institute of African Studies (SIAS), which established in 1990 a research program entitled "Urban Development in Rural Context in Africa" that represents an attempt to investigate how small towns can play—or are actually playing—a positive role in rural development.

Chapter 2

Small towns of Africa in a globalizing context

2.1 Changing views in the development debate

The attitude of governments, international aid organizations and academics towards urbanization in Africa has changed radically over time. These changes have reflected also the developmental policies and programs, which have mostly been contradictory with respect to urban development (Tacoli, 1998). In the 1960s, the decade of independence for many African countries, urbanization was seen as beneficial for national development and urban based-industrialization was the developmental paradigm that was considered the most effective strategy to “modernize” agriculturally-based economies. By the 1970s, the failure of policies inspired by the theory of modernization led to an abrupt inversion of this perspective, to the point that urbanization was seen as a parasitic process leading to underdevelopment of the rural areas. As a reaction to the “urban bias” of foreign aid and national development policies of the 1950s and 1960s, International Aid agencies and governments of Third World countries turned their attention away from cities and the problems of rapid urbanization to pursue policies for alleviating rural poverty. Many development theorists believed that rural impoverishment resulted directly from the growth of the largest cities and that migration to them could be slowed or deflected by strengthening rural economies (Lipton, 1977; Todaro and Stilkind, 1981). The “rural development paradigm” inspired the “IRDP—Integrated Rural Development Programs”, which focused on agricultural change without paying attention to the important role of small urban centres in rural development. The meager results of IRDP have been widely analyzed²⁴.

Academic research as well as national policies and programs, which have been reviewed in Chapter 1, have produced an important cultural shift. By the 1980s, attention was focused—and is still being focused today—on the interdependence and symbiosis of the urban and the rural, which cannot be considered as separate areas for investigation and intervention. Today, it is widely recognized that small urban centres of Sub-Saharan Africa are potential catalysts of prosperity in the rural areas and, consequently, their growth is

²⁴ For a review of IRDPs see Cohen (1987).

considered a necessary condition for rural transformation²⁵ (Baker, 1990). Therefore, various genres of decentralization policies, aimed at distributing infrastructure and services across the national space, have become a new orthodoxy of international agencies and donors, as well as a central objective in national development and poverty reduction plans elaborated by most governments of Sub-Saharan Africa. These decentralization policies generally focus on three major concepts: the “integrated and mutual development” of urban and rural societies; “rural-urban linkages” and “rural-urban sectoral interactions”; and urban and rural class differentiation.

2.1.1 Integrated and mutual development of urban and rural societies

This central concept underlines how interdependence, reciprocity of interest and complementarity between small urban centres and their hinterland are key issues in African rural development.

Small towns can bring a positive influence on agricultural productivity by acting as markets for regional agricultural production and as distribution centres for a wide range of production assets and consumer goods. The urban infrastructures and services (including educational and sanitary services) of these towns also cover the demand of populations living well beyond from their administrative boundaries. Further, the possibility of seasonal or occasional (circular) migrations where cash is actually circulating represents the possibility for rural families of diversifying income sources through non-farm activities. Finally, small centres, by acting as “intersection points” of reticular urban systems, offer the rural hinterland the possibility of connection to national and international urban networks and trade flows and, therefore, can also act like centres of diffusion of innovations and ideas.

On the other hand, the rural hinterland in turn produces precious resources (e.g. food, workforce, demand of goods and urban services, payment of services through taxation), which allow the town to expand its economic and social functions (Baker, 1990; Baker and Pedersen, 1992).

²⁵ It has been argued—and it has been often demonstrated to be true—that some small towns have had a “parasitic” role rather than a “generative” one, with reference to the classification of cities and towns proposed by Hoselitz (1955) on the basis of the beneficial or adverse effects they produce on their rural hinterland. Nevertheless, the most common position is currently that the exploitative role that small towns have had towards their rural hinterland is to be ascribed to the highly centralized governmental and economic systems rather than to the particular nature of the small towns themselves. Therefore, it is recognized that the most important prerequisite for a well-functioning small town rural economy is the decentralization of political and economic decision-making to the local level (Hardoy and Satterthwaite, 1986:399). Scholars stress other important factors, such as the development of physical, social and institutional infrastructures (Rondinelli, 1983:29); macro-policies which favor “generative” rural-urban linkages (Evans, 1990); and the reduction of social, economic, political and climatic instability and risks (Baker and Pedersen, 1992). Summarizing, where there is a correct orientation from the central government, small towns demonstrated to be able to stimulate rural development.

2.1.2 Rural-urban linkages and rural-urban sectoral interactions

Considerations related to the complementary relationship between urban and rural phenomena and, in particular, to reciprocity in small town-rural areas interactions has brought out researchers and policy makers to focus their attention mainly on “rural-urban linkages” (Evans, 1990; Gaile, 1992; UNDP/UNCHS, 1995) and “rural-urban sectoral interactions” (Tacoli, 1998; Bryceson and Jamal, 1997). Moreover, major changes in macro-economic policies and in the global socio-economic context played an important part in this shift in development paradigms, as well as in policies and programmes. Building efficient economic linkages connecting producers with external markets, in fact, has become a central topic under the increasingly prevalent market-based development strategies and their emphasis on export-oriented agricultural production. Small towns are considered the crucial contexts to realize this development strategy. “From a spatial point of view, small towns are seen as the places where linkages between the rural hinterlands with both domestic and international markets are made possible. Access to external markets is expected to spur local production, by transforming potential demand into effective demand. At the same time, growing incomes in the agricultural sector and differentiating rural population’s income sources through non-farm employment opportunities, should allow broadening the local economy’s base of the small towns and result in increased demand for services and manufactured goods” (Tacoli, 1998).

Rural-urban linkages and sectoral interactions, however, often represent, for most of the African population, the most important adaptive strategy to survive in contexts that are characterized by high social, political, economic and environmental instability. “Despite the very real constraints and enormous hardships involved, the indications are that people do adapt and survive. Rather than passively accepting their fate, much of the evidence would suggest that a sense of resilience and dynamism is emerging as rural and urban-based individuals and households adopt an often complex array of adaptation and coping strategies which involve the utilization of rural-urban links, including the opportunities provided by small towns” (Baker and Pedersen, 1992:19).

2.1.3 Urban and rural class differentiation

Another important topic has been the understanding of urban and rural class differentiation. The debate around this topic emerged from the critiques of the “urban bias” concept proposed by Lipton (1977), the central idea of which was that the most important class conflict in the contemporary Third World was between the urban classes and the rural classes²⁶. The

²⁶ Starting from a radical critique to the theory of modernization, Lipton (1977) introduced the concept of “urban bias”. His basic assumption is that the elites and the most powerful interest groups of Third World nations (including political institutions, which bear the primary responsibility for shaping development) rely primarily on urban resource bases, and for this reason most macro- and microeconomic policies favour the

oversimplification of this picture of undifferentiated urban and rural societies, with urban rich exploiting rural poor, has stimulated a great deal of debate on the nature of rural-urban interactions²⁷. What emerges from this debate is that the urban and the rural cannot be considered as dichotomous entities because of their interplay, overlap and reciprocity. At the same time, the need for a clearer understanding of urban and rural class differentiation is recognized.

Jamal and Weeks (1988) made an important contribution to this debate by making some provocative considerations based on empirical data from a number of Sub-Saharan African countries.

The central statement of this was that the deterioration of African economies from the 1970s had led to the decline of domestic growth rates, to a contraction in urban formal employment and to lower real incomes²⁸. As a consequence, the rural-urban income gap narrowed or, in some cases, even closed to such an extent that the rural population had an income advantage with respect to urban wage earners. This, however, did not mean a general improvement in the distribution of incomes. On the contrary, there was an increasing differentiation between the class of the “rich”, constituted by the urban elites and wealthy farmers, and the class of the “poor”, which were the urban wage earners, informal sector workers and small peasants. Another consideration was that income differentials between formal and informal sectors were decreasing to such an extent that it became ever more difficult to make a distinction between the two sectors. Moreover, it was a common phenomenon that formal sector workers lose their employment and shift to the informal sector.

The third consideration was that rural-urban migration increased even when the urban-rural

overdevelopment of urban areas and the underdevelopment of rural areas. The attempt of many Third World governments to develop indigenous capital-intensive industry, according to an import-substitution strategy, occurred by subsidizing the urban sector at the expenses of the agrarian sector.

²⁷ Lipton’s arguments have been widely criticised, mainly because of their undifferentiated view of urban and rural societies, which do not take into account the existence of urban poor and rural rich. Regardless, the concept of “urban bias” has widely influenced development policies and the academic debate. In particular, Lipton’s arguments against urban elites were recently used to attack the African bureaucracies responsible for skewing incentives and infrastructural investments towards urban areas and, always in the name of industrialization, for undermining the real material base of African economies, which is agriculture. More recently, the attack on rent-seeking, urban-based bureaucratic elites has been taken up by neoclassical economics and implemented through structural adjustment packages aiming at drastically reduce the role of the state (Tacoli, 1998).

²⁸ The author supports this central statement with a number of well-documented considerations. First of all, all urban wage-earning sectors have suffered a major decline of their real wages and the deterioration of their purchasing power, with the unskilled workers in the formal sector being the most affected, while the urban elites (professionals, high-level civil servants and entrepreneurs) were not particularly damaged by this situation. As a consequence of the fall of real wages, most of the wage-earning households are below the poverty line. Moreover, government cost-cutting measures have produced a contraction of the formal sector and—consequently—the instability of formal employments, which were earlier considered unalienable.

income gap had diminished²⁹. According to Jamal and Weeks, migration must be understood as a “complex and dynamic struggle to survive in the face of falling real incomes for the poor, both urban and rural” (Jamal and Weeks, 1988:274). This statement related to the “dynamics of income distribution between urban and rural areas”. Contrary to what postulated by Lipton, the “primary dynamic distributional relationship in Africa has been between rich and poor within both the urban and the rural sectors” (Jamal and Weeks, 1988:275). An important intuition of the authors was that to overcome the difficulties deriving from rapidly decreasing incomes, the rural and the urban poor had undertaken interactive rural-urban survival strategies. These strategies could be very different. “Urban agriculture”, for instance, was becoming more and more important to supplement the incomes not only of the urban poor, but also of higher income groups. Moreover, the intensification of rural-urban linkages was of particular importance in the African context. The authors affirmed that “it was never correct to divide African labour markets into neat categories—rural/urban, formal/informal. Most workers have always straddled both the rural and urban sector (‘circulatory migration’) and the formal and informal sector (‘moonlighting’). And now, as a result of the deepening economic crisis, that kind of ‘doubling’ has become more the rule than the exception” (Jamal and Weeks, 1988:289). This means that even if urban and rural households have traditionally been multi-occupational, this characteristic will be intensified by the economic crisis, to which households will respond by spreading their risks and their members both geographically and occupationally. As a consequence, it will be more and more difficult to identify who is rural and who is urban and to make strict class distinctions (Baker and Claeson, 1990).

2.2 Relevant paradigms to understanding urbanization in rural contexts of Africa

While the economic development debate on the role of small towns of Africa has developed in a rich and varied way, it is far more difficult to find urbanization theories, or even empirical research around small towns of Africa in the last twenty years.

Nevertheless, the main characteristics of urbanization in African rural contexts can be understood by analyzing some major processes that are occurring at a global scale. Rapid increase in urban population, globalization and restructuring of national economies in the neoliberal way, administrative decentralization, and modernization of transport and communication infrastructures are all global processes that are deeply changing the organization of national urban systems and rural-urban relations. In particular, these processes are giving a new centrality to small urban centres and, at the same time, impose the

²⁹ This contradicts the model proposed by Harris and Todaro (1970), which postulated that the rate of the rural to urban migration depends on two variables: the rate of urban unemployment and the rural-urban income differentials.

adoption of new interpretational paradigms.

The following four paradigms are proposed to better understand and describe urbanization dynamics in rural contexts of Africa, with a specific focus on small towns. Even if above mentioned processes are occurring at a global scale (or at least at the Third World scale), they show very different characteristics according to the regional context. For the particular purpose of this research, global dynamics will be referred to the Sub-Saharan African context.

2.2.1 Urbanization of poverty

From United Nations' projections it emerges that planning and managing the urban growth of the small towns of Africa has become a pressing issue. The world, in fact, is experiencing an extremely rapid urbanization process that will almost completely be absorbed by the developing countries and, in particular, by its small and intermediate urban centres.

In absolute terms, more than one billion people will move from rural areas to cities and towns of Third World countries by 2030. In 2009, Africa's total population for the first time exceeded one billion, of which 395 million (or almost 40%) lived in urban areas. Sub-Saharan Africa is the macro-region of the world with the highest annual urbanization rates³⁰. The urbanization trend is expected to continue: Africa should prepare for a total population increase of about 60 percent between 2010 and 2050, with the urban population tripling to 1.23 billion during this period (UN-Habitat, 2010:1). With only an estimated 23.5 percent of the population living in urban areas, Eastern Africa remains the least urbanised subregion on the continent. Nevertheless, it is rapidly catching up. "Accommodating rapidly growing urban populations is clearly a challenge in Eastern Africa. Eastern Africa's future is unquestionably urban" (UN-Habitat, 2010:1). In Mozambique, for example, the annual growth rate of the urban population between 2000 and 2010 has been estimated at 4.7%.

Furthermore, according to United Nations projections, more than 40% of the urban growth will be absorbed by small and intermediate towns with populations under 500,000 people. Statistics based on national census data, indeed, show generally that the highest urban growth rates within national urban systems are related to small and intermediate towns. "While megacities are the brightest stars in the urban firmament, it is also true that three quarters of the weight of future world population growth will impinge on secondary cities and barely visible smaller urban areas: places where, as pointed out by UN researchers, there is little or no planning on how to accommodate these people or provide them with services" (Davis, 2006:15). Also, in Sub-Saharan Africa small and intermediate towns are growing faster. This assumption has been verified in Mozambique through the elaboration of national census data,

³⁰ The average of annual urbanization rates in Sub-Saharan African countries was 3.66%, between 2000 and 2010.

as it will be analysed in Section 5.1.1. Therefore, the extremely rapid urbanization process in developing countries is showing some significant changes in comparison with the past. It seems, in fact, that the polarization trend of major urban centres that characterized the last few decades is being reversed.

Such an unprecedented urbanization process has more complex and heterogeneous causes and characteristics with respect to those that defined the origin of the industrialized countries in the nineteenth century, causes and characteristics that vary according to national and even regional contexts. When analyzing the phenomenon of accelerated urbanization of Sub-Saharan countries, it is generally underlined how the demographic growth of the urban centres (of each rank) occurs without the economic development of such centres. Differently to what happened in western countries at the end of the 18th and 19th centuries, or to what is happening in South-East Asia today, urbanization in the African context is not accompanied—or determined—by industrialization or other economic development factors pulling the rural population. It is rather the product of the restructuring and decline of rural activities and of the consequent redundancy of agricultural labour. This process, also known as “urbanization without industrialization” or the “urbanization of poverty”, is mainly the product of the new economic paradigms: globalisation and neoliberalism (UN-Habitat, 2003). After the world debt crisis of the 1970s, most Sub-Saharan African countries were forced to submit to the diktat of the Bretton Woods institutions, which imposed—in exchange for the necessary loans—the restructuring of national economies in the neoliberal way. This meant the cancellation of every welfare policy, privatization of goods and services, growth and liberalization of international trade, opening to international financial markets and, not least, the adoption of the “SAP—Structural Adjustment Programmes”. These programs have been demonstrated to fail in their attempt to produce economic development and have instead exacerbated the surplus of rural manpower and the debt crisis, as efficiently summarized by Deborah Bryceson: “One by one national governments gripped by debt, became subject to structural adjustment programs (SAP) and International Monetary Fund (IMF) conditionality. Subsidized, improved agricultural input packages and rural infrastructural building were drastically reduced. As the peasant ‘modernization’ effort in Latin America and African nations was abandoned, peasant farmers were subjected to the International Financial Institutions’ ‘sink-or-swim’ economic strategy. National market deregulation pushed agricultural producers into global commodity markets where middle as well as poor peasants found it hard to compete. SAPs and economic liberalization policies represented the convergence of the worldwide forces of de-agrarianization and national policies promoting de-peasantization” (Bryceson, 2000: 304-305).

Indeed, the 1980s and 1990s have been characterized by unprecedented upheavals in the Third World’s countryside. With the disappearing of security nets, poor peasants in particular have become more vulnerable to any kind of exogenous shock such as inflation, growing

interest rates and fall in the price of raw materials, civil wars, political instability, environmental degradation, and droughts and other effects of the climate change. Therefore, the demographic growth of African small towns must be understood in the light of the “urbanization of poverty”: the socio-economic, political and environmental factors that are pushing the population away from rural areas. Nevertheless, one must consider the renewed interest of development policies and programmes related to small towns and their role in establishing efficient economic urban-rural linkages connecting producers with external markets. As seen in Section 2.1.2, this interest is still associated with market-based development strategies and their emphasis on export-oriented agricultural production. It has yet to be verified whether these strategies will determine a “generative” or a “parasitic” role of the small towns in relation to their rural contexts, or if they will be able to reactivate local economies and improve the living conditions of the population.

2.2.2 Administrative decentralization

Administrative decentralization, the new paradigm globally adopted in the public sector, is strictly related to market-based development. In Third World countries, increased priority is given, partly by design and partly as a consequence of funding cuts, to the decentralization of roles and responsibilities to the local level (Tacoli, 1998).

Administrative decentralization, indeed, must be understood in the light of a “denationalization” process (Sassen, 2008) that generally accompanies economic globalization. The “denationalized State” is described by Saskia Sasses as the dominant model worldwide, in developed as well as in developing countries. This concept is an attempt to introduce a new category with which to describe the functions of the State in the current transition that followed the dismantling of the welfare state. In this transition, in fact, theoretical categories and institutional forms inherited from a bygone era continue to interpret and govern a reality that has structurally changed. The crisis of the national state has often been underlined, but not so often it has the new role of the state been analyzed, which consists of assuming the global agenda of different supranational actors—first of all enterprises and financial markets. This new role of the state is summarized with the concept of the “denationalized State”. The institutionalization of “rights” for non-national enterprises, of transnational transactions’ deregulation, and of growing influence/power for some supranational organizations started at the end of the 1980s and continues still today. Guaranteeing these rights has led to the partial reduction of the State authority as it was built in the last century. This process has been referred to as “deregulation” and the birth of “new legalities”. This process created the conditions for the national states to be involved in the globalization process and to be the institutional place for some fundamental dynamics of globalization.

Therefore, the emergence of the role of local authorities must be understood with respect to

the described loss of authority of national states and to the growing role of international organizations.

The decentralization trend at the administrative level has been strongly promoted in Sub-Saharan Africa by the World Bank and the International Monetary Fund. Almost every African country adopted public sector reforms in the last twenty years that transferred a majority of roles and responsibilities to local administrations. This process started in 1997 in Mozambique and is still ongoing, as it will be further explored in Section 5.1.2.

The declared objectives of administrative decentralization reforms are to guarantee more democratic decision-making processes, effective involvement of local communities, adequate responses to local needs, and more efficiency in implementing policies and programs. However, the decentralization process was not immune from contradictions between theory and practice in most countries. First of all, local authorities must often deal with the interference of central governments, from which they never reach a real political and administrative autonomy. Moreover, as it mostly happens, the transfer of new administrative functions at the local level occurs at the same time as the “state withdraw”. Therefore, the necessary transfer of economic resources and technical competences does not take place, thus often inducing paralysis in the local administrations³¹.

The transition from an “interventionist state” to a “denationalized state” is having relevant consequences on urban planning and management. Structural Adjustment Programs have determined strong cuts in social policies and public utilities’ management, the privatization of the housing market and the withdraw from many other urban management programs. The consequences have been the worsening of urban poverty, increasing disparities within towns and cities, and the degradation of the urban environment, in informal settlements in particular. Moreover, the huge problems created by rapid urbanization have been faced by the local authorities of Sub-Saharan Africa—and in particular those of the small towns—without adequate technical capacities and financial instruments, due to the lack of money transfer from the central government and to the meager revenue power of the local governments.

With the decline of the role of the State, international aid organizations started bypassing central governments in the beginning of the 1990s in order to work directly with international NGOs operating locally on urban management issues. This has consolidated what has been defined as “soft imperialism”, in which major NGOs submit to the agenda of international donors and, in turn, grassroots organizations and local authorities depend on international

³¹ “It is a paradox that the greatest global challenges—urbanization and the growth of poverty, including the feminization of urban poverty—are increasingly being managed at the local level. Lip service is paid to decentralization without providing the means to make it work. The nuts and bolts of urban governance have become a central issue of development, though generally lacking support and direction from higher levels of government where the resources actually lie” (UN-Habitat, 2003:6).

NGOs (Davis, 2006).

Nevertheless, decentralization has also produced some interesting experiences and innovative policies and programs. Field research, including that which is presented here, demonstrates that where local administrations are provided with adequate financial and technical resources, they are able to address increasing and more complex administrative functions. Moreover, the success of some experiences of “decentralized cooperation”, demonstrate that the co-operation between local administrations of the developing and developed countries can produce interesting results if needs and priorities are defined by the local communities within inclusive decision-making processes.

Summarizing, decentralization is important in the perspective of “development from below”, even if it needs to be supported with a serious commitment in transferring financial resources and technical competences to the local administrations. Furthermore, in policy terms, it has renewed the interest in regional development planning, as well as in the role of small and intermediate urban centres in Third World development.

2.2.3 Cities as nodes of reticular urban systems

Starting from the 1980s, the development of a strictly integrated world economy and the consequent deep economic, social and cultural transformations, have produced major changes in the Third World in the organizational dynamics of cities and territories. At the same time, the development of transport and communication technologies has remarkably reduced spatial distances and has revolutionized economic geography. The implications of such global processes are considerable and make previous theories and paradigms inadequate.

The idea of a hierarchically organized urban structure within well-defined national urban systems has been challenged, as well as the relation of economic interdependence and subordination between “primary, secondary and tertiary cities”, as described by Christaller (1933). It is rather affirmed that the relations between urban centres have become far more complex. Cities are interconnected in a more elastic way, according to a new model of territorial organization: the “reticular urban system” (“*sistema urbano a rete*”) (De Matteis, 1997). Contemporary cities are the nodes of the reticular system. The traditional definition of “secondary cities” and “small and medium-sized towns”—deriving from the hierarchical model of Christaller and generally used to indicate urban centres with specific characteristics in terms of population and dimension—has been substituted by the definition of “small and intermediate urban centres”. This definition instead stresses the role of “intermediation” that these urban centres play between major cities (national, world and global cities: centres of power, where decisions are taken) and their rural areas of influence (local and/or territorial spaces).

According to this paradigm, small towns of sub-Saharan Africa are strategic nodes of the

“reticular urban system” because they connect (or could potentially connect) the majority of the (still rural) population with national and international urban networks and trade flows, facilitating also the diffusion of innovation and ideas. In this perspective, the modernization of transport and communication infrastructures becomes a central issue, as well as the consolidation of “rural-urban linkages”, as discussed in Section 2.1.2.

2.2.4 The rural-urban continuum

All considerations made in this chapter suggest that small towns of Africa should be intended as the “urban-rural interface” in which stark boundaries between what can be considered “urban” and what “rural” are not to be found. By analyzing the relations between small urban centres and their rural hinterland, in fact, many authors use the concept of “rural-urban continuum”.

This concept was introduced by Wirth (1939) and represents one of the major theoretical contributions to this topic. The shift in Western countries from a rural to a predominantly urban society determined that the attention of academics and policy makers focused on the so-called theories of contrast, which postulated a clear-cut distinction between the urban and the rural. This approach has been widely used also in the analysis of the urbanization process of Third World countries in the second half of the 20th century. The concept of “rural-urban continuum” is a fundamental, first attempt to overcome this approach. The starting statement is that the city is the product of growth rather than of instantaneous creation and that most of the urbanizing population, which is coming from the countryside, is not expected to rapidly abandon its modes of life. On the contrary, it is rather to be expected that reminiscences of rural form of existence persist in the city, where a stark discontinuity with the countryside in terms of modes of life is not to be found. From the other side, the urban mode of life is not confined to cities and urbanization must be understood also as the accentuation of urban modes of life even among the population living in areas which cannot be considered “urban”. Technological development in transportation and communication, in fact, have also involved the rural population in the “urban system of life” by borrowing its modes of life. The conclusion is that “the city and the country may be regarded as two poles in reference to one or the other of which all human settlements tend to arrange themselves”.

Wirth’s contributions were criticized by many authors, such as Gans (1962) and Pahl (1966), who demonstrated that the path towards urbanization and modernization was not unidirectional and that elements of rural and urban continue coexisting and both developing in the same community.

The concept of “rural-urban continuum”, however, has been actualized by other authors in the light of the deep changes in the relationship between town and countryside that have occurred in almost every part of the world since the 1980s. According to Guldin, urbanization must be conceptualized as a structural transformation that involves each point of

a “rural-urban continuum” and as the intensification of bi-directional interactions between these points (Guldin, 2001). The anthropologist Magdalena Nock (2000) affirms that globalization has increased the movement of people, goods, services, information, news, products and money and, therefore, the presence of urban characteristics in rural areas and of rural features in urban centres.

This structural change in Third World countries takes place in a different way from what happened in Western countries. In the latter, in fact, rural characters have been replaced by urban ones. The cities of developing countries, on the other hand are keeping elements of rurality. The rural exodus towards Third World’s urban centres has determined the presence within the cities of settlement patterns, housing typologies and lifestyles which are characteristic of the rural areas. Especially in the informal settlements, it is possible to perceive the atmosphere of the rural communities from which they originated (UN-Habitat, 2003). Moreover, rural elements appear to be essential to the survival strategy of the greater part of the urban population and also to the prevention of the town implosion (Revell, 2010). There are scant studies on this phenomenon in rural contexts and in small towns belonging to them. Nevertheless, even if in any typology of human settlement of the Third World it is possible to verify the coexistence of “urban” and “rural” elements, it can be affirmed that small towns of Africa are those contexts in which this mixture is particularly evident.

CHAPTER 3

Spatial planning in predominantly vernacular settlements

3.1 Literature gap

Today the role (effective or potential) of small towns of Africa in promoting a more equitable rural development and in reversing the polarization trend of major urban centres is widely recognized. Nevertheless, from the literature review it emerges that small towns have always been considered from the regional development perspective and, more specifically, only through a functionalist approach. This interest was based on their potentiality as possible foci for economic interaction and, consequently, poor attention has been paid in defining the complex nature of this typology of human settlement, and in particular on its physical characteristics.

At the beginning of the debate on the role of small towns of Third World countries, Rondinelli (1986:57) affirmed that the challenge for international assistance organizations and national governments in the Third World was to find effective and appropriate ways to help local governments in two areas: “first in formulating national urbanization strategies for developing well-integrated systems of secondary cities; and, second, in helping city governments to solve the complex problems of managing urban growth.” Thirty years after this statement, it could be affirmed that national governments of African countries and international aid organizations have focused only on macro-economic policies (and only recently also on regional development policies and rural-urban linkages), while poor attempts have been made to help local governments in planning and managing the urban growth of small towns.

There is an evident gap in urbanization theories related to small towns of Africa. As it mostly happens for Third World countries, urbanization theories have mainly concentrated on the phenomenon of major cities’ growth. Megalopolis, hypercities and urban regions have captured—and almost monopolized—the theoretical efforts of scholars, development agencies and other institutions. No attention has been paid in the definition of the specific nature of African small towns and, in particular, of their settlement patterns. The same can be said in relation to the lack of analysis around the rapid urbanization process that small towns are experiencing and of the effects that this process is producing on local urban systems and surrounding areas.

In summary, both defining the particular characteristics and the relevant transformations that African small towns are experiencing and individuating planning principles, which could guarantee the sustainable growth of this particular typology of human settlement, are still unsolved issues.

In this research, I assume that small towns in Sub-Saharan Africa are essentially towns of farmers, in which “modern” administrative functions, provision of infrastructures and services, and development of strictly “urban” economic activities are found in a society whose features are typically “rural”. This occurs also in Mozambique, where processes like globalization of the economy, modernization of transport and communication infrastructures, rapid urbanization, and administrative decentralization are deeply transforming both the physical structure of the *vilas rurales* (literally “rural towns”) and their socio-economic and cultural characteristics. Therefore, small towns are expected to present a mixture of rural and urban elements, the interactions of which are constantly evolving.

The concept of the “rural-urban continuum”, as it was described in Section 2.2.4, surely represents an interesting paradigm with which to understand and describe the complex nature of the small towns of Africa. Nevertheless, there are very few studies on this topic in relation to the rural contexts and the small towns belonging to them. In a study on a few small towns in Mozambique and Angola, Jenkins (2003:123) defines them as an “urban-rural frontline in post-war Mozambique and Angola”. According to the author, this frontline is not intended as a rigid line of demarcation. “The urban-rural interface is essentially a spectrum, with one extreme gradually changing into the other” (Jenkins, 2003:123). This definition stresses an essential aspect of the Sub-Saharan Africa small town. Anyway, the way in which these components—the urban and the rural—get structured within the towns has yet to be defined, as well as how the two components evolve and interact with each other.

Different terms have been adopted in literature as an attempt to give further specifications to the concept of “small town” and to underline the coexistence of “urban” and “rural” characteristics. Terms such as “agrotown” (Silitshena, 1990) or “rural town” (Saxena, 1994; Haggblade et al., 2007; Barrett et al., 2001) have been introduced to summarize in one term the concept of a small urban centre situated within a rural context. When considering population densities and provision of services, which are generally used as indicators of urbanity, many small centres in Sub-Saharan Africa can certainly be considered towns. However, main economic and subsistence activities of their population are generally linked to agriculture, so that it could be affirmed that largely peasants inhabit these towns. The rural nature of these small towns, therefore, is not a residual element, but one that affects profoundly the socio-economic and physical structure of the towns and is also reflected in the persistence of cultural traditions and behaviours. Nevertheless, the terms “rural town” and “agrotown” are generally used without a clear conceptualization, relying rather on their evocative power. Defining the specific features of African rural towns, intended as a

particular typology of human settlement with its complex multisectoral interactions³², is still an unsolved issue.

In this research, I refer to small towns of Mozambique, the administrative definition of which is that of *vilas rurales*, as “rural towns”. Similarly, I define “rur-urbanization” as the urbanization process that they are experiencing. In spite of their vagueness, we are talking of two forceful terms. Understanding and describing the main characteristics of the “rural towns” and of the “rur-urbanization” process is the first objective of this research.

3.2 Inadequacy of spatial planning experiences

The literature gap is not the only problem faced when dealing with spatial planning in small towns of Africa. The almost complete absence of concrete experiences, or the inadequacy of the few attempts to manage urban growth in such contexts, is also a big obstacle.

The search for adequate policy responses and actions related to the management of urban growth is actually one of the main declared objectives of the national governments of Third World countries, as well as of international organizations. Nevertheless, up to now urban development research and projects have centred mainly on megacities, while small towns almost completely lack planning on how to accommodate people moving from the surrounding rural areas and how to provide them with services (UN-Habitat, 2003). Ordinary management of or—at best—upgrading already-existing urban contexts are generally the objectives of local administrations, for whom planning the urban growth represents an unattainable goal, due to the lack of financial resources and technical capacities. Local administrations, international aid agencies and NGOs operating in small towns of Africa propose generally only small-scale interventions (urban projects) or sectoral programs (i.e. infrastructural improvement, site-and-services, slum upgrading and—only seldom—public housing provision), rather than a consistent and organic activity of urban planning.

³² In the “Vancouver Declaration on Human Settlements” (1976), the United Nations provided the following definition: “Human settlements means the totality of the human community—whether city, town or village—with all the social, material, organizational, spiritual and cultural elements that sustain it. The fabric of human settlements consists of physical elements and services to which these elements provide the material support.” Over the years, the concept of human settlements has been broadened to become a framework for an overall national socio-economic development. “It is now contended that human settlements are the spatial dimension as well as the physical expression of economic and social activity. No creative act takes place without being influenced by settlement conditions. In turn, the creation of workable human settlements inevitably becomes an objective of, an indicator of and a prerequisite for social and economic development. Settlements are an objective of development in that places where people can live, learn and work in conditions of safety, comfort and efficiency are a fundamental and elementary need. Settlements are also an indicator, in that they are the most visible expression of a society’s ability to satisfy some of the fundamental needs of its members: they can mark accomplishments as well as expose destitution, neglect and inequality. Finally, settlements are a prerequisite for social and economic development, in that no social progress for sustainable economic growth can occur without efficient settlements systems and settlement networks” (<http://www.unescap.org/huset/whatis.htm>).

Furthermore, these sectoral programs are not always present: they generally follow environmental, political or socio-economic disasters. Therefore, they are often “emergency programs” through which a considerable amount of money is used to resettle the population affected by floods, civil wars, droughts and famine. To cope with the problem of housing big numbers of people in a short time, international aid organizations and national and local governments often adopt foreign-designed, mass-produced and pre-packaged housing solutions. Resettlement programs, as well as other sectoral interventions, are generally designed for major urban centres of the Third World and then automatically transferred to small and intermediate towns without any attention to the specificities of these typologies of human settlements. If these programs demonstrated to be inadequate even for those centres for which they were expressly formulated (Rondinelli, 1990; Davis, 2006; UN-Habitat, 2003), they are far less suitable to the small towns.

These settlements are generally planned on a two-dimensional grid, which is applied on the territory without considering the often-complex morphology of the place and existing natural elements (i. e. vegetation and water bodies). In the landscape there is no centre, neither reference points nor signs remarking identity or educating to beauty or pleasure. The grid is generally designed by a regular, perpendicular road network and is composed by the obsessive repetition of the same module: a small housing plot provided with basic services (generally just a “wet core”) and, sometimes, one small house for the whole family. This typology of housing policy and programs refer generally to cultural models that were originally developed for Western, industrialized countries and are passively inferred to southern, tropical, rural contexts. General assumptions and blanket solutions to housing needs are likely to suffer from being out of place or even face total rejection. These pre-packaged housing models pay no attention to local housing cultures and ignore the environmental context of the proposed architectures. Government agencies, local authorities, contractors, technical advisors, engineers, architects and planners frequently plan communities and design houses on pragmatic data with little or no knowledge of indigenous dwelling types and patterns³³.

Moreover, accustomed to a different relationship between internal and external space than that of a conventional Western house, a people may experience a disconcerting loss of “environmental control”, which comes with being unable to relocate or alter the dwelling to suit specific social or climatic conditions, as they have been accustomed to do. To live in a

³³ “Standardized in plan and structure, multiplied and arranged in geometric settlements for ease of service runs and drawing-board formalism, such bureaucratized, centralized, mass-housing solutions are not designed to be responsive either to the cultural patterns of established traditions or to emerging aspirations. They neither utilize local skill nor make intelligent use of received knowledge. Instead, family and individual spatial allocations are drawn from standard designs, rather than from the analysis and understanding of specific physical, psychological and socio-cultural needs” (Oliver, 2003: 252).

Western-styled house requires the fragmentation of personal spaces and the adoption, at least in part, of the lifeways of another culture; though to adopt them may mean the loss of cultural and personal identity. As a result, individuals find themselves physically and psychologically uncomfortable in modern structures. In particular, it is generally not taken into account the design of spaces able to host large family structures (often polygamous) and to integrate different activities within the plot (living, cultivating, livestock holding, handicraft goods producing, domestic selling etc.), that are the base of most subsistence strategies of poor people of the Third World (Sutterthwaite and Tacoli, 2003).

Furthermore, houses are often built with industrial materials. The widespread use of concrete, steel, prefabricated elements and other “modern” materials and building technologies has demonstrated not to be affordable by local economies and to cause also the loss of cultural heritage and traditional abilities of local manpower. Furthermore, in contrast with various traditional architectural forms and locally available materials, modern technologies are less appropriate also from an environmental point of view, as they produce a less-balanced relationship between the building and its environment. This consideration is not only valid in relation to the “lifecycle assessment” of industrialized vs. traditional constructing technologies, but also in relation to their performances in terms of climate control and to the provision of indoor comfort in tropical countries (H. Fathy, 1986).

As seen in Section 2.2.1, small towns of Africa are experiencing a very rapid demographic growth, which in some cases can lead to the doubling of the population within a few years. However, urban growth is generally considered to be a sectoral problem, and specifically as a problem of housing and basic urban services’ provision to the newly urbanized population. Demographic growth and urban expansion are not perceived as a complex spatial problem that involves the redefinition of the whole urban system and that, therefore, should be handled with adequate spatial planning instruments. Only in a few cases is urban growth in small towns accompanied by the drawing up of spatial plans. Nevertheless, similarly to what already affirmed in relation to housing programs, they follow generally Western cultural models and prescriptions without any attention to the specific characteristics of local contexts.

Many African countries have, in the last few years, adopted new legislations regarding spatial planning and new planning instruments, which both pedantically follow those established by Western countries. If we look at the plans for small towns in Mozambique, plans which have been recently introduced by two national laws regulating spatial planning in both urban and rural areas³⁴, they are supposed to use the same instruments as Western master plans. Fortunately, the bad practices that characterized the construction of colonial

³⁴ *Lei de Ordenamento Territorial*, 2007; and *Regulamento de Ordenamento Territorial*, 2008.

cities in the early decades of the 20th century³⁵ have been generally dismissed. Nevertheless, many of the approaches and techniques used at that time remain fundamentally unchanged. “Zoning”, for instance, is commonly applied, producing similar results of marginalization, even when the intentions are different.

Furthermore, the adoption of inadequate planning instruments and methods is also exacerbated in small towns by low professional skills. Indeed, the training of local technicians in the field of urban planning and management is often neglected, even if it is evident that it should be a fundamental, preliminary action. Moreover, the lack of revenue power of local administrations could lead to the adoption of a purely technical approach, one aimed only at demarcating urban development areas in order to ratify taxation rights. Anyway, empirical research—such as that presented here—demonstrates that where local administrations are supported with adequate financial resources and technical competences, they are able to face the problems deriving from rapid urbanization.

3.3 Small towns as predominantly vernacular settlements

Small towns in Sub-Saharan Africa are basically rural contexts that are undergoing fundamental transformations, as described in Section 2.2. In addition to socio-economic and cultural characteristics, the physical structure of the rural towns is also changing. It can be affirmed that vernacular settlements and traditional housing typologies are still widely dominant in the landscape of African small towns. Nevertheless, “urban” and “modern” settlement patterns and housing models are being imported as a consequence of ongoing global processes. The result is a dialectic relationship between vernacular traditions and modernization that expresses itself in a complex mixture of traditional and modern elements. The term “vernacular” was associated to architecture for the first time by Giles Gilbert Scott in his “Remarks in Gothic Architecture” in the mid-nineteenth century. With a linguistic analogy, it compared the formal language of the educated elite with the “language of architecture” and the language of the common people with the “vernacular” in architecture. Moreover, a particularly accurate definition is to be found in the *“Encyclopaedia of vernacular architecture of the world”*: “Vernacular architecture comprises the dwellings and all other buildings of the people. Related to their environmental contexts and available resources, they are customarily owner—or community—built, utilizing traditional

³⁵ The construction of colonial cities can be exemplified in two forms of bad practices. “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” (Diamantini, 2009).

technologies. All forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of life of the cultures that produce them” (Paul Oliver, 1997, Volume I, pii). Another characteristic to be underlined is that vernacular architectures may be adapted or developed over time as needs and circumstances change (Oliver, 2003). This definition of vernacular architecture may also be extended to settlements³⁶. The word “vernacular” describes those settlements for which the organization and relationship to territory and site, social structure, economy, markets and communications are the product of the spontaneous activity of the people who live them, rather than of intentional and professional spatial planning. They can be considered a direct manifestation of the social organization of the people that build them as well as their cosmovision and material culture. The latter comprehends forms and technologies that have been developed by a community over time in the adaptation process to climatic and environmental conditions by using materials available in nature or artificially manufactured according to local skills. The following are the most important characteristics of vernacular settlements and architectures:

- Uniqueness

After having proposed punctual observations on the form of hamlet, villages and townships all over the world—from the morphology of Moroccan nucleated townships or *ksar*, to the dispersed homesteads of the *campesinos* of Costa Rica, to the linear villages of the Asante in Ghana—, Paul Oliver stresses the primary characteristic of vernacular settlements: their uniqueness. “History, topography, resources, economy, technology, social structure, security, opportunity and communications all play their part. Such is the diversity of settlement types and locations that although some morphological similarities may be identified which invite classification, the balance and relative prominence of the multiplicity of factors which influence man’s settlements and dwellings in indigenous contexts, are unique to their specific circumstances” (Oliver, 2003:63). In contrast to the homologation trend of current planning practices, each settlement produced by the spontaneous human activity is the original product of the complex interaction of the community and the place.

This is also true when admiring the originality of each single dwelling, even within the same town and inscribed in the same building tradition. “This is the way with most forms of indigenous building: the tradition establishes a broad matrix, the individual builder designs and constructs to suit his or her requirements within it. Such dwellings are neither slavish

³⁶ “Vernacular architectures are not confined to dwellings, but comprehend all the built environment, that is the product of the complex interaction of many cultural, socio-economic and environmental aspects of each specific society. In vernacular settlements, anyway, dwellings of humankind are surely widely dominant, with respect to all other functions” (Oliver, 2003: 260).

copies of their predecessors, nor willful deviants from them. Construction is not a matter of intuition as if the builders were like birds making their nests, but the result of deliberate decisions taken to meet perceived needs. A single tradition may be described in general terms, but it should be understood in specific ones; the differences are subtle but significant, eventually contributing to the slow changing of traditional form as innovations are introduced and influences assimilated” (Oliver, 2003:79).

Furthermore, decoration is often very diffused in almost any housing tradition worldwide. It expresses generally the culture of the population it belongs to, often through sacred, religious and ceremonial motifs. Nevertheless, decoration may also manifest the power, prestige and richness of a family with respect to the others. Or it simply shows the aestheticism and the need for personalization in even the most modest dwellings.

- Use of natural resources available *in loco*

Vernacular settlements and dwelling types are influenced by the resources that are available at the time of building, and the skills and technologies employed in obtaining, making and building with them.

An important characteristic of vernacular settlements and architectures, in fact, is the use of natural resources available *in loco*. These resources are sometimes used directly while sometimes need to be transformed (as in the case of bricks and tiles). Some examples of the use of natural resources are architectures made of stones; earth; wood; and other vegetable building materials such as bamboo, reeds and grasses. The use of each of these materials has produced a wide range of possible constructing techniques.

This is the case of earthen architecture. Earth—or mud, when mixed with water—is the most ubiquitous building material in the world: half of all existing dwellings being constructed of it³⁷. Earthen architectures are very diffused throughout Africa and, in particular, they are widely dominant in the small towns of Sub-Saharan Africa. Different techniques have developed along centuries and along different countries, such as rammed earth, *bajareque* (named *pau i pique* in Mozambique) and adobe³⁸.

³⁷ “Earth, used for eleven millennia, remains today the most widely used building material worldwide. A third of humanity lives in earth architectures, more than two billion people in 150 countries. The architectures of earth, simple and monumental, are present in various contexts and respond to diverse needs” (<http://craterre.org/>).

³⁸ In the rammed earth technique, earth is broken up with a pick and wetted. Then the formwork box is filled with it and tamped hard. After compacting the box is moved along the wall for the next section to be made. This technique is common, for example, in West African savannah grassland villages, such as those of the Gurunsi people of Northern Ghana and Burkina Faso. Another earth building technique is the so-called *bajareque*, which consists of a wood frame for the walls that is filled with earth. The most widely-used technique, however, consists of building walls with sun-dried earth bricks, called adobe. Mud is generally mixed with straw and bricks are formed through moulds. After having dried in the sun, they are ready to be lined up with earth mortar to form walls, domes and vaults. This technique is widely used all over Sub-Saharan Africa, and also among *bantu* people of Central Mozambique, where the case studies of this research are situated.

Natural architectures have been demonstrated to be environmentally and economically more sustainable with respect to those built with industrial materials. They are made of materials that are generally freely available in nature and *in loco*. Therefore, natural building elements are obtained with minimum transportation costs and, frequently, are worked by hand and involve little or no use of high energy consuming fuels. This is true also when assessing the whole lifecycle of vernacular architectures, from “primary energy demand” related to materials’ extraction and processing, to transportation, construction, use and waste management. Natural materials, in fact, such as earth for example, are re-usable and avoid the problem of waste management. “Vernacular architecture is therefore ecologically sensitive and with regional resources being carefully nurtured, is, as it has always been, economically and environmentally sustainable” (Oliver, 2003:250).

- Climatic suitability

Throughout history, one of humanity’s primary necessities has been to adapt to climate. This has been achieved by modifying environmental conditions through architecture. Vernacular settlements present a wide range of solutions, formal and technological, that local communities developed over time to improve local microclimate and environmental conditions. They did this without the use of “active systems”, having had only “passive means” at their disposal: orientation and form, building materials, constructing techniques, and natural elements (i.e. vegetation and water bodies).

In hot, dry, tropical regions, for instance, such as the savannah regions in the south of the Sahara, the Muslim preference for domestic seclusion, particularly for women, plays an important part in the organization of the villages and towns, but the climate also exerts powerful constraints on building. Defense against solar radiation starts with the orientation of the building, which is seated so as to expose as little as possible of its external surface to the intensity of the sun, and in particular the roof, which receives the highest levels of solar radiation. Moreover, dense, thick walls of stone and mud are invariably built, and houses are constructed close together, casting deep shadows over passageways and lanes and on the walls of adjacent buildings. There are few openings on the outside walls, and houses frequently face towards courtyards. Though this can be attributed to the need for seclusion, it is also because large openings would admit direct sunlight and heat.

Contrary to these nucleated, dense townships, the dispersed homesteads of the *campesinos* of Mesoamerica and the linear villages in tropical rainforests of Africa respond to the necessity of facilitating cross-ventilation among the constructions. This, together with a large presence of vegetation within the built area, is the only mean to passively improve indoor and outdoor comfort in wet and hot climatic conditions.

The previously described building materials, selected from the natural resources available *in loco*, can also be examined in terms of their climatic suitability and performance and of the

means by which cultures have utilized their thermal properties, or have devised methods or structures to modify climate. Natural architecture in general—and earthen architecture in particular—demonstrates to be more appropriate to different tropical climates, in terms of providing indoor comfort, than architecture that utilizes industrial materials³⁹. In rammed earth, adobe and clay buildings, for example, a comfortable indoor climate is achieved by passive means. “Exposed to the sun’s ray the external wall surfaces absorbed heat, but as soil transmits heat slowly the interiors were likely to remain cool during the day. Later the walls, acting as a heat-store, gently transmitted the warmth into the interior, keeping the temperature pleasant enough at night” (Oliver, 2003:130).

Furthermore, devices that add to comfort are often introduced in house design. Due to the intense heat in the desert zone, for instance, *rowshin* box-frames (or *shish*, or *mashrabiyya* in Egypt) are stacked on the façade of buildings in South Arabian, protecting it from solar radiation while admitting air and light and ensuring privacy. Another example is the wind-scoops in North Africa (named *badgir*, “wind-catcher”, in old Cairo), which collect breezes above roof level and transmit them to the living quarters. Furthermore, temporary appendages are also often used. Responses to climates, of course, vary throughout the world and specific solutions are often extremely localized.

- Spatial relations reflecting socio-cultural aspects

Numerous means have been evolved over generations to not only to aid adjustment to extremes environments, but also to accommodate the particular living patterns of specific cultures. Vernacular settlements are, then, also the expression of the culture and of the socio-economic organization of the population that produces them. The spatial relations among different elements of the settlement can seem casual at first glance, but to a more careful analysis it is always possible to find precise rules and rationality that is consistent to the culture of the people, their activities and the characteristics of the territory. For example, in *cikoja* villages of Malawi, dwellings’ disposition follows matrilineal linkages according to the *yao* culture.

These considerations are also valid for vernacular architectures. Community structure and family type make demands upon spatial relationships. Moreover, the cycle of the day, the seasons, the working year and of life itself profoundly affect the use of internal and external space. The diversity of dwelling types and traditions directly reflects the diversity of the

³⁹ Theoretically “the Tropics” refers to the belt between the Tropic of Cancer (23.50°N) and the Tropic of Capricorn (23.50°S), the limits of the overhead noonday sun. Anyway, they are more effectively defined by the areas of the world covered by isotherms of 20°C mean annual temperature. This broad band embraces Central and most South America, virtually all Africa, parts of southwest Asia, the India subcontinent, southern China, mainland and insular southeast Asia, and much of Australia and Oceania. The dry desert, and semi-arid steppes, and the tropical savannah and rain forest regions all largely fall within this belt. Therefore, there are many different typologies of tropical climates.

cultures that build them. Some of these are notable for their spatial organization, for their scale and for the size of the nuclear or extended families, or even entire clans, that they may accommodate. In some cases, there are differentiated spaces that arise from gradients of privacy or role, whether or not these are defined in terms of kinship, gender, age, status or the reception of guests. Likewise, there are spaces that are considered to be more sacred than others, where degrees of purity or profanity are expressed in the location of building parts and functions. And there are numerous cases where such distinctions are not readily apparent but are defined by custom and learned by behaviour. Designated areas for the hearth, for the consumption of food, for sleeping, for craftwork, for relaxing or for prayer may exist in specific traditions.

- Cosmvision's representation

Vernacular settlements and architectures are also the manifestation of the cosmvision of the society that produces them, which is to say the means of its spiritual, religious and ancestral characteristics. Societies and individuals attach significance not only to particular buildings (i.e. churches and other places of worship), but also to their houses. These relate to their value systems, ranging from personal identification with the home to the cosmic symbolism of the dwelling, its location and orientation. "The dwelling has significance. Sometimes explicit, sometimes wholly implicit, this may be expressed in built form and details, in spatial organization, or through sacred and secular symbolism and decoration. But in every case, these factors reflect the behaviours, customs and beliefs, and the hierarchies, values and aspirations of the members of the cultures concerned" (Oliver, 2003: 261). It is the case that the *karang*, the Bali vernacular house, derives its spatial organization from the representation within a rectangle of the *Parusha*, the first human being according to the Hindu culture. The *karang* is also inscribed within a rectangle, and each indoor function is placed in relation to a part of the body of the *Parusha*. Another example is the *sakalava* house in Madagascar, the indoor and outdoor functions of which are placed according to an astrological association.

- Self-building process

One fundamental characteristic of vernacular architectures, and in particular dwellings, is that they are built not by professionals, but directly by their owners. "In terms of its material value the house is frequently the most expensive item in property of the individual or family. Its value lies not only in its resale or rental potential but also in the expenditure of effort, skill and personal involvement of those who have been its builders as well as its owners. A bond is established between the builder and its dwelling which is far more profound than the teutonic concept of *heim/home*, exploited in the imagery and media of northern Europe and North America" (Oliver, 2003: 261).

Housing, then, is to be intended not as a product but as a process. Self-building processes

allow the expression of the identity and subjectivity of the owners/builders, and a creative, non-standardized adaptation to specific necessities and conditions. Sometimes self-building is also a religious ceremony that further reinforces kinship relations and community ties since mutual aid between neighbors is customary. Within the ceremony, each member of the family has a role, which changes according to specific cultures. Even children help in the construction and, when they are grown-up, they build their own house in the family compound. “Learning to build is part of the process of becoming a fully participating member of many societies, and the transition from imitative play to training in the craft may be a rapid one” (Oliver, 2003:80).

Actually, all vernacular settlements of the world share this important characteristic: the transmission and passing on to subsequent generations or adjacent cultures of the housing traditions. In non-literate societies, most vehicles of communication are direct between parents and children, often involving members of three generations. Play and mimicry have a fundamental role in the transmission of skills and the use or respect of spaces. Conscious and physical memory training may be inculcated and reinforced through song, proverbs, axioms, repetition by rote and, above all, by sensitivity to the lessons of their own experience. By many of such non-literate, non-technical means the complex of traditions, which are embodied in the dwellings of a culture, are acquired, learned and transmitted to others over time⁴⁰.

- Summarizing: holistic approach

Vernacular settlements and dwellings are regional and cultural and are subject to many influences. Resources, technology, climate, environment, lifestyles, values and meanings all play a part in shaping settlements and dwellings built by the people. The vernacular habitat, then, is the product of the interaction and harmonious fusion of all these tangible and intangible aspects of a community. This holistic approach, spontaneously adopted by the people in their self-building activity, is typical of the vernacular settlements. Addressing the issues of local settlements and architectures that communities developed spontaneously over time is unavoidable for planners dealing with prevalently vernacular contexts, which small towns of Sub-Saharan Africa are.

⁴⁰ “Of particular importance with reference to dwellings are the selection of the site, and where applicable the fields of influence of beneficent spirits, the consecration or other ritual observances at commencement, the layout and the spatial organization of the building, and the finding, obtaining and preparation or transformation of the materials. These may be transmitted by engaging the youth of the culture, in the processes, but at all stages, instruction in the appropriate observances is shared across the generations. By no means do all societies have religious or symbolic connotations in all they do or build but the correct procedures are important to each. The processes of construction, from the digging of the foundations or the insertion of major supports, to the topping out of the roof or the affixing of the final finial, may be age or gender defined, but instruction of youth is fundamental” (Oliver, 2003: 253-54).

3.4 Modernization and deculturation

Vernacular settlement patterns and architectures evolved over millennia and still represent the majority of the built environment among many cultures. Nevertheless they are disappearing fast, since they are being replaced with settlements inspired by Western models. The latter, as seen in Section 3.2, are no longer intimately related to the characteristics of the place and of the community that lives it. On the contrary, they are producing a growing homologation of the living environments at global level. The risk of the present trend is not only that of providing settlement solutions that are inadequate to local contexts, but also of losing vernacular traditions, which are a precious world heritage of urban diversity, material cultures and skills.

Western models have been introduced in most African countries by international aid agencies and NGOs within international cooperation programs, but they have also been assumed by national and local governments. To great extent, in fact, urban programs are generally instituted by national governments and local authorities, engineers and builders, many of whose attitudes and values have been shaped in Western moulds.

The reasons for the neglect of vernacular buildings are many and complex. First of all there is an ideological reason, since moves to destroy building traditions have been associated in some countries with a drive to modernize. To countries that are industrializing or “modernizing” with the intent of participating in the global economy, vernacular traditions are often perceived as an embarrassment. “Largely the issue is one of prejudice; ignorance and hostility to what has been regarded as ‘bush’ or ‘backward’ cultures, antipathy to vernacular architecture and the use of traditional resources and techniques, and fears of being ‘held back’ from modernizing” (Oliver, 2003:252). More frequently, reasons are related to commercial interests. The stigmatization of many dwelling traditions as anachronistic in the new millennium, in fact, “suits the interests of many governments and multi-national corporations, not to mention a nascent mass-housing industry” (Oliver, 2003:252).

The described homologation in housing cultures worldwide, then, has been generally recognized to be a consequence of the “modernization” process. Giorgio Borsa explains the concept of “modernization” as “the transformation of what Braudel calls the *civilization materielle*, that is, in a very narrow sense, the transformation in ways of life of the mankind”. This transformation started in the second half of the 18th century, when relevant changes occurred in the economic system as a result of scientific and technological development and in the new standard of living that derived from it. This marks the beginning not only of a new period of the European history, but of a new age: the civilization of the machine. Borsa explains the ease with which the Western model has been exported outside Europe as follows: “the birth of the modern world has a tremendous pervasive force due to this epochal character. Think by analogy to the discovery of fire: when a tribe came into contact with a

neighboring tribe, who had discovered the use of fire to bend the metal, for cooking or warming, could not continue to live as before. The same thing happened with the development of the modern world. When Europe came into contact with other civilizations as ancient, has forced them to adapt. I am convinced that—for better or worse, not make value judgments—the modernization process is irreversible and unstoppable for two reasons. The first is that it becomes a condition of survival. The second reason is the epochal content of the modern world: the discovery of economic development. Wealth and poverty have always existed, but it is just a concept of modern civilization that we can take away from the consumption part of the wealth produced to systematically invest it in the production of new wealth, setting in motion the process that we call development. The consequence is going out of poverty, and this has had a disruptive effect on the collective psychology, since it made aware for the first time that poverty is not destiny, it is not part of the human condition as death, but can be fought and won. This is the pervasive power of the modern world when it meets pre-modern societies” (Borsa, 1996:427).

It has already been discussed in Section 1.2 that the promises of the theory of modernization were widely disregarded. Anyway, it is interesting to focus on the psychological component of the exportation of the Western model that, as stressed by Borsa, is pervasive because it offers a promise of “development”. Modern houses built of industrial materials, for example, even if less adequate to local contexts, are not only accepted, but desired because they represent “modern”, “urban” solutions, associated to Western lifestyles and—therefore—to richness and well-being. This psychological effect is possibly more effective in producing the globalization of Western models than any other ongoing exogenous process in small towns of Africa. Actually, vernacular settlements and architectures are being substituted not only by housing policies and programs implemented by international aid organizations and NGOs, but also by the spontaneous choices of individual households. It is not only a passive acceptance, but rather a low-cost replication of Western lifestyles that are perceived as the most desirable ones and—when not affordable in the short time— achievable in the future. This situation has been described as cultural colonization or, using a definition by Latouche, as “deculturation”. Latouche affirms that one transnational cultural model, the Western model, is driving the collective imagination and life in all its aspects towards global uniformity⁴¹. Westernization is conceptualized as follow: “the West has to do with a geographical entity, Europe; with a religion, Christianity; with a philosophy, the

⁴¹ “If we consider the story of the battles—writes Christian Maurel—colonialism has failed. Just make the history of mentality to realize that it is the biggest hit of all time. The best product of colonialism is the farce of decolonization. The whites have retreated behind the scenes, but they are still the producers of the show” (Latouch, 1996:10). And also, “Westernization is first of all a giant world economic fiction, even if the most spectacular result is the standardization of models rather than the achievement of real means to comply them” (Latouch, 1996:89).

Enlightenment; with one race, the white race; with an economic system, capitalism; and yet it does not identify with any of these phenomena. Is it not, then, more broadly, a culture or a civilization?" (Latouch, 1996:34). Therefore, Westernization is seen not only as a result of a process of economic integration but, more in general, of a "deculturation" process. The introduction of western values, such as science, technique, economy, development, domination of nature, are at the basis of such a "deculturation", that "gets more and more serious because of the therapy taken to remedy it: the politics of development and modernization" (Latouch, 1996:66).

Furthermore, explicitly referring to the Third World, Latouche affirms that the very particular form that contemporary urbanization is assuming increases this "deculturation" even more. Urbanization in the Third World, in fact, mostly refers to the Western transnational model, which destroys traditional forms of organization of the space. It is the product of the loss of cultural identity and, in turn, it aggravates this uprooting and clearly causes a break with the rural culture.

Hassan Fathy had already described the effects of "deculturation" in small urban centres of Egypt at the beginning of the 1970s. At that time, he noticed that towns and villages were becoming more and more ugly and their living environment was worsening rapidly. This was a consequence of the loss of the vernacular tradition, which was replaced by "urban models"⁴². "Unfortunately this urban architecture is that is taken by peasants as a model of modernity and is gaining ground in our villages; on the outskirts of Cairo or Behna we can read the approaching fate of Gharb Aswan" (Fathy, 1973:43). The loss of settlements' quality was not to be referred only to the aesthetic aspects, but also to the bad execution of imported building techniques. "To flatter his clients and persuade them that they are sophisticated and urban, the village mason starts to experiment with styles that has seen only at a second or third hand, and with materials that he cannot really handle with understanding. He abandons the safe guide of tradition and without the science and experience of an architect tries to reproduce architects' architecture. The result is a building with all the defects and none of the advantages of the architect's work. Thus the work of an architect who designs, say, an apartment house in the poor quarters of Cairo for some stingy speculator, in which he

⁴² "Particularly on the outskirts of provincial towns, where the most recent buildings has been taking place, the ugly design of the houses is emphasized by the shoddy execution of the work, and cramped square boxes of assorted sizes, in a style copied from the poorer quarters in the metropolis, half finished yet already decaying, set all angles to one another, are stuck up all over a shabby wilderness of unnamed roads, wire and lines of washing hanging dustily over chicken runs. In these nightmarish neighborhoods a craving for show and modernity causes the house owner to lavish his money on the tawdry fittings and decorations of urban houses, while being miserly with living space and denying himself absolutely the benefits of real craftsmanship. This attitude makes the houses compact and outward-facing, so that the family has to air bedding over the public street, and air itself exposed to the neighborhood upon its barren balconies; whereas if the owners were less cheap-minded they could take advantage of the only house type that can make life tolerable in these places, the courtyard house, and enjoy both space and privacy" (Fathy, 1973:44).

incorporates various features of modern design copied from fashionable European work, will filter down, over a period of years, through the cheap suburbs and into the village, where it will slowly poison genuine tradition” (Fathy, 1973:45).

The observations made by Fathy, about the introduction of low-quality “urban” housing models and the poor living environment that they produce, effectively describes the “deculturation” process occurring in small towns of Sub-Saharan Africa today.

PART II

Case studies' analysis

CHAPTER 4

Research methodology

4.1 Development of an analytical framework to approach case studies and field research

To approach case studies and field research, an analytical framework was developed. The objective of the framework was to identify which topics to deepen and what information and data to look for during the research. Multiscalarity, transdisciplinarity and a holistic approach are the three main characteristics of the framework. The whole of the research was based on these principles.

The framework puts different levels of analysis into relation with four “sensitizing concepts”¹. The use of “sensitizing concepts” as a guide to the understanding of the empirical reality of the selected case studies was very useful due to the tremendous lack of urbanization theory related to small towns of Africa as already discussed in Section 3.1. Caia and Sena, in fact, could not be analyzed through “definitive concepts”, which are intended as those elements that constitute the theory and through which it is possible to analyze the reality in a structured and logically sequential way. The rural towns should rather have been explored with the help of some paradigms that offered “directions along which to look”. The global processes, that involve small towns of Africa and that were presented in Section 2.2, provided these paradigms. “Urbanization of poverty”, “administrative decentralization”, “reticular urban systems” and “rural-urban continuum” were used as “sensitizing concepts” in understanding and describing the main characteristics of the rural towns and the transformations that involve them.

Furthermore, rur-urbanization is a complex phenomenon that needs to be understood not only at local level, but also in relation to relevant processes that are taking place at global, national,

¹ According to Blumer’s definition, “*sensitizing concepts* prepare the researcher to the perception of the empirical reality, which is not yet defined not only in operational but also theoretical terms. Sensitizing concepts, then, are a guide to approach the empirical reality and also a self-correction instrument, that helps in organizing, controlling and enriching with empirical data proposals about this reality, rather than caging it in the abstract definition of a definitive concept” (Blumer, 1969: 149-150). Furthermore, the difference between “sensitizing” and “definitive” concepts is explained as follows: “a definitive concept refers precisely to what is common to a class of objects, by the aid of a clear definition in terms of attributes or fixed bench marks. A sensitizing concept lacks such specification of attributes or bench marks and consequently it does not enable the user to move directly to the instance and its relevant content. Instead, it gives the user a general sense of reference and guidance in approaching empirical instances. Whereas definitive concepts provide prescriptions of what to see, sensitizing concepts merely suggest directions along which to look” (Blumer, 1969: p.7).

and regional levels. These processes produce—directly or indirectly—strong impacts on the socio-economic and physical structures of the rural towns. Therefore, the case studies were analysed on four levels: the macro-institutional (national and international), regional (Caia district), urban and household levels.

It was possible, then, to obtain a matrix where “levels of analysis” constitute the columns and “sensitizing concepts” the rows. Crossing “levels of analysis” and “sensitizing concepts”, I obtained indications of what to look for within my research.

		LEVELS OF ANALYSIS			
		Macro-institutional (national and international)	Regional (Caia district)	Urban (Caia and Sena)	Household (Caia and Sena)
“SENSITIZING CONCEPTS”	Urbanization of poverty	Demographic dynamics at the national and provincial level.	Demographic dynamics at the district level and the main driving forces.		
	Administrative decentralization	Public sector reform.	Administrative decentralization and new tasks of the local administration.		
	Reticular urban systems	Modernization of transport infrastructures and development programs.	Rural-urban linkages and sectoral interactions; poverty reduction and economic development policies and programs.		
	Rural-urban continuum	ASPECTS	Socio-economic	Socio-economic structure of the towns.	Family composition; livelihood strategies; access to services and infrastructures.
			Environmental	Environmental context.	Patterns of use of natural resources.
			Physical settlement	Settlement patterns; localization of infrastructure and services.	Housing typologies and building technologies.
			Local government	Role of traditional authorities and formal institutions.	Participation in the decision-making processes.

Figure 4.1. Summarizing scheme of the analytical framework

“Urbanization of poverty”, “administrative decentralization” and “reticular urban systems” are the three “sensitizing concepts” that guided me in analysing Caia and Sena in relation to their macro-institutional and regional contexts. The aim was to understand which are the impacts on the rural towns of policies, programmes and other major processes taking place at national, international and district levels. Particular attention was paid to: national and district level demographic dynamics and their main driving forces; public sector reform, administrative decentralization and “deconcentration” processes and the growing role of local administrations; modernization of transport and communication infrastructures; economic

development and poverty reduction policies and programs; rural-urban linkages and the growing role of multinational companies and private economic operators acting in the district. Moreover, the concept of “rural-urban continuum” oriented me in the analysis of the case studies at local level. The mixture of rural and urban characters in Caia and Sena was explored through two different levels of analysis: the urban one and the household one. A holistic approach was adopted by considering different aspects at the same time: socio-economic, environmental, institutional and those related to the physical settlement. At the urban level, the main issues to be analysed were the socio-economic structure of the towns, their environmental contexts, settlement patterns, localization of infrastructures and services, and the role of traditional authorities and formal institutions. At household level, I analysed how new emerging lifestyles and the spontaneous settlement activity of families contributes to the transformation of the towns.

4.2 Research instruments

Field research was conducted by the author in the Caia district in order to directly approach the socio-economic, cultural and environmental context of the case studies.

After having developed the analytical framework and having established what to look for during the field research, the second step was to select appropriate research instruments. Finally, it was necessary to adopt a bricolage of different methodologies (Cardano, 1997: 46) since information and data, as individuated by the framework, were very different in nature and could have come only from different sources. The selected methodologies, which were borrowed principally from ethnographic research, were: analysis of official data and documents², direct observation³, interviews with relevant institutional and non-institutional actors⁴ and a household survey in Sena⁵.

² The research process consisted first of all in recollecting already existing official data and documents related to the topics individuated by the analytical framework. This official data and information was provided by district authorities, national and provincial governments, and international agencies. Most analyzed of this official data and documents were the 1997 and 2007 national census data; PARPA I and II; the national government’s development plans and projects; international aid organization’s programs; documents produced by the local administration: PEDD, PES, POTU, PEU; and a quantitative household survey led in 2006 in *Caia*. Moreover, different sectoral studies and working papers were at my disposal that had been elaborated on by the researchers of the University of *Trento* to support the spatial planning activity in the district.

³ It is possible to make a distinction between “participant” and “non-participant” observation, depending on the role of the researcher and whether or not he or she plays “an established and participant role in the studied environment” (Atkinson and Hammersley, 1983: 248). In my case, I never took part in the daily life of the community or in the households I studied and—moreover—I had physical attributes that made it evident that I was a stranger within the analyzed context. From this point of view my role wasn’t that of a “participant”, being limited as I was in observing, making conversation with, or interviewing people. Even if the above-explained dichotomy between “participant” and “non-participant” observation seems to recognize only a passive role of the researcher in the second case, it is useful to underline that any social research is a form of participant observation because it is not possible to study a social environment without becoming somehow part of it (Atkinson and Hammersley, 1983: 249).

⁴ Different interviews were made with relevant institutional and non-institutional actors. In Maputo: prof. Lage (Faculty of Architecture, *Mondlane* University of Maputo); Manuel Rodriguez Alberto (*Ministerio da*

While it is possible to individuate different methods of collecting data, it seems more difficult to detect “research steps”. In this case, it is probably more appropriate to talk about a “research process”, a dynamic process that connects together problems, theories and methodologies. It is a non-linear interaction between the conceptual and the empirical realms, where deduction and induction take place at the same time (Bryman and Burgess, 1994). Therefore, observation, interviews and collection of official documents and data were carried out during the field research in Caia and Sena, from July to September 2008, without a specific or rigid progression. Also, the elaboration of the material collected through different techniques did not follow a specific order and developed rather according to personal criteria⁶.

Field research was based mainly on qualitative techniques and this choice was made for a number of reasons.

The first reason is nature of the official data and documents related to the *vilas rurales* of Caia and Sena that is already available. This already existing expert knowledge has produced a considerable amount of quantitative data and information that extends to the whole population and to the whole urban areas, which was a useful starting point for the analysis of the rural towns. Anyway, this quantitative information did not allow a deeper understanding of the particular nature of these human settlements, nor how the population lives, uses and shapes the urban space and the surrounding areas. Qualitative research techniques, instead, allow the researcher to have an “internal point of view” and to understand the perspective of the subjects who are studied. In particular, different instruments of ethnographic-anthropological research, or field-study, were borrowed in which the researcher stays in the place of the research (direct observation), tries to understand the indigenous point of view, *its* vision of *its* world (listening and asking: interviews and surveys), and collects and analyses materials that the local society has produced (interpretation of documents) (Denzin, 1989).

The second reason has to do with the relationship between theory and research. In this case, the inductive approach, that is typical of qualitative research, was more appropriate to the lack

Administração Estatal- Direcção Nacional da Organização Territorial); prof. Julius Joao Pio (*Ministerio da Planificação e Desenvolvimento*); Anne Louise Grinsted (World Bank’s urban team in Maputo). In Beira: ing. Francisco Molhate (*Obras Publicas—Departamento de Habitação e Urbanismo*); different technicians of the *Direcção Provincial de Coordenação de Acção Ambiental—Departamento de Ordenamento Territorial*; dott. Sande (*INGC- Instituto Nacional de Gestão de Calamidades*). In Caia and Sena different interviews have been made with the technicians of the Spatial Planning Office of Caia District as well as to local administrators, different stakeholders (i.e. representatives of major economic sectors of the towns) and members of the NGOs operating in the district. The research instrument was a non-structured qualitative interview. According to the definition of Corbetta (1999: 405), this kind of interview is a conversation that is induced and led by the interviewer on the basis of a flexible and non-standardized scheme of interrogation. Themes of the interviews were indicated by the analytical framework presented in the previous section. In addition, interesting information was obtained also through casual conversations.

⁵ The household survey in *Sena* will be analyzed more in detail in the following Section (4.3).

⁶ As stressed by Corbetta (1999), the subjective sensitivity of the researcher and his or her personal ability to connect events and information and to obtain generalizations from the observation of the reality cannot be converted into schemes.

of a preliminary theory and to the exploratory character of the research⁷. Anyway, this doesn't mean that the researcher's starting point was a *tabula rasa* and, as seen, the selection of "sensitizing concepts" was a useful guide in the perception of the empirical reality.

The third reason concerns the object of the research. Understanding the characteristics of the rural towns and of the rur-urbanization process, including the emerging lifestyles of the population, is an objective that is better achievable through a qualitative approach and, in particular, through a holistic perspective. This perspective considers that subjects (or social phenomena) cannot be decomposed into variables that are analyzed separately as happens in quantitative research. Qualitative research, instead, is case-based and the author, at the end of his or her itinerary into the analyzed reality, analytically interprets all the empirical material related to the selected "case studies", which need to be understood in their wholeness. Finally, he or she reassembles it through a classification in "typologies" that are used as summarizing conceptual categories. This represents an attempt to connect empirical findings to theory as a possible form of rational and synthetic abstraction of the reality.

The fourth reason refers to the relationship with the research setting. From the researcher's side (coming from the University of Trento), the comparison with a non-Western culture required a transcultural transposition in order to get other cognitive and cultural themes. The choice of selecting qualitative research methodologies follows the need of establishing an empathic relationship and physical interaction between the researcher and the researched subjects in order to approach as closely as possible their perception of reality⁸. Furthermore, interaction means that the studied subjects have an active role and their direct and creative participation in the research process is encouraged. It must be underlined that a native technician of the Spatial Planning Office of the Caia district was always present during the field research to facilitate the process of transcultural transposition.

Qualitative techniques, then, allow an in-depth understanding of the studied context, but are also characterized by the accurate analysis of just a few case studies and by a high degree of subjectivity. To avoid the risk of making considerations that could not be generalized to the entire population or territory, stimulus and intuitions coming from the qualitative approach

⁷ As already stated, in this research there was no preliminary theory to be verified or "justified" through empirical data, so a deductive approach, by which theory anticipates observation, was neither possible nor desirable. The relationship between theory and research should have been rather interactive, in the sense that the starting hypothesis was very vague and the theory was to be clarified during the research process and would emerge from the observation and interpretation of the reality. Knowledge could have only come through an inductive method, by which the researcher "discovers the reality" free from prejudice and previous theories.

⁸ A "naturalistic" approach, based on the study of the reality in its natural course and by interfering, disturbing or manipulating it as less as possible, was not possible, due to the big distance between the researcher and the social setting of the indigenous *sena* towns. However, the researcher's external point of view is sometimes a strength: "one distinctive feature of the social researcher consists in transferring in the studied situation questions which come from its own culture and experience" (Corbetta, 1999). If a positive interaction between the "stranger" and the local context happens, what results then is a very rich process.

were integrated with the already available quantitative data and information. Quantitative and qualitative techniques led to a different, complementary knowledge of the empirical reality.

4.3 The household survey in Sena

4.3.1 Objectives

The objective of the household survey in Sena was to understand the primary characteristics of this rural town. The focus was on the investigation of the emerging lifestyles⁹ of the population and, through this, on understanding parameters of urbanization on the household level. This was necessary to obtain indications for the spatial planning activities in order to avoid the recurring mistake of mechanically transposing, in whatever context, schemes coming from Western culture. In particular, what mattered was the understanding of the mechanisms that allow a large part of the urban population to survive. Once understood, those mechanisms were to be safeguarded. It is important to underline that a further objective of the qualitative household survey was to enter into the perspective of the studied subjects: to understand their mental categories, their interpretations, perceptions and feelings, the reasons for their actions.

The starting hypothesis was that the relevant transformations involving Caia district are deeply changing the socio-economic composition and the physical structure of its small towns. The emergence of different social groups, with different lifestyles, was expected, where only a few years ago an almost homogeneous composition of the population was to be found. This mixture of lifestyles with reference to the urban-rural polarity would also lead to different ways in which the population structures the urban space and its immediate surroundings.

The starting questions, then, were: is it possible to identify different social groups in Sena? What are their main characteristics and lifestyles? How does this socio-economic differentiation of the population reflect on the spatial distribution of the households within the town? And what are the impacts of emerging lifestyles on the physical structure of the town and of the surrounding territory?

⁹The choice of focusing on “lifestyles” is due to the need to find a single category able to summarize all different practices and behaviours of the individual (in this case of the household). In sociology, a lifestyle is the way a person (or a group) lives. The actions performed by individual actors diverge into a large number of distinct social practices and the formal concept of “lifestyle” refers to the specific form of integration brought about by social actors. In their lifestyles, people realise a—partial—integration of the variety of social practices that span their daily lives. Actors “bind” their distinct (sets of) social practices into a reasonably “coherent” unity (Spaargaren and Van Vliet, 2000). However, the lifestyle concept does not only refer to the formal process of integration of social practices but also to the “story” which the actor tells about it. With each lifestyle there is a corresponding life story, in the sense that by creating a specific unity of practices the actor expresses who he or she is or wants to be. The lifestyle serves to express a person’s individual identity, a “narrative of the self” (Giddens, 1991). Describing the lifestyle, then, is not only a way to understand what people do and how they act in different spheres of their lives (i.e. the proposed research themes of the survey) according to a holistic perspective of the analysis of the human behaviour, but also to understand their subjective perceptions.

4.3.2 Why focusing on the household

The household was chosen as reference unit of the survey because in Caia District—as well as in most developing countries—it is within the family that most of the decisions concerning individual members' activities and their consumption (and thus their welfare) are made. An important characteristic of the household, in fact, is that there is a high degree of pooling of income and expenditure, and this leads to the consideration that the assessment at household level is more meaningful than at individual level (or the sum of individual levels), in representing the potential command over goods and services¹⁰ (Bardhan and Udry, 1999). Furthermore, the economy of the small town of Sena depends mainly on “family modes of production” (Sahlins, 1980), where people earn most of their livelihood working in their own enterprises, which can be family farms but also non-agricultural activities run by family members working together. This mixture of the economics of the enterprises and of the household is a characteristic of the situation of almost all families of Sena. Finally, the household is a useful sample unit in survey work because it can be easily identified by its physical properties, being a collection of individuals who live in the same housing compound. With reference to the population of the small town of Sena, a “household”¹¹ was meant a group of persons who usually live together in the same housing compound and eat from the same kitchen. Eating from one kitchen means that the arrangement to fulfil daily necessities is jointly managed.

The household normally consists of a single family that can have either a monogamous or a polygamous structure (up to 4 wives in Sena). The household can also include other relatives

¹⁰ The results of the survey allow the application of an *Agricultural Household Model (AHM)* to analyse and describe the economy of the small town of *Sena* whether or not householders are peasants or operate enterprises such as small-scale trading and handicraft. This model is usually applied in contexts in which households both produce and consume agricultural products. In this case, as often happens in Third World countries, we can talk about AHM under incomplete markets because in the small towns of *Caia* District, as well as of other rural districts of Mozambique, there is no market for land. In fact, the “*Lei da Terra*”, which was approved immediately after the War of Independence to regulate land tenure rights, ensures all households have access to land, both for agriculture and housing. More generally, a market is missing if the cost of participating in it (transaction costs) are so high that self-sufficiency is the household's optimal strategy (Taylor and Adelman, 2002). As we will see in the following notes, for 70% of the interviewed households, high labor-transaction costs discourage hired labor use. The missing labor market forces the household to be self-sufficient in the supply of labor. Assuming the AHM under incomplete markets means that the “separation property” between production and consumption—usually applied in household surveys in developed countries—doesn't hold because it is not possible to separate the household production decisions from consumption choices. The analysed households, in fact, can be considered both a producing and consuming institutional unit. Householders “...often consume at least a portion of what they produce, and household labour is a fundamental input in the production process of the enterprise. Consequently, individuals make simultaneous decisions about production (the level of output, the demand for factors, and the choice of technology) and consumption (labour supply and commodity demand)” (Bardhan and Udry, 1999).

¹¹ In order to simplify the analysis, the household is considered as a single unit—like in the Unitary Model—in which the aggregate behavior of the household corresponds to one utility function that can be explained by either common preferences/harmonious agreement/coming to consensus or by the emergence of an altruistic dictator (Bardhan and Udry, 1999). In the survey, however, attention is paid also to individual characteristics of the householders (i.e. age, place of birth, educational level), to intra-household division of labour and to bargaining processes related to the allocation of some resources.

(generally parents, brothers, sisters and nephews of the head of the household). Within the survey there was not a single case of a household made up of a single person. In a very few cases the household included also persons with no kin relationships, and only one family was spread among different housing compounds¹². The head of the household is generally regarded as the person among the group of householders who is responsible for satisfying the daily necessities of the household while a householder is anyone who usually lives in the household, whether s/he was at home during the survey or was temporarily absent.

4.3.3 Research tool

The research design was “open”, meaning that it was not strictly structured from the beginning. First of all, it was necessary to define the research tool, the interview to submit to the households during the survey. Seven main themes were identified as the most relevant ones by the researchers¹³ and were defined in a very generic way. These themes were: composition of the household; housing typology; income and expenditures; access to socio-cultural resources; relation to the local administration; use of environmental resources; subjective perception of the change in life conditions over the last ten years.

It was decided to discuss these research themes with two groups of privileged observers. The first group was composed of the CAM employees, selected because of their direct and deep knowledge of the analyzed context, most of them having lived in Caia for two or more years. Moreover, they represented a group of experts operating in the district and covering most of the analyzed issues¹⁴. The second group of privileged observers was composed of the local technicians of the Spatial Planning Office of the Caia district, who were part of the local community and were able to reflect the opinions of the group they belonged to, but at the same time they held a particular position within the community and had a deep knowledge of the object of analysis. This kind of interview, that is also named *focused interview* because it addresses a *focus group*¹⁵, was “non-structured”. Only main themes, some subthemes and the route of the discussion were established, and the interviewers had the role of introducing the themes in the established progression, stimulating the discussion and avoiding digressions.

¹² This is the case of a head of a household, whose two wives live in two different housing compounds, but anyway the two family units pool income and expenditure.

¹³ The research team was composed of Prof. Corrado Diamantini, arch. Cristina Mattiucci, arch. Roberta Nicchia (Department of Civil and Environmental Engineering, University of Trento).

¹⁴ These experts were: Andrea Patton, economist, responsible for the microcredit program; Chiara Bussetti, doctor, working in the sanitary programs; Elena Medi, working in educational area; Stefano Bellutta, engaged in urban planning and management activities; Andrea Spadaccini, engineer, supervising the construction of a big school complex; Massimiliano Zandomenighi, agricultural sector; Francesca Luchi, coordinator of the CAM, affiliated with the local administration and community authorities and involved in local decision-making processes (through the participation of the *Conselho Consultivo do Distrito*).

¹⁵ It was chosen to make interviews with groups and not with the individuals because these interactions were assumed to be favorable. From the comparison of different positions, indications can come out that could have been remained unexpressed through individual conversations.

Apart from that, the groups had a high degree of freedom in how to answer to the questions and their free interaction was stimulated. It was also asked separately of each group to express what, in their opinion, was interesting to add, what was not appropriate to ask in that context and the form through which questions should have been formulated. In particular the second focus group was tasked with defining the questions in such a way that the local population could understand the meaning.

Main themes and subthemes were defined by the interviews conducted by the groups of privileged observers, which provided the outline of a semi-structured qualitative interview, with both open and closed answers¹⁶. It was decided to test this scheme on two households¹⁷ in order to verify their understanding of the questions, not only in terms of the language used but also of meaning¹⁸, as well as their reaction to the selected issues¹⁹. By interviewing the first two households, new important issues emerged that had been not taken into account, such as those related to the “*buscados*”, odd jobs carried on by almost all families. Important was also to understand how much time was needed for one interview, in order to make the survey’s implementation plan. Finally, these first two interviews were necessary in order to coordinate the interviewers and prepare the next step.

Up to this time, in fact, interviews with privileged observers and with the first two households were made by all of the researchers together. After that, it became necessary to form three units, each composed of a researcher from the University of Trento and a local technician from the Spatial Planning Office of the Caia district, in order to interview as many households as possible in a very limited time. Just one week was assigned to this part of the field research, so the possibility of enlarging the reference sample was limited. Through the previous “test interviews”, it was calculated that a complete interview could last up to two hours. So each group could only afford to interview up to three or four households a day since the housing compounds had to be reached on foot and some of them were also an hour away from the starting point. Dividing the researchers into three units implied that the interview had to be as structured as possible. In order to reach the standardization of the interviews and to allow the

¹⁶ Within a semi-structured interview, the outline establishes the boundaries inside which the interviewer has to decide not only the order and the formulation of the questions, but also which themes to deepen and, if necessary, which others can be added. This offers flexibility even within a pre-defined scheme.

¹⁷ The two households were selected because, from the housing typology, they seemed to express a different socio-economic level. One housing compound (household no. 47) was a traditional *mudzi*, with a bench on the street for the domestic selling of products and with home-raised animals scratching around the compound. The other household (no. 46) instead had a conventional house, indicating a higher income and more urban behaviours.

¹⁸ Questions related to death and diseases, for example, were formulated in a different way, as well as those that regarded the household’s relationship with the public administration. The necessity for uniform units of measurement contained in the answers (agricultural production expressed in “*bultos*” and not kg, monetary income calculated on an annual base and not monthly, and so on) also emerged.

¹⁹ For example, in relation to illnesses, answers were evasive; in relation to expectations or aspirations, respondents seemed not to think about it.

comparison of the results, a structured qualitative interview²⁰ was elaborated (see appendix 1) on the basis of the previous semi-structured one. Questions were defined in form and progression so that the freedom of the researcher was very limited and the “stimulus” was the same for all interviewed households. Anyhow, contrary to what happens with quantitative questionnaires, households had complete freedom in expressing themselves because most of the questions asked for “open answers”. These were more appropriate to the explorative character of the survey and to the object of analysis: one’s “family way of life” is more easily describable than quantifiable. Furthermore, the interviewed people, mostly with a low educational level, would have hardly given closed answers that require a high capacity of abstraction. The relationship between interviewer and interviewed was not neutral and the interviewer had an important role in facilitating the expression of the answers.

4.3.4 Research themes

The structured qualitative interview that was proposed to each household was based on five research themes and related sets of questions. Main research themes were:

1. *Housing typology*. The documentation of a family’s housing condition consisted in making photos and drawings of the whole housing compound. The exact location of the compound was identified on the map of the town and the spatial organization of the compound was scratched out. Moreover, notes were taken on the function of outdoor and indoor spaces, on constructive technologies and building materials, on the year and cost of each construction. Attention was paid also to the vegetation present in the housing plot.
2. *Composition of the household*. The structure of the family was defined by collecting some quantitative information. The respondents were asked to specify, for each family member, the relationship with the head of the household, age, place of birth, ethnic group, spoken languages, educational level, year of arriving in Sena and previous settlement. Furthermore, they were asked to tell the story of the family in a narrative way.
3. *Livelihood strategies*. Particular importance was given to the identification of the livelihood strategies of the household, considering also the economic activities of each family member. Data was collected about subsistence agriculture, agricultural trade and other non-agricultural sources of income within the household. Very specific information was also provided about items of expenditures, savings and investments. A qualitative, narrative description of the daily routine and activities of the household was also asked.
4. *Access to socio-cultural resources*. Another investigation theme was the access to socio-cultural-recreational assets available in the town, such as education and sanitary services,

²⁰ The “structured qualitative interview” is a hybrid technique, since it allows the standardization of the collected information and at the same time it offers the opportunity to analyse each situation in its extreme complexity and individuality. This kind of interview, then, also allows one to get quantitative information. Even if the sample was too small to allow the use of statistical methodological techniques, it was useful to compare this data to that collected through quantitative surveys and to notice their correspondence.

governmental, religious, commercial and recreational services. Attention was also paid to investigating which households used what services and where those services were located.

5. *Use of environmental resources.* The last point to be analyzed was how each household used environmental resources such as water, land and vegetation, in order to fulfill their needs (the supply of energy and water, food consumption, sewage and waste systems, housing, and so on).

By analyzing all these themes together according to a holistic perspective, a picture emerged of the different lifestyles which are possible to find in *vila de Sena*. Moreover, it is to be noticed that all analysed themes have an impact on the spatial organization of the town.

4.3.5 Sampling

After having defined the research tool and the division into three units, the following step was the selection of a reference sample among the households of Sena, to which to submit the interview. At the centre of our research, there was the need to understand how the emerging ways of life were having impacts on the socio-spatial distribution of the population and on the physical structure of *vila de Sena* and its surrounding territory. Therefore, the reference sample was selected first of all according to a spatial criterion²¹. Forty-five housing compounds were selected at random on the map of the town that covered the whole built-up area included within the administrative boundaries. A number of households were interviewed from each of the five *bairros* of the town defined on the basis of demographic density (see figure 4.2). The second criterion was sociological: the attempt was made to include different social groups. This objective was pursued directly *in loco*. Once it was chosen how many households had to be interviewed in a specific area of the town, the choice of the sample units was made by selecting compounds that housed families of different socio-economic levels, giving priority to those which seemed more representative of the general condition of that area.

With reference to the small number of the interviewed households, it is to be underlined that, in the researchers' opinion, sample's representativeness had not to be statistical. Representativeness was to be defined in relation to the interest that the sample expresses with regards to the objective of the research: sociological (intercepting different social groups) and spatial (covering the whole built-up area). Moreover, the "qualitative" approach implies that the research could not be extended to a large sample of the population. Each interview, in fact, had to be very accurate and deep. Furthermore, analyzing data according to a holistic

²¹ This kind of sampling has been defined "judgment sampling" ("*campionamento a scelta ragionata*"; Corbetta, 1999: 60-61). It is a method of choosing sample units drawn from a larger population based on researcher's own judgment, grounded in relevant experience. The reference sample's choice, then, is not probabilistic, but it is based on some characteristics of the sample units (in this case the households). The sample, and the variables included in it, are (or should be) selected based on judgments in three primary areas: 1) their value; 2) their "relative risk"; and 3) the extent to which they are representative of the larger population. This kind of sampling is used when the reference sample is very small and it needs to reflect characteristics that are not too distant from those of the population.

perspective also considerably reduced the number of interviewed households. Finally, the qualitative approach of the survey was also justified by the availability of quantitative data coming from both the census and a survey carried out only two years earlier on six hundred households in Caia, the other *vila rural* of the district that presented many similarities with Sena (Gobierno do Distrito de Caia, 2006).

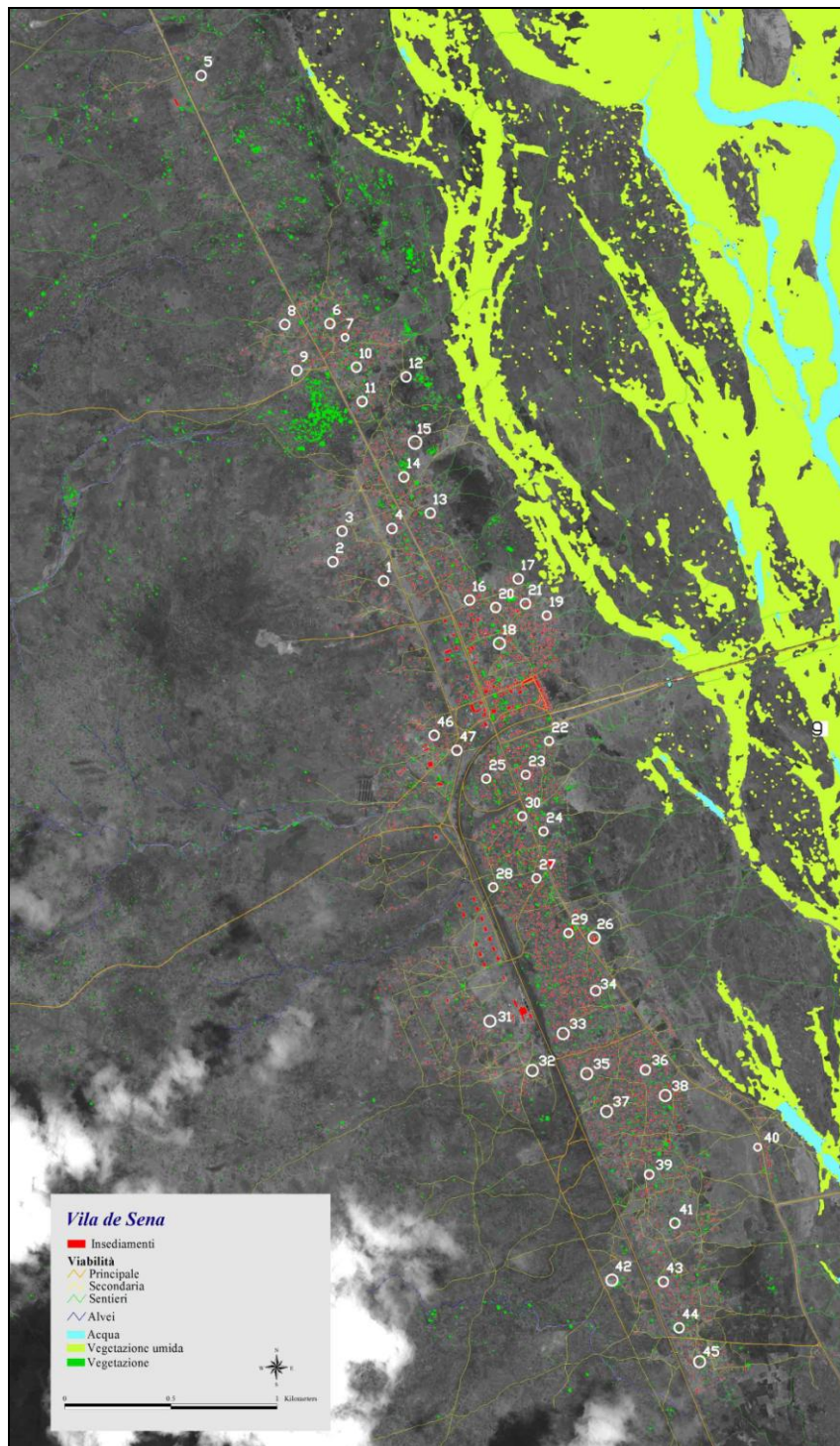


Figure 4.2 Individuation of the reference sample on the map of *vila de Sena*.

4.3.6 Survey implementation

Each interview lasted from a minimum of 1.5 hours to a maximum of 2 hours. The interviews were conducted at the household, partly as a way to make interviewees more comfortable and partly to allow the interviewer to get in deeper touch with the world that was being analysed. Furthermore, the study of the housing compound was one of the survey's main themes.

Fortunately, the local population is used to direct surveys, which are still the principal method to collect information in a Third World context where other data gathering systems are still not applied. Moreover, the presence of local technicians was a guarantee that the survey was both an "official" and "serious" task. Furthermore, families rest from agricultural activity in August, so most of them were at home, that is in their "urban" housing compounds, at the time of the interview and with a good disposition to have a two-hour conversation. Generally, all households expressed their pleasure in talking about different aspects of their lives and in no case distrust towards us was registered. On the contrary, each interview attracted the curiosity of neighbors and—in particular—children, which were sometimes the only disturbing element. The language used during the interviews was generally Portuguese, which allowed the researcher to communicate directly with the interviewed persons. In some cases, local technicians of the Spatial Planning Office had to translate from *Chissena*, the mother language of the *sena* people. Actually, the cultural and linguistic intermediation of the local technicians ended up being very important on more than one occasion also because open answers allowed unexpected issues to come out, which sometimes needed to be explained to the Italian researchers who were not used to many aspects of the local culture.

Once the housing compound was chosen, the first contact with the household was made by the local technician of the Spatial Planning Office who presented us, explained the reason for our visit and asked permission to interview a member of the household. This was generally the head of the family and, only if he was not at home, one of his wives or adult sons or daughters were the reference person. In some cases, other members of the family intervened in the discussion with comments and observations.

The first step of the survey consisted of making photos and a drawing on paper of the whole housing compound. Then, after having been invited to seat down on a mat in the compound's living room—that is under the shadow of a big tree dominating the open space—the interview could start. It has already been mentioned that the use of a structured qualitative interview provided the interviewers with a set of pre-defined questions and their succession. Even if some questions were "closed" like in quantitative questionnaires, most of them were "open" and required the interviewed person to answer freely, in a narrative way. Because of the qualitative approach, each interview is the product of an empathic, dynamic relationship between interviewer and interviewee. The interviewer generally had the role of orientating the discussion, but digression and elaboration were allowed when interesting themes—even

unexpected ones—were introduced by the interviewee. In all cases, the voice of the interviewed person was always dominant with respect to that of the interviewers.

Only 17 of the interviews were audio-recorded, because just one instrument was available. In all cases, however, the transcripts were written out on the same day. Moreover, at the end of each day, the three groups compared their experiences, shared doubts and talked about new themes and points of view that emerged during the survey implementation. The standardization of the interviews being impossible (as well as undesirable), it was necessary a continuous confrontation among the three research units.

4.3.7 Elaboration of the schedules and data analysis

Once the interviews were made, registered and written down, their interpretation could start. Although the research process involved more researchers up until this point, the next steps were made only by the author of this thesis.

According to the qualitative setting of the research, the analysis of the interviews was case-based, meaning that was centred on understanding the interviewed subjects (in this case the households) in their wholeness. Households were seen as an integral and complex unity in the belief that each human being is more than the sum of its parts. Therefore, all transcribed texts of the 47 interviews (and the recordings of 17 of them) were carefully analysed according to a holistic approach.

In the case of the structured qualitative interview, questions are predetermined and answers are open. This means that the same questions are asked to all interviewed people, even if they have the freedom of express themselves as they prefer. This research tool, then, allows reflection of the richness of each individual case but still produces a common cognitive base for all the interviews, which can be standardized through a codification procedure. Therefore, after having read all the texts of the interviews, it was possible to highlight the most relevant indicators that define different social groups and different typologies of lifestyles²². A number of different items were defined for each research theme²³. Items were selected because of their potential to offer a summarizing description of the analysed issues²⁴. Through this procedure,

²² Not all the information coming from the interviews was interesting with respect to the aim of defining different social groups in the town, with different lifestyles. For example, information related to the ethnic group was not relevant, because the entire population turned out to belong to the *sena* population; the access to commercial services is also the same for all households, which go every day to the central market to buy food or to sell something; further, all households exerted their right to vote, which is seen as a very important way to participate to the public life after a history of colonization, independence and civil war.

²³ For example, only two indicators were associated with the theme “housing typology”: one defining the location (indicator: “*bairro*”), the other interpreting all physical characteristics of the compound, summarized by the indicator “housing typology”. To describe the research theme “access to socio-cultural resources”, instead, six indicators were necessary: “use of sanitary services”, “school attendance”, “religion”, “use of recreational services”, “transportation means”, and “authority of reference”.

²⁴ Some indicators were related directly to a specific question of the interview. For example, in relation to the research theme “patterns of use of natural resources”, the question: “what energy supply system do you use to cook?”, provided the indicator “power source”. On the other hand, some other indicators were obtained through the interpretation of more than one question of the interview. For example, by analyzing the answers to all

it was possible to build a matrix of data where all 47 interviews (the records, the rows of the matrix) were classified on the same variables: the 27 indicators (the columns of the matrix). Recollected data and information had a very different nature and the variables were described through both qualitative categories (nominal variable) and numerical values (numerical variable, both ordinal and cardinal)²⁵. The different nature of the variables in the matrix of data is also reflected in their classification procedure. While cardinal variables were inserted directly with their cardinal numerical value in the matrix, for ordinal and nominal variables it was necessary to use a codification procedure. For all interviews, answers related to each indicator were read again in order to identify categories through which it was possible to classify the answers²⁶. In some cases, even when deducting categories from the analysis of empirical material, the support of the theory was needed²⁷. At the end of the codification procedure, it was possible to insert the relative values into the matrix. The complete matrix of data is reported in (appendix2), and the codification of the variables is reported in (appendix3). It is important to underline that what is codified in the matrix of data is only the part of the interview that is common to all cases and that can be defined as the lowest common denominator of all interviews. In addition, each interview has parts that vary from one case to

different questions related to household's expenditures, it was decided to introduce just one indicator to interpret them all, one that indicates what kind of needs households can satisfy through monetary expenditures (indicator: "satisfied needs").

²⁵Example of nominal variable: the previous settlement of the family was expressed by the name of the location, or the prevalent occupation was expressed by a nominal category. Example of ordinal variable: the educational level was expressed by the numerical ordinal value of the last class attended by the head of the household. Example of cardinal variable: the monetary income of the household was expressed by the numerical cardinal value in MTn/year.

²⁶ For example, all information related to the indicator "satisfied needs" were interpreted and classified in five categories: "basic needs, goods not freely available in nature"; "basic needs"; "psychological needs"; "management of complex expenditures"; "investment in improving the housing condition". In this case, categories were selected empirically by the researcher, who noticed that some expenditures were the same for all households (those individuated by the category "basic needs, goods not freely available in nature"). With the increase of monetary income, expenditures followed a progressive increase that could be traced back to an ordinal classification in which each category of expenditure comprised all previous ones (for example: if the household has expenditures which aim at satisfying psychological needs, that means that basic needs are also satisfied; managing complex expenditures means that basic and psychological needs are also satisfied, and so on). A possible reference for the selected categories could be those of the pyramidal "hierarchy of needs" proposed by Maslow (Maslow Abrahams (1943), *A Theory of Human Motivation*). However, it is important to underline that the use of this concept is functional to the classification of household expenditures, and is not used to interpret or classify the needs of the households in *Sena*. With respect to this point, this research refers rather to the Human Scale Development, the methodology used by Max-Neef. This methodology, opposite to the hierarchical model of Maslow, "is built on simultaneity, complementarity, and trade-offs. It thus offers a transdisciplinary insight to human development by including the Object, the Subject and their Interaction. It allows for in-depth insight into the key problems that impede the actualisation of fundamental human needs in the society, community or institution thus enabling facilitators of development frameworks—architects among them—to shape development centered on human being instead of narrow economic taxonomies" (Kauliskas, 2008).

²⁷ For example, in the case of the indicator "sectors of prevalent occupation of the household", three categories were individuated only in relation to the commercial activity: "domestic and street trade", "traditional trade" and "modern trade". These category were deducted from the study of the literature related to modes of production in Third World countries.

the other, corresponding principally to the narrative descriptions contained within the interviews and to the subjective digressions that were allowed by the “open answers”. It can be affirmed that the research produced both “hard” and “soft” data²⁸. According to the complexity of data, then, the analysis of the empirical material followed two different routes. On one hand, some data was standardized through categories, inserted into the matrix of data and analysed with the classical tools of statistical methodologies, mainly through simple statistical tools such as frequency distributions²⁹. On the other hand, the integral texts of the interviews were interpreted through methods that are typical of qualitative research, that is to say through a holistic approach.

4.3.8 Classification of the households

Following from the considerations of the previous Section, the classification of the households into typologies is the result of a holistic approach to the qualitative analysis of the interviews (that was possible thanks to the small sample of households) and is supported by an exploratory data analysis run on the matrix of data using “R - software environment for statistical computing and graphics”. The exploratory data analysis helped in understanding the main relations among the selected themes, subthemes and categories.

Households were classified into four different typologies on the basis of two different, but interdependent, criteria: monetary income and main occupation. It was noticed, in fact, how these two aspects principally influence the household’s lifestyle. All other characteristic elements analysed by the survey (such as the housing typology, family structure, items of expenditures, use of socio-cultural services, urban infrastructures and environmental resources), vary principally in relation to the amount of money that the household has at disposal, as well as to the typology of its main economic activity.

According to the selected criteria, then, the following four typologies were individuated which include those households whose existence depends respectively on:

1. subsistence agricultural activities (11 households);
2. agricultural and non-farm subsistence activities (21 households);
3. hybrid urban activities (11 households);
4. modern trade activities (4 households).

²⁸ The former are objective, reliable, precise, rigorous, unambiguous, standardized and, consequently, comparable. Soft data, on the contrary, is not concerned with objectivity and standardization, but rather with the richness and depth of the provided information, which must express the subjectivity of the point of view of the analyzed people, respecting their personal formulations and their cultural schemes.

²⁹ It must be underlined that the sample of households is too small to allow the use of statistic methodologies in order to extend the results to the whole population. Regardless, constructing the matrix of data and using statistic methodologies to analyse it was a useful support for organizing the empirical material.

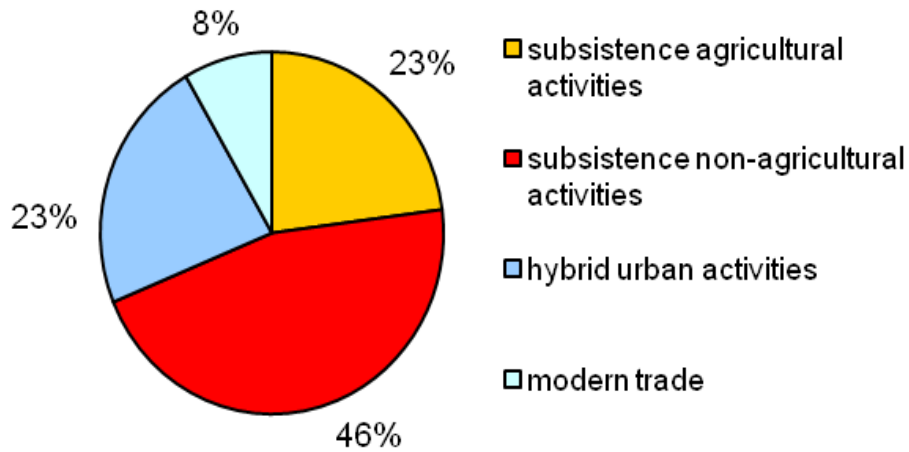


Figure 4.3 Percentage of interviewed households by typology

Individuating the fourth typology, that of households depending on “modern trade activities”, was not difficult. These households, in fact, are the “modern traders”, whose monetary income is much higher than that of all other households, as it is possible to notice in figure 4.4. It exceeds one million MTn/year (that is almost more than twenty-seven thousand euro/year).

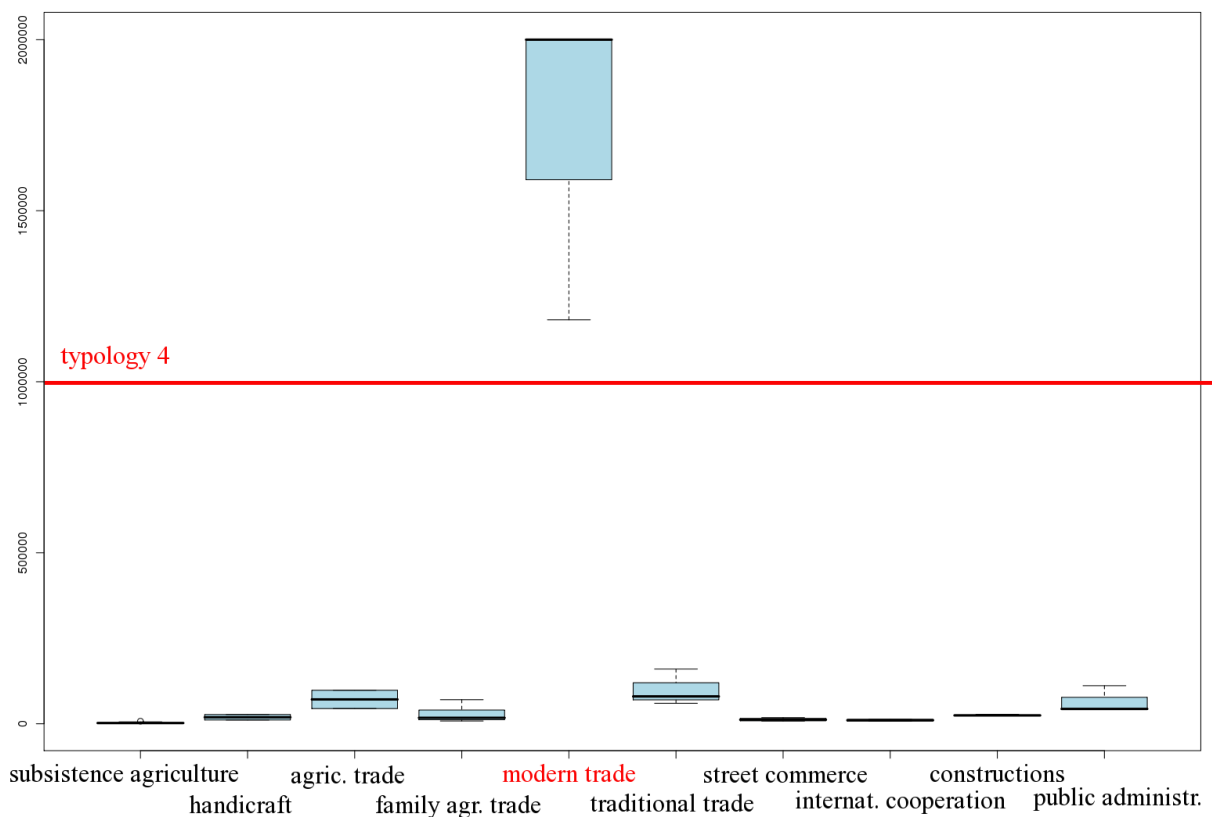


Figure 4.4 Classification of typology 4, according to monetary income (expressed in MTn/year) and prevalent occupation.

Also the individuation of the first typology did not present particular problems. Households whose main activity is subsistence agriculture, in fact, have almost no monetary income and their lifestyle presents markedly rural characteristics that make them easily recognizable as a typology apart. More difficult, instead, was the classification of the households comprised between typologies 1 and 4. After the careful analysis of the interviews, it was possible to individuate the monetary income of 40,000 MTn/year (almost one thousand Euros/year) as a threshold between the second and the third typology. It was noticed, in fact, that households below this threshold adopt livelihood strategies that can be related to the subsistence economic sector. Moreover, they present a lifestyle that has very different characteristics compared to those of the families that are above this threshold and whose main economic activities belong, instead, to the capitalist economic sector.

These four typologies, that are described in detail in Chapter 6, represent four different social groups, which express also the prevalent emerging lifestyles that is possible to find in *vila de Sena*.

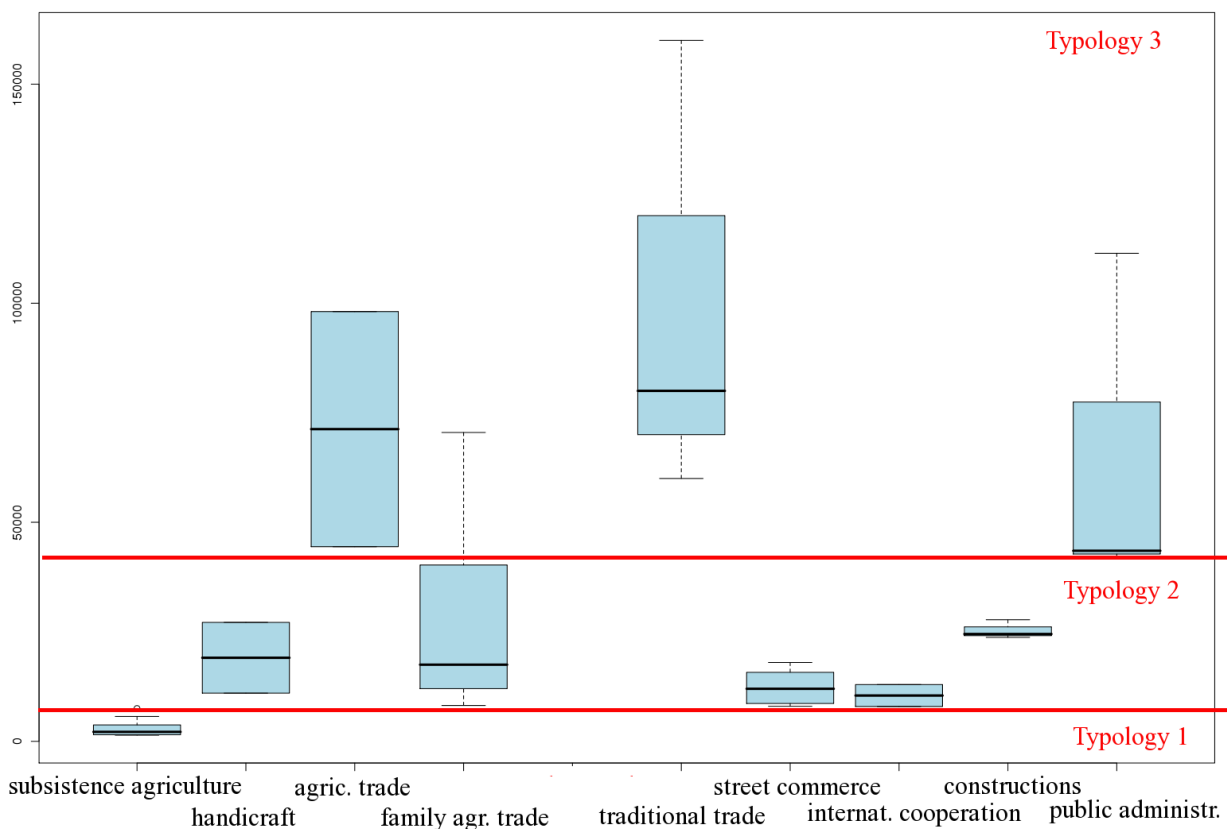


Figure 4.5 Classification of typologies 1, 2 and 3, according to monetary income (expressed in MTn/year) and prevalent occupation.

The reality of *vila de Sena* is more complex than what is represented by this classification, and the hybridization of urban and rural characteristics takes on as many different forms as the number of the interviewed households. But even if the “ideal type” is a conceptual category

that has no direct correspondence in reality, it is still a construction that comes from the observation of real cases from which only essential characteristics are extrapolated, “purifying” them towards a superior level of abstraction. Typologies, then, are used as a model, as a “borderline concept” through which reality can be interpreted.

4.3.9 Analysis of the spatial distribution of data

Finally, interesting indications for the spatial planning activity came from the analysis of the spatial distribution of data coming from the household survey.

First of all, it was investigated to see if the socio-economic differentiation of the population reflected the spatial distribution of the households within the town. This was done by finding the exact localization of all households on the map of *vila de Sena*, by visualizing their distribution within the town according to their typology and by investigating households’ locational choices through the analysis of the interviews. Furthermore, the spatial distribution of the households was analyzed also according to other variables.

This spatial analysis was a useful instrument with which to reach a greater comprehension of the rural town’s settlement pattern, of the impacts of emerging lifestyles on the physical structure of the town and to understanding parameters of urbanization at household level. The results of this analysis will be deepened in Sections 6.2 and 7.2.

4.4 SWOT analysis of the rur-urbanization process

The data and information recollected through the above mentioned research process was greatly varied. A large amount of quantitative and qualitative data came from the analysis of official documents, direct observation, interviews with relevant institutional and non-institutional actors, and from the household survey in Sena. Furthermore, in accordance to the multiscale and holistic approach of the analytical framework (as discussed in Section 4.1), this data was related to different levels of analysis (macro-institutional, regional, urban and household levels) and to different aspects (socio-economic, environmental, institutional and physical settlement). To manage such complex material and to assess the urbanization process of Caia and Sena by considering all different information at the same time, a SWOT Analysis³⁰ was used as a tool.

SWOT Analysis is commonly used in any kind of spatial analysis and for the assessment of spatial policies, programs and plans. All EU regulations, for example, require the mandatory adoption of the SWOT analysis for the assessment of spatial programs. This technique is also commonly adopted in urban planning practices, and is used in particular as a tool for the participatory and strategic preparation of a general planning scheme. SWOT analyses surrounding the procedural or master-planning approach have been widely analyzed in existing literature (see Choguill, 1999; Halla and Majani, 1999; Healey, 1994; Armstrong,

³⁰ SWOT Analysis is an abbreviation for strengths, weaknesses, opportunities, and threats.

1987; Tugwell, 1974). In the Sub-Saharan African context, a SWOT analysis has been applied to the strategic urban development-planning framework (SUDPF) as practiced in the case of Dar-es-Salaam City in Tanzania (Halla, 2007).

In the specific case of this research, a SWOT analysis was applied to assess main strengths, weaknesses, opportunities and threats associated to the rur-urbanization process taking place in Caia and Sena. According to the most common practice, as “strengths and weaknesses” have been intended as inherent characteristics of the settlement pattern of the small towns. On the contrary, “opportunities and threats” have an external origin, since they depend on regional, national and international policies, as well as various kinds of global processes such as the improvement of transport and communication infrastructures, liberalization of international trade, climate change, and so on. Therefore, acting locally can modify “strengths and weaknesses” and the choices of local authorities and communities can have direct impacts on these features of the rural towns. “Opportunities and threats”, on the other hand, come from the macro-institutional context and, therefore, cannot be modified at the local level, or at least not in any significant way.

The aim of the analysis was to define the advantages and the disadvantages of the rural town, understood as a particular settlement pattern, and how the planning activity can help in valorizing the strengths and in reducing the weaknesses of rur-urbanization. This is done while also considering the risks and opportunities coming from the external context.

All elements of the SWOT analysis have been introduced within a matrix organized in four sections, each identifying major strengths, weaknesses, opportunities and threats of the rur-urbanization process of Caia and Sena.

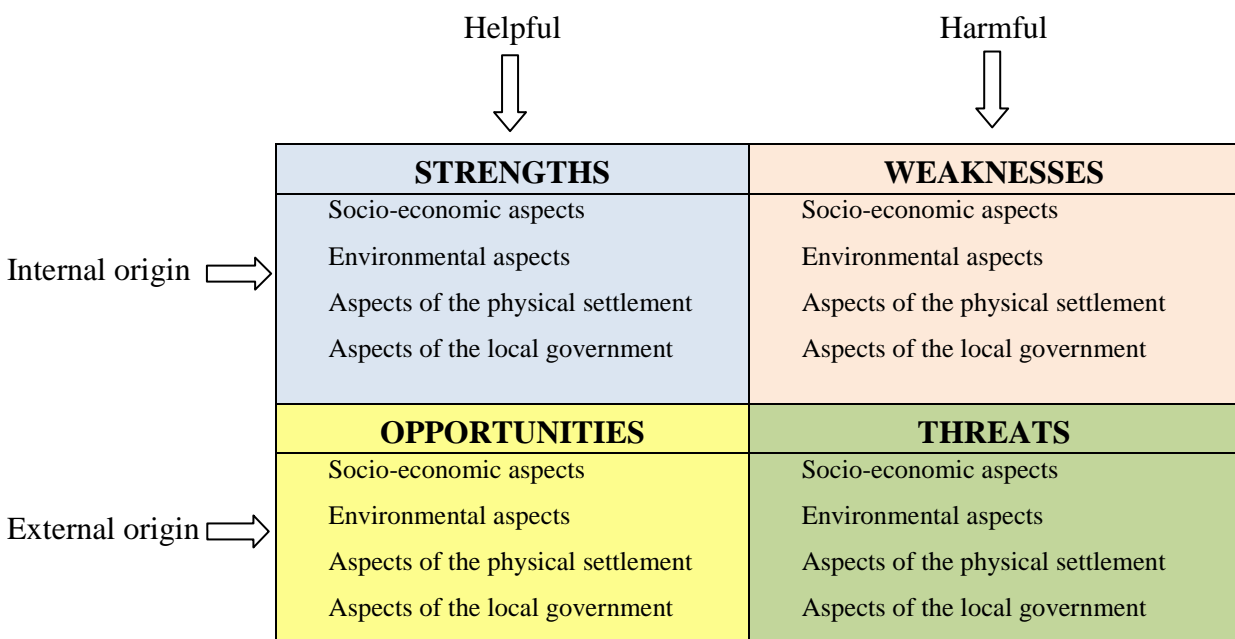


Figure 4.6 Scheme of the SWOT analysis

This matrix offers a synthetic, complex and rationally structured assessment of the rural towns and of the transformations that involve them. Furthermore, always in the perspective of a holistic approach, each section of the matrix has been analyzed to consider multiple aspects simultaneously. Socio-economic characteristics of the rural towns have been assessed together with those related to environment, physical settlement, and local government and governance. Through the SWOT analysis it was possible to identify the main features (key topics) that describe the particular nature of the analyzed rural towns, to understand the major trends that are transforming the socio-economic and physical structure of the town, and to understand the patterns of use of natural resources and local decision-making processes. Particular attention has been paid to those negative trends (risks) related to the rur-urbanization process that pose a threat to the sustainable growth of the rural towns. The results of the SWOT analysis are described in Sections 7.2 and 8.1.

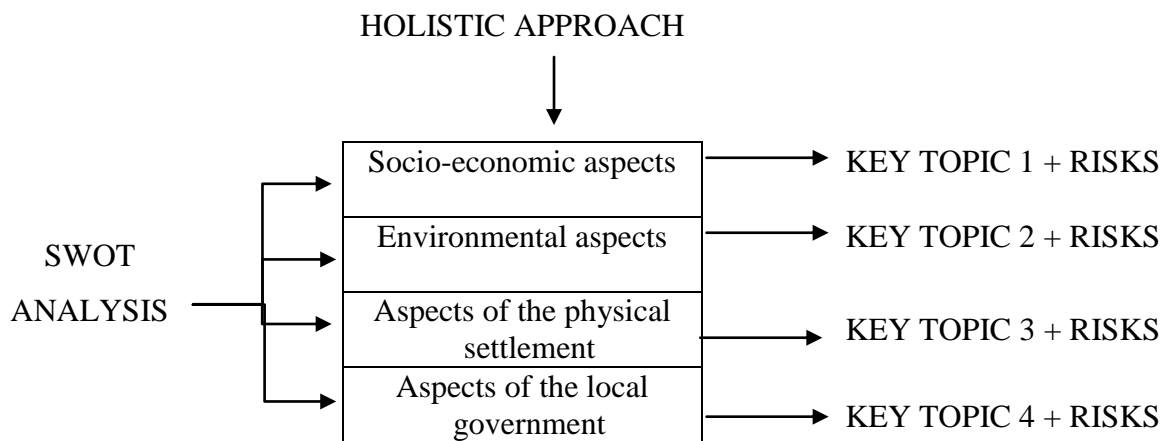


Figure 4.7 Scheme of the methodology used to obtain “key topics” and “risks” from the SWOT analysis.

Chapter 5

Small towns of the district of Caia within their macro-institutional and regional contexts

5.1 The emerging role of small towns in Mozambique

Urbanization of poverty, administrative decentralization, modernization of transport and communication infrastructures, and the growth of non-hierarchic reticular urban systems and trade flows are all processes that, as described in Section 2.3, need to be considered when analysing the urbanization process of Sub-Saharan Africa rural areas. These processes are clearly visible and topical also in Mozambique, as it will be discussed in the following notes. The small towns of the Caia district, then, are analysed first of all in relation to these trends that are taking place at the macro-institutional level, both nationally and internationally, and that are producing relevant impacts also at the local scale.

5.1.1 The rapid population growth of small and intermediate urban centres

The long civil war produced impressive migratory waves both within Mozambique and out towards neighbouring countries. That resettlement phase seem to be concluded, and the Mozambique urban system is now assuming some clear features that are possible to analyse through the data provided by the 2007 National Census.

The structure of the national urban system presents three major cities (Maputo in the south, Beira in the middle, and Nampula in the north of the country), whose importance is balanced by the emergence of a considerable number of intermediate towns. In the last decade, in fact, the demographic slowdown of the major towns and the sustained growth of the medium-sized towns has been registered in Mozambique. Furthermore, observing demographic dynamics at province level, it can be seen that even the administrative units of the smaller urban centres are showing a significant increase in population. This increase is similar to that registered for intermediate urban centres. Anyway, the urbanization process in Mozambique has complex causes and heterogeneous characteristics, which presumably vary in relation to regional contexts. In the following notes, attention will be focused in particular on the district of Caia, situated in the Sofala province, that is the administrative zone of Caia and Sena.



Figure 5.1. Map of Mozambique



Figure 5.2. Map of the provinces of Mozambique, with the localization of Caia district.

- The population growth of major cities

From the 2007 Census data provided by the National Institute of Statistics, it appears that the major cities—those with a population of more than 250,000 people—show a low increase in population, with Nampula¹ as the only exception. This phenomenon seems to be more evident in the case of Beira, whose population growth does not reach 11%. Considering the estimated natural growth rate that in towns is around 1.5%, it can be assumed that the capital of the Sofala province is undergoing an outward flow of population. Dondo, the satellite town of Beira where most industrial activities of the Province have been localized in the last ten years, also confirms this condition of immobility. And when the Maputo-Matola conurbation—they must be considered one large city even though they have two separate administrative centres—is taken into account, the increase in population during the last

¹ The case of Nampula represents an exception, since this town shows an increase in population of 59% between 1997 and 2007. It must be underlined that Nampula is now the largest town in the north of the country—not by chance it is called the *Capital do Norte*—and that it is also an important economic pole in the centre of a vast agricultural region. The town is characterized in other terms as the third great urban pole of the country, second in size only to the Maputo-Matola conurbation and having surpassed Beira in population in the examined decade.

decade is almost 27%. If the natural growth rate is considered, it appears that more than half of this growth is due to differences between births and deaths, which brings the number of people migrating to the capital during the examined time period² to about 150,000.

Municipality	Population 1997	Population 2007	Variation 1997-2007³ (%)
Cidade de Maputo	966,837	1,120,360	15.88
Cidade de Matola	424,662	687,150	61.81
Cidade de Nampula	303,346	482,425	59.03
Cidade da Beira	397,368	441,048	10.99
Total	2,092,213	2,730,983	30.53
Cidade de Chimoio	171,056	241,790	41.35
Cidade de Nacala-Porto	158,248	209,498	32.39
Cidade de Quelimane	150,116	198,792	32.43
Cidade de Mocuba	124,650	168,736	35.37
Cidade de Tete	101,984	159,277	56.18
Cidade de Gurue	99,335	145,466	46.44
Cidade de Lichinga	85,758	144,312	68.28
Cidade de Pemba	84,897	142,260	67.57
Cidade de Xai Xai	99,442	118,894	19.56
Cidade da Maxixe	93,985	111,861	19.02
Total	1,169,471	1,640,886	40.31

Table 5.1 Population of major and medium-sized towns of Mozambique. 1997 and 2007 National Census Data from INE-*Instituto Nacional de Estatística*, Mozambique.

- The population growth of medium-sized towns

Medium-sized towns, those with population that ranges from 100,000 to 250,000 people, show a increase in the population growth over the past decade of around 40%. This is a

² The differing performances of the two centres let one suppose that the phenomenon of peri-urbanization is taking place, with a displacement of the population from Maputo (the capital city) to Matola (the satellite town).

³ The percentage of the variation of the population between 1997 and 2007 has been calculated according to the following formula: $(\text{Pop}2007 - \text{Pop}1997 / \text{Pop}1997) * 100$

significant value, even if, also in this case, there are varying speeds of growth⁴. It shows that the population growth surpasses the natural growth rate by a considerable amount, almost triple, and indicates the capacity the medium-sized towns have of attracting people. The administrative functions of these urban centres certainly contributes to their growing demographic weight: more than half of the 10 towns of this class are, in fact, provincial capitals⁵. However, most of these towns, besides playing an administrative role, are also important economic centres⁶.

- Looking at educational data

The structure of Mozambique urban system presented in the preceding paragraphs is also confirmed by the data provided by the Ministry of Education and Culture regarding the enrolment of students in primary school over the same period of the two censuses, 1997 and 2007. This data shows the emergence of a system of medium-sized towns that balances the presence of three major urban centres.

The growth rates of school enrolment occurring in the intermediate towns (the average of the variation between 1997 and 2001 is 84,3%) are much higher than those of the larger towns (34,6%). Furthermore, while in major cities it is possible to notice that the increase in population is very similar to that of the enrolment in the primary school, in medium-sized towns, the variation of the primary school attendance significantly exceeds the increase in population (with the only exceptions, again, being Xai Xai and Maxixe). This phenomenon can be explained with the large migratory flow—and related increase in births—and with the improvement of educational facilities. Moreover, in both 1997 and 2007, the percentage of population enrolled in primary school over the total population is higher in intermediate towns than in larger ones. Probably, this is due to more efficient recruitment or to a better functioning of the administrative mechanisms in the medium-sized towns. In any case, it seems that intermediate towns are characterized by an increase not only quantitative—that is,

⁴ Xai Xai and Maxixe—two towns located on the coast northern of Maputo—deserve consideration because they show only a modest increase in population. This is probably due to the low economic weight of the two centres, associated with the proximity of the capital city and therefore to the force of attraction exerted by it. Furthermore, Xai Xai has probably suffered a population decrease as a result of the frequent floods of the Limpopo River, which devastated vast areas of the Gaza Province.

⁵ Lichinga is the capital of the provinces of Niassa; Pemba of the province of Cabo Delgado; Tete of the province of Tete; and Chimoio of the province of Manica. They all show increases from 41% and 68%. Xai Xai is the capital of the Gaza province and has, as seen, a much lower growth rate.

⁶ Tete dominates the central western part of the country and is also the largest town located along the Zambezi River. Moreover, it is the terminal of the railway line, that connects Beira to the coal mines of Moatize and that is currently being rehabilitated. Pemba is perhaps the most important tourist centre of Mozambique being, as well as the destination of the international flow attracted by the seaside, the starting point for excursions throughout the north of the country. Gurue and Macuba, both located in the Zambezia Province, are important trade centres for their surrounding agricultural regions. Nacala is the seaport of the “Nacala Development Corridor” that connects Malawi to the sea. This town has a high economic potential as a node of trade flows since it is seated on a bay that is considered the deepest natural port of East Africa.

in population—but also qualitative, related to the strengthening of urban features. Data related to the scholastic enrolment, in fact, reflects not only an increase in population, but also the presence of educational facilities and the tendency of parents to send their children to school. For these reasons, scholastic enrolment can be considered as an indicator of urbanity.

Municipality	Students 1997	Students 2007	Variation 1997-2007 (%)
Cidade de Maputo	151,419	167,241	10
Cidade da Matola	76,014	115,484	51
Cidade de Nampula	40,571	79,204	95
Cidade da Beira	46,887	61,968	32
Total	314,891	423,897	34.6
Cidade de Chimoio	21,113	43,411	105
Cidade de Nacala Porto	13,651	24,977	82
Cidade de Quelimane	23,943	34,972	46
Cidade de Mocuba	34,478	77,213	123
Cidade de Tete	15,779	27,209	72
Cidade de Gurue	27,287	69,867	156
Cidade de Lichinga	11,973	25,883	161
Cidade de Pemba	11,015	23,963	117
Cidade de Xai-Xai	22,931	22,256	0
Cidade da Maxixe	18,565	20,245	9
Total	200,735	369,996	84.3

Table 5.2. Number of students attending the primary school in major and medium-sized towns of Mozambique. Data from the Ministry of Education, Mozambique.

- The urban growth in the Sofala province

The analysis of the Mozambique urban system is limited to larger and medium-sized towns because census data of 2007 regarding the other towns—those with a population of less than 100,000 inhabitants—is currently difficult to compare with the data of the previous census⁷.

⁷ This problem is particularly evident in the new municipalities, *autarquias*, as a consequence of the definition of new administrative boundaries. Moreover, it can be affirmed that the closer you get to small centres, the more problems with the delimitation of their areas arise and, therefore, with the quantification of the number of inhabitants. Administrative boundaries, in fact, often include both urban and extended rural areas.

Census data of 2007 made available for the Sofala province by the Beira local office of the Statistic National Institute allows a deepening of the considerations carried out up to this point. This data, in fact, confirms the above-mentioned trend. What emerges is the—previously described—low increase in population of the two major urban centres (i.e. Beira and Dondo), while the rate of increase of the population is up to six times higher for the rural and urban-rural *postos administrativos* (administrative units) in comparison to that of the province capital. Moreover, the *postos administrativos* of small urban centres of the Sofala province (Nhamatanda, Caia, Buzi and Inhaminga) show an increase in population that is similar to that registered in the last ten years for the intermediate towns of the country. This specific aspect will be explored further in Section 5.2.1, where demographic dynamics within the rural *postos administrativos* will be analysed, trying to separate the behaviour of the *vilas* from that of the rural settlements.

With reference to the new classification introduced by the public sector reform that is described in the next Section, as “urban” *postos administrativos*, are meant those who gained the status of *autarquia*, that is an administrative centre provided with political and financial autonomy. As “urban-rural” *postos administrativos* are meant those who gained the status of *autarquia* and, at the same time, present also a large peri-urban area with rural characteristics within the administrative boundaries. Finally, as “rural” *postos administrativos*, are intended rural areas that also have an urban centre within their boundaries (*vilas rurais*), but whose population does not elect the local administration. Nevertheless, both “urban-rural” and “rural” *postos administrativos* are interesting to our discussion because they all contain urban centres.

Posto Administrativo	Population 2007	Population 1997	Variation 1997-2007 (%)	Area
Cidade da Beira	441,048	397,368	10.99	Urban
Cidade do Dondo	70,817	61,405	15.33	Urban
Vila de Marromeu	76,849	49,098	56.52	Urban-Rural
Vila de Gorongosa	60,399	40,177	50.33	Urban-Rural
Vila de Nhamatanda	142,087	83,641	69.88	Rural
Vila de Caia	54,926	39,153	40.29	Rural
Vila de Buzi	30,130	21,960	37.20	Rural
Vila de Inhaminga	27,801	20,795	33.69	Rural

Table 5.3. Population of the *Postos Administrativos* of the Sofala province. 1997 and 2007 National Census Data from INE—*Instituto Nacional de Estatística*, Mozambique.

5.1.2 Public sector reform

The highly-centralized State that was established after the war of independence created only 11 provincial governments, including that of Maputo, as decentralized administrations. In the last fifteen years, a process of administrative decentralization has taken place in Mozambique and the central State is progressively devolving powers to municipalities (*autarquias*) and districts.

It would be arbitrary to claim a correlation between administrative decentralization and the rapid demographic growth of small and intermediate towns. Nevertheless, it can be stressed that the emerging role of local authorities allowed most small urban centres to be provided with significant urban features, thus reinforcing their attractiveness, as previously observed in regards to the increasing primary school attendance of the inhabitants.

- The *autarquias*

The process of administrative decentralization started in the mid-1990s with the approval of several laws that gave the *autarquias* (municipalities) extensive administrative and financial autonomy. In particular, with the *Law 2/97—Lei de Bases das Autarquias*, the Municipalities became territorial units, with their own representative bodies elected directly by the population, and an executive organ responsible of a wide range of urban issues, such as economic and social development, environment, quality of life, spatial planning and urban management. In relation to the latter issues, specific responsibilities include public transport and road maintenance, distribution of electricity, sewerage and rubbish disposal, markets, preschool and primary school education, and low-cost housing.

In 1998, municipal elections were held in 33 urban centres that had gained the status of *autarquia*: 10 *ciudades capitais* (provincial capitals), 13 *ciudades* (intermediate towns), and 10 *vilas rurales* (small towns, rural district's capitals). Nevertheless, 118 *vilas*, including most district capitals, were excluded from these elections. Recently, the status of *autarquia* has been granted to 10 additional *vilas*, that is one district capital for each province (excluding the Maputo province, which dovetails the city's boundaries).

As a result of the public administration reform, there has been a reclassification of the national territory: the 43 *autarquias* are defined as “urban” areas, while the rest of the territory is considered “rural”⁸. The distinction between urban and rural, as previously mentioned, is not always precise. Moreover, the choice of promoting an urban centre to the rank of *autarquia* often depends more on political evaluations and equilibriums than on considerations related to statistical or geographical criteria. In other words, the attribution of

⁸This classification overlaps the other administrative division of the national territory into 128 *distritos*. Districts include the *autarquias*, which can be also district capitals. In addition, the country is further divided into 394 *postos administrativos* and 1,071 *localidades*.

the status of *autarquia* does not necessary depend on the dimension, the urban equipment or on the functions of that particular urban centre. Finally, a close look at the new *autarquias* shows no substantial differences between them and other *vilas* nearby. In the case of the Sofala province, for example, the only localities considered urban, and therefore provided with the status of *autarquias*, are the towns of Beira, Dondo, Marromeu and Gorongosa. None of the small urban centres of the Caia district have gained the rank of *autarquia*. On the contrary, they are classified as *vilas rurales* and belong to the part of the national territory considered “rural”. But no relevant differences are to be noticed between Caia and Gorongosa, in terms of their urban characters. In the following notes, Caia (the district seat), Sena and Murraça (*posto administrativo* seats), are considered in the same way as small urban centres because they perform functions that are characteristic of small towns.

The creation of new autonomous municipalities is an important signal of a gradual acknowledgement of equal rights for the other small towns in the country. In fact, the long-term project of the public sector reform—to which the international community has renewed its financial support—is to gradually extend the status of *autarquia* to all administrative centres, and therefore allow the election of administrators through universal suffrage for the whole population of Mozambique.

- The Districts

In 2003 the decentralization of power out to the local level made a further and significant step through the Law 8/2003, also known as “*LOLE—Lei dos Orgaos Locais do Estado*”, the regulations of which was approved in 2005. This law increases the autonomy of the provinces and promotes districts as effective administrative units.

Districts are recognized as the most important administrative units in some strategic sectors, such as in the programming of economic and social activities, coordinating the activities by national and international institutions on the local territory, promoting regional development and poverty-reduction policies, establishing land use and land allocations, urban planning and management. These decisions are implemented through the direct allocation of financial resources and through plans and programs established by the law. Local governments have been provided with more technicians and employees with specific sectoral competencies who should be able to address the more complex tasks they have been assigned.

In contrast to the *autarquias*, the District Administrator and his or her political staff is not elected directly by the population but is instead nominated by the central government. However, a complex system of public participation does exist that mitigates, in part, the distance between district authorities and the local societies, as will be explained in Section 5.2.3. Within this new framework, small district capitals are placed in an entirely new situation in which decisions that are important not only for the economy but also for the living conditions of the population are assumed *in loco*.

The institution of a fund named “Sete Milhões de Meticais” represents a concrete action implemented by the central government in order to test and promote the administrative autonomy of District governments. This fund was instituted in July 2006 and assigned a relatively large sum of money (almost 185,000 Euros) to the rural districts.



Figure 5.3. Map of the first 37 Municipalities of Mozambique in 1997.



Figure 5.4. Map of the 128 Districts of Mozambique.

This money was made immediately available to the local governments for the realization of priority development actions. In spite of many problems and polemics that emerged about the allocation of the financial resources, the “Sete Milhões de Meticais” represented an important opportunity for revitalizing the political and economic life of the districts, as well as for the participation of local communities⁹.

5.1.3 Modernization of transport infrastructures and “megaprojects”

If it is true that, as mentioned in the previous section, district administrations are responsible for defining local development plans and programs, it must also be stressed that these are strongly influenced by the poverty reduction plans and other socio-economic policies

⁹ With respect to this issue, see: Rosário C., Tvedten I., Paulo M. (2008), “MucupukiRelações Sociais da Pobreza Rural-Urbana no Centro de Moçambique”, CMI—Chr. Michelsen Institute, Bergen, Norway.

established by the Mozambique Government. In the last years, two main national plans were the *Plano Quinquenal do Governo 2005-2009* and PARPA II—*Plano de Acção para a Redução da Pobreza Absoluta 2006-2009*.

The declared principal objective of these plans is the diffusion of development on the whole national territory and the overcoming of regional “asymmetries”. In spite of a good economic performance between 1995 and 2005¹⁰, thanks in part to the support of the international donors who have financed more than 50% of the national budget, in fact, disparities in Mozambique have considerably increased in this period. According to the “poverty assessment” contained in the PARPA II, the absolute poverty rate is higher in rural areas than in urban ones. Differences among the provinces were also very pronounced, with the “poverty headcount index” ranging from 48% in the capital city, Maputo, to 88% in the Sofala province. Regional disparities have often caused political tensions, since there is a general belief that the benefits of economic growth have been concentrated only in the south of the country, and in particular in the capital city.

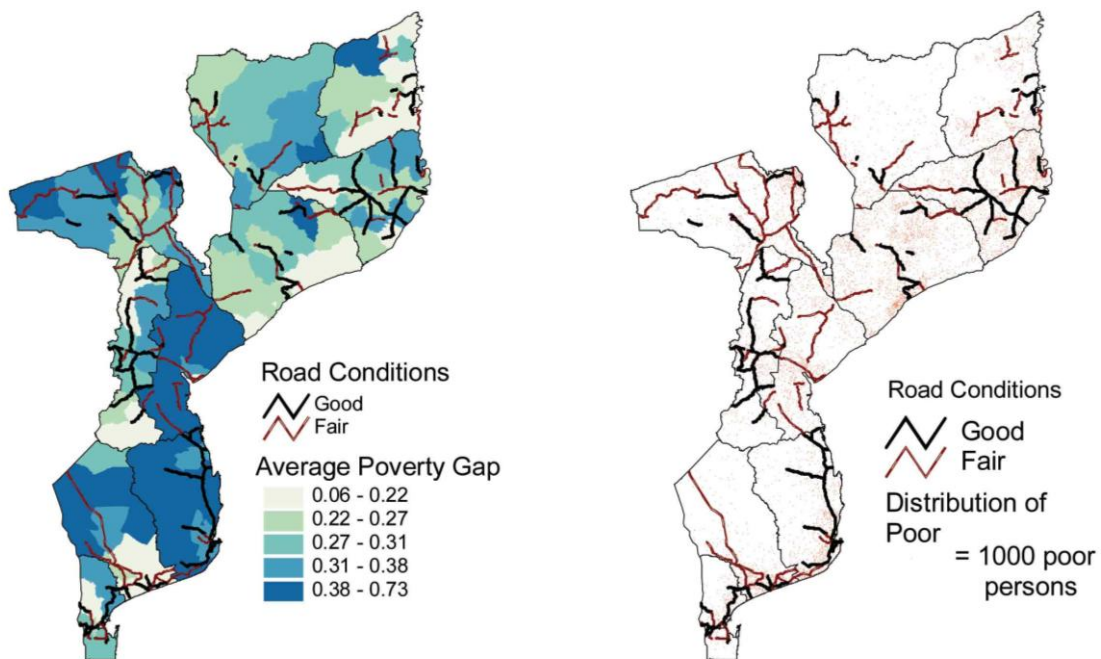


Figure 5.3. Condition of road network, average poverty gap and distribution of the poor in Mozambique¹¹

¹⁰The real annual growth of the GDP has been estimated at 8% in this period (6% per person). This allowed a reduction of the proportion of the population living in absolute poverty from 69% in 1996/97 to 54% in 2002/03. This is a significant reduction: 15.3% in only six years.

¹¹These figures come from: Simler K. R. and V. Nhate (2005), *Poverty, Inequality, and Geographic Targeting: Evidence from Small-Area Estimates in Mozambique*. FCND Discussion Paper 192, International Food Policy

Recent declarations by some representatives of the central government affirm that reducing regional disparities is a priority and an explicit objective of the government's strategy to reduce poverty¹².

According to Mozambique Government, the overcoming of the "regional asymmetries" is to be reached through two priority actions: rural development and improvement of the infrastructures on the whole national territory. Both these actions are supposed to have important repercussions for the role of small urban centres situated in rural Districts.

Some studies underlined that there is a positive correlation between the highest concentration of poverty in Mozambique and the lack of transport infrastructures (Simler et al., 2005). The modernization and reinforcement of the infrastructures that were heavily damaged during the civil war, and in particular the road network, is considered a priority action for two reasons. First of all, it could guarantee rural areas the access to markets and basic social services. Moreover, by improving the intermodal connectivity of the production sectors (for example, through railways or fluvial, maritime and air transportation means), the private sector could be supported as well as the regional economic integration. As "region" it is to be intended Sub-Saharan African countries that take part in the "SADC—Southern African Development Community". The protocol on "Transport, Communications and Meteorology", signed by the SADC countries in 1996, offers the basis of an integrated transport system within the region. In Mozambique, in particular, three infrastructural corridors were planned that would connect the hinterland countries, rich in natural resources but without access to the sea, with the seaports of Maputo, Beira and Nacala. "Megaprojects" related to these corridors have roused the interest of and obtained founding from different international donors, among them the World Bank and the South African government, which is certainly the most influential country among those belonging to the SADC. The minor interest towards the "local development" of the rural areas is testified to, instead, by the troubled progress of the construction of roads and other infrastructures that could connect the rural hinterland with the small urban centres of reference, potential markets of local agricultural production. This happens in spite of the economic analysis included in governmental plans that clearly demonstrate that the traditional economic sectors (such as agriculture and fishing) are the major contributors to the national GDP growth and to poverty reduction while megaprojects had very little impact on occupation and on the tax base. Moreover, the same government documents recognize the need for improving the business environment of the rural areas by increasing investments in road infrastructures and other services supporting the agricultural

Research Institute.

¹² In the PARPA I it is affirmed that: "The most noticeable characteristic of Mozambique's territory is the economic and social inequality between the Maputo-Matola conurbation area and the rest of the country. (...) Dealing with regional disparities is one of the priority objectives of the Government's Programme for 2001–2004" (Government of Mozambique 2001, p. 35).

production. Mozambique, in fact, is a predominantly rural country and agriculture still represents the primary subsistence and income source for the majority of the population. The impact of development in the agricultural sector on poverty reduction is, therefore, very high¹³. At the moment, the agricultural sector is prevalently composed of small holders and is directed to subsistence. Governmental plans aim to increase the productivity and the diversification of agricultural production, orienting it to commerce. The idea is that the development of the agricultural (including the production of biofuel) and agro-processing sectors will strengthen the role of Mozambique on international markets (Republic of Mozambique, 2001; Republic of Mozambique and European Union, 2007).

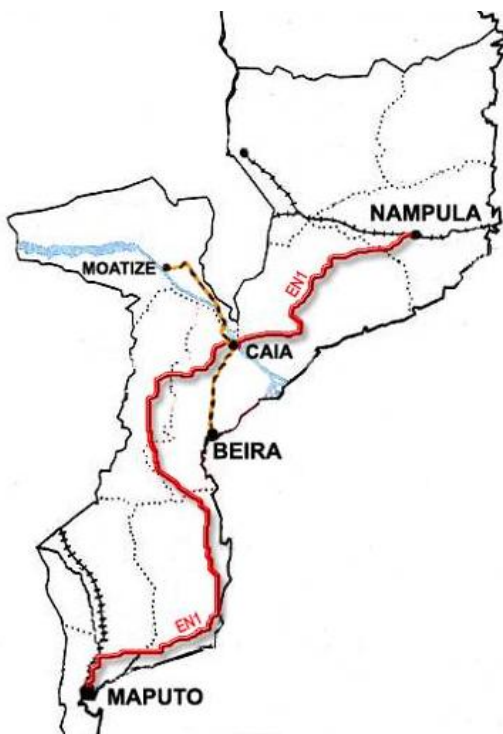


Figure 5.4. Localization of *vila de Caia* in relation to main national infrastructural projects.

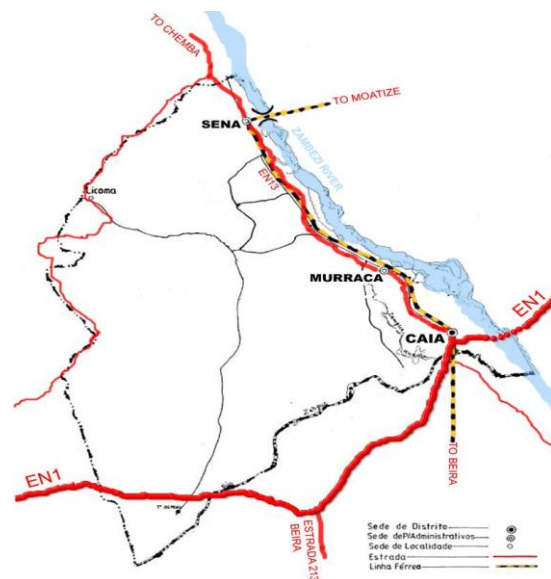


Figure 5.5. Main infrastructural projects in the Caia district.

Vila de Caia is situated at almost 500 km from Beira, the capital city of the Sofala province, and only 300km away from Blantyre, in Malawi. *Vila de Sena* is only 60km away from Caia, following the riverbank of the Zambesi towards the north. Within the framework of the

¹³ “The impact of agricultural development on direct poverty reduction is among the highest. Despite the fact that the average growth rate in agriculture was lower than in other sectors, agriculture was one of the largest contributors to the GDP (23% on average) during the period 2000-2004. This means that a limited increase in agricultural production has a huge effect on increasing the GDP and, thus, on reducing poverty (without even considering the potential impact on the agro-processing sector)” (Republic of Mozambique and European Union, 2007, p.34).

above-presented national projects, the small towns of the Caia district are placed in a particularly favorable geographic position because they are seated exactly at the crossroad between the “Beira Corridor” and the national road EN1. This is the only road that connects the whole country, from the north to the south. Not by chance is it called the “national unity” road. Furthermore, as a consequence of the implementation of the “Zambezi Spatial Development Initiative”, an integrated planning tool promoted by South Africa in agreement with neighboring countries (Soderbaum, 2004), different megaprojects are being realized close to the small towns of the Caia district. First of all, the only bridge for car traffic in Mozambique that spans the Zambezi River, the Guebuza bridge, was inaugurated in 2009 in correspondence to *vila de Caia*, while in *vila de Sena* the Dona Ana bridge is being rehabilitated and will soon allow the railway crossing of the river. Moreover, the entire Sena Railway Line is being restored. This project links the coal mines of Moatize with the seaport of Beira and passes through the small towns of the district. Finally, electrical grids have been installed, which are seen by the inhabitants of Caia and Sena as the most tangible sign of change.

The small towns of the Caia district, then, in spite of their small dimensions, can be considered important nodes of the national urban network. They are already in the middle of national and international trade flows, which will increase at the end of the rehabilitation works of the railway line and road connections along the Beira Corridor. But while the links between the small towns of the Caia district and the national infrastructure system have improved remarkably in recent years, the local road network that connects the rural hinterland with Caia and Sena is, instead, in very bad condition. It is even not usable during the rainy season, so that rural-urban linkages are almost completely suspended for part of the year.

5.2 Changing settlement patterns in the Caia district

As a consequence of the above mentioned processes taking place at the macro-institutional level, the Caia district is experiencing significant changes. In addition, relevant transformations are also taking place at the regional level and are determining a spatial redistribution of the population on the district territory. In particular, the small towns are undergoing a very rapid urbanization process, the causes and characteristics of which will be analysed in the following sections. All these transformations charge the local administration with new tasks.

5.2.1 The displacement of rural population towards small towns

The Caia district has, over the course of the last 10 years, experienced a radical spatial redistribution of population. The dispersed settlement pattern of the peasant families,

characterized along centuries the territory settled by the *sena*, a population migrated from Zimbabwe. These people were organized in large polygamous households that traditionally lived in housing compounds situated at a great distance from one another. This settlement pattern is functional for subsistence agriculture on a household basis, which for centuries has been the principal economic activity of the population settled along the Zambezi River. The extended land consumption determined by this settlement pattern is made possible by the low population density, which is also accompanied in the region by the wide endowment of arable land.

Nowadays, this traditionally dispersed population has undergoing a rapid urbanization process that is concentrating people in the small towns. In 1997, the population of the Caia district was estimated around 86,001 inhabitants, with a population density of 24 hab/km². The population was unequally distributed, with a higher concentration along the flood plain of the Zambezi River, and a more dispersed and isolated population in the hinterlands. Today, not only has the population increased to 115,729, but the distribution of people throughout the territory has also changed. The following table presents a comparison between the 1997 and 2007 Census data for the Caia district. Taking as an example the demographic dynamic of the *posto administrativo* of Caia, the only one to which disaggregated data of the *localidades* in both censuses are referred, it is possible to notice that the increase of the population in the last ten years has been very high for the urban centre (*Caia-sede*): it has almost doubled its total population. The rural area, on the contrary, has lost inhabitants. In general, it is possible to observe a massive process of displacement of population from rural areas to the small urban centres of the district.

Posto Administrativo	Localidad	Population 2007	Population 1997	Variation 1997-2007 (%)	Area
CAIA	Caia-sede	18,572	10,473	77	<i>vila rural</i>
CAIA	Caia	28,197	28,680	-2	rural
CAIA	Ndoro	8,557	-	-	rural
MURRAÇA	Murraça	24,375	18,135	34	<i>vila rural/rural</i>
SENA	Sena	37,136	28,713	29	<i>vila rural/rural</i>
SENA	Licoma	2,949	-	-	rural
District Total		119,786	86,001	39	

Table 5.4. Population of *Postos Administrativos* and *Localidades* of the Caia district. 1997 and 2007 National Census Data from INE-*Instituto Nacional de Estatística*, Mozambique.

The principal settlements of the Caia district are situated along the Zambezi River and the regional road 213, which facilitates the mobility of persons and goods. Along this road are to be found Caia, Murraça and Sena, the three seats of *posto administrativo*, where basic services for the population and the principal markets for agricultural produce are located.

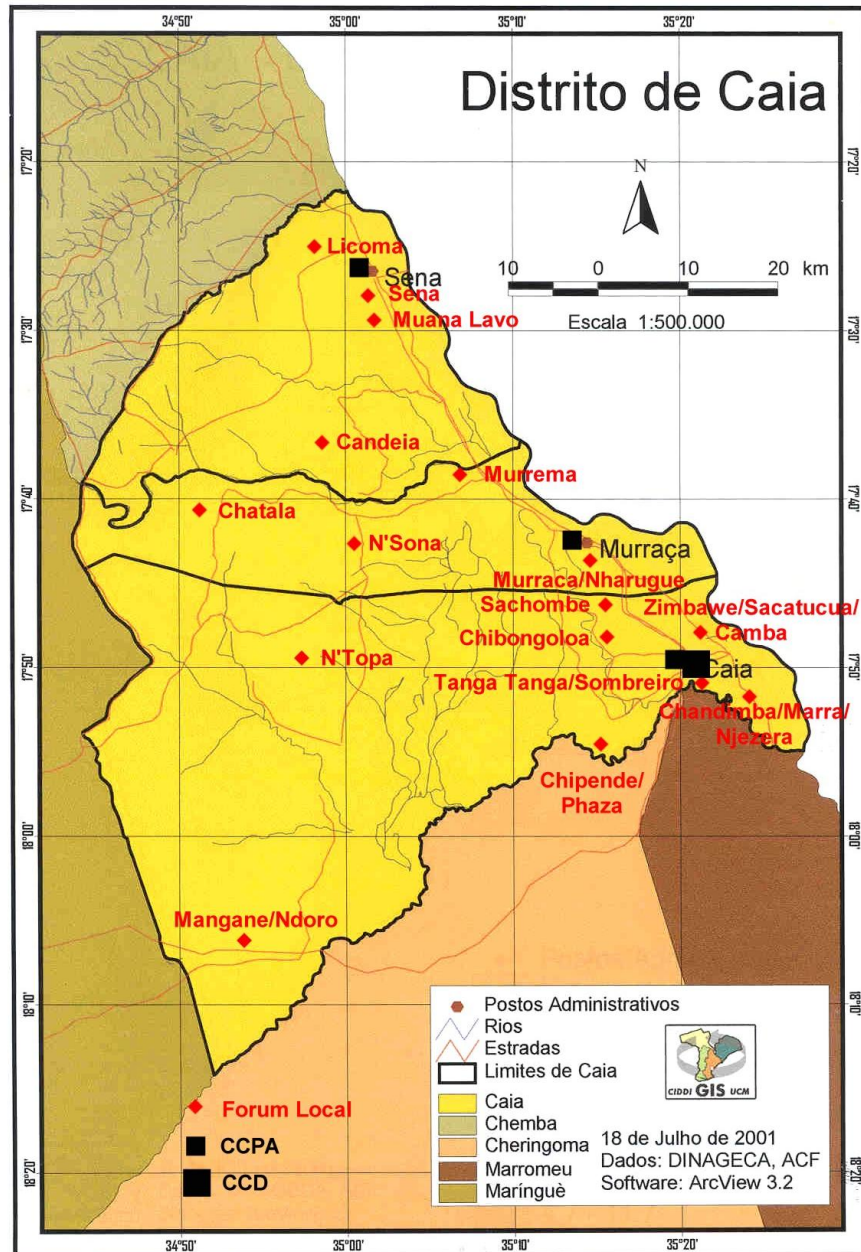


Figure 5.6. Principal settlements of the Caia district (from: PEDD)

Vila de Caia is a landmark for the entire district, being its administrative seat and the place where most public services are concentrated. Sena, a small town that is rapidly expanding, has long since been provided with permanent electric energy, and is mainly an important

commercial centre at the regional level. The presence of Dona Ana Bridge, in fact, facilitates connections to Mutarara (a few kilometres away in the Province of Tete) and the nearby country of Malawi. Finally, Murraça is situated in a central position, equidistant from the other two *vilas*, and offers important attractions such as the old cotton factory and the mission *Nossa Senhora de Fátima*, one of the major educational centres of the whole of Mozambique. Most of the inhabitants of the hinterland use the *posto administrativo* of Murraça to attend to administrative practices because other public administration seats in that area do not exist.

Furthermore, an axis can be found in the hinterland that presents a medium population density: it is that one corresponding to the road in direction of Chatala and N'topa, which passes through the centres of Randinho and N'sona. In the hinterland, the *aldeias* have small dimensions and follow a dispersed settlement pattern in which the households, situated at a certain distance between them, tend to locate along the waterways. The word *aldeias* refers to those villages that are provided with some basic services for the population (such as primary schools, sanitary centres and water pumps). In recent years, an improvement of basic services was started in the hinterland of the district with the aim of limiting the population flow towards the Zambezi corridor. Even if the nearest centre equipped with services is hung out, the population maintains its houses in an isolated position in order to have direct access to their own *machamba* (family farm) and to graze animals. Moreover, seasonal commuting of families within the region is still very common, especially for those families who base their subsistence on agriculture. However, the permanent displacement toward the *vilas* is a recent and still-ongoing phenomenon.

5.2.2 Current factors of growth of the small urban towns

The displacement of the population from rural areas to the *vilas rurales* of the Caia district seems to depend more on the persisting crises (political and environmental) in the surrounding rural areas than on the development of the urban economy. In other words, we are observing a phenomenon of the “urbanization of poverty”. But it needs to be underlined that the small urban centres of the Caia district are proving that they are able to “retain” population. Such *vilas rurales* are not a temporary destination and they do not represent a diving board for a new displacement of families towards major cities. On the contrary, these small towns are in a position to offer some advantages to the urbanized population. Advantages that offset, somehow, the discomforts caused by the resettlement, as well as the distance from and the lower quality of agricultural land. The following, is an analysis of the main forces driving the urbanization process that is taking place in Caia and Sena.

- Push factors

Historically, the civil war was the exogenous factor that has encouraged the transfer of the population from rural areas to urban centres. Dispersed rural settlements were vulnerable to

robberies and attacks by the opposed troops, so the population concentrated in the small towns that were considered more controlled and safe. Most of the inhabitants of the Caia district, however, moved to the refugee camps in nearby Malawi during the civil war. Starting in 1994, they returned to the district, where temporary camps were organized to receive the refugees. Most of these were in *Vila de Sena*, which is nearer to Malawi's border. These camps soon became permanent settlements.

In the last ten years, however, the major factor in the increase in population of the small towns of the Caia district is the resettlement of the rural population, traditionally settled along the Zambezi Valley, because of frequent floods. Settling along the fourth-longest river of Africa has always been advantageous to the local population, thanks to the fertility of the soil, the possibility of hunting and fishing, and the easy access to water provisions and river commerce. The floodplain, however, is also a vulnerable area and, for some decades now, people that cultivate the *machambas* near the river live permanently in conditions of risk. One of the reasons is the management of the Cahora Bassa Dam, which is situated in the province of Tete, north of the Sofala province. The dam was built at the beginning of the 1970s by the government of Mozambique, a Portuguese colony at the time, in cooperation with European and South African enterprises. Besides the production of hydroelectric power, the dam has an important role in flood control and strongly influences the environmental conditions of the Zambezi Valley. The unexpected opening of the dam, even if to regulate the water level, can cause evident damages like the loss of agricultural land and the destruction of the housing compounds that are situated in the floodplain.

In the last three decades there has been a frequent series of floods, which cannot be attributed only to natural events. In particular, on the 2nd of December 2007, intensive rain led to a huge increase of the flood level of Zambezi main tributaries. Furthermore, Cahora Bassa Dam poured out water at a frequency of nearly 3.500 m³/s, contributing definitely to the rise of the flood level of the lower part of the Zambezi River. From January 2008, the province of Sofala was affected by violent floods in the plains of the rivers Zambezi, Púngue, Búzi and Save. Such floods involved the districts of Chemba, Caia, Marromeu, Nhamatanda, Dondo, Búzi and Machanga. In 2008, the *Direcção Provincial das Obras Públicas e Habitação* (Provincial Direction of Public Works and Housing) of the Sofala province prepared a programme for people affected by the floods, in order to resettle them in safe areas (*Programa de Reassentamento da população afectada pelas cheias 2007*). The floods have also mobilized international aid and *vila de Caia* has become a permanent emergency base. In the Caia district, only 372 families (2.313 people in total) have been moved away from the risk areas. It must be underlined that the whole number of families to be resettled in the Sofala province is almost 6,384 and, according to 2007 data, only 16.1% of the families had been resettled. The goal, then, is far from met and the problem is still extremely topical. However, the resettlement process has entered its second phase, which consists of

transforming the temporary camps into permanent urban areas (*bairros*) equipped with infrastructures, services and “conventional houses”.

Another factor determining the abandonment of the rural areas, one has been noticed in other districts of Mozambique by some authors, is the loss of competitiveness of the local agricultural products due to the import from other countries. This exogenous factor has not been detected in the case of the Caia district, where, on the contrary, the production of food would be enough to satisfy local population’s subsistence. Moreover, a certain export of agricultural products towards major towns is to be underlined, in particular in the area situated in the west bank of the Zambezi River.

District	No. of resettlement centres	Number of resettled families	
		2007	2008
Búzi	3	419	17
Caia	17	3,000	657
Chemba	2	1,300	
Dondo	-	-	
Machanga	1	-	221
Marromeu	3	1,328	
Nhamatanda	-	-	

Table 5.5. Population of the Sofala province in resettlement centres. Data from *Instituto Nacional de Gestão de Calamidades, Centro Operativo de Emergência (COE) de Beira*.

- Pull factors

The most important factor attracting people to the small towns of the Caia district is the possibility of integrating agricultural production with other jobs suggested by the urban context.

The most important opportunities of income differentiation through non-farm activities are given by commerce. The *vilas rurales* of the district, in fact, from one side function as markets for the regional agricultural produce (mainly cotton and sesame), from the other side offer goods and services to their rural areas of influence. In particular in *vila de Sena*, a high percent of the population is involved in commercial activities of different kind. Trade has gained new impulse after the improvement of the transport infrastructures that connect the small towns of the district with national and international urban networks and trade flows, as was described in Section 5.1.3. In addition, the modernization of transport and electrical

infrastructures have employed (and are still employing) a non-negligible number of local workers. Furthermore, some hotels and restaurants are being built as a response to the unexpected movement of people, providing further job opportunities.

The improvement of the quality of life through the provision of urban services is another important factor preventing the rural population from migrating towards major towns. As already said, in fact, small towns of the Caia district are now equipped with basic urban services and modern communication infrastructures. However, even if these are still far from satisfying the demand of the whole population, it is important to underline that the situation is improving, partly thanks to international cooperation programs. These not only provide jobs to a certain number of inhabitants, but also have the effect of increasing urban services and infrastructures. Through international cooperation projects, for example, the hospital of Caia was enlarged and modernized and a big secondary school is now functioning, while in Sena a rural bank was opened. At the same time, projects such as the enhancement of the aqueducts of Caia and Sena, the construction of a network of primary schools, and the creation of a community radio reinforced attractiveness of the small centres. Finally, the distribution of food and medicines by international aid programs implemented after the Zambezi floods, mostly concentrated in Caia, attracted not only families that had been resettled but also a huge number of poor farmers from the surrounding rural areas.

Furthermore, the administrative decentralization process has redefined the role of district administrations, allowing them to strengthen their own administrative structures and staff bases, and to employ qualified people coming from major urban centres. In the new administrative framework, important decisions for the economy and for the living conditions of the population are assumed *in loco*. Therefore, the hypothesis must be taken into consideration that the consolidation of communities in the *vilas rurales* could depend also on people feeling part of a local society that is able to decide autonomously on matters affecting perspectives on life.

Small towns of the district, therefore, present a certain advantage if compared to the rural settlements of the hinterland, which lack even of basic services and are badly connected to the towns through uneven local roads that cannot be used for part of the year. The possibility of keeping a physical linkage with the rural areas of one's origin, and with social and kinship networks, is another important factor preventing the population from migrating towards major cities.

5.2.3 New roles of the district Administration and its tasks

The Caia district includes three *postos administrativos* and five *localidades*. Caia is the seat of the district government. Sena and Murraça are the seats of the other two *postos administrativos* of the district, each under the responsibility of a *Chefe de Posto* (Head of the

administrative unit). Finally, urban *bairros* (neighbourhoods), each formally delimited and administrated by a secretary nominated by the district administration, are to be added to this administrative system.

None of these administrators is elected by the population; they are all nominated directly by the central government. However, a complex participation system was established to somewhat reduce the distance between the local authorities and the population. The advisory bodies of the local authorities are the *Conselho Consultivo do Distrito*, the *Conselhos Consultivos do Posto Administrativo* and sixteen local forums that operate in *aldeias* distributed throughout the entire district. Advisory councils and local forums should allow the different social groups and stakeholders to cooperate with the local administration authorities, seeking solutions to major problems affecting population, its well-being, and the sustainable development of the territory. Since the year 2000, traditional authorities have been able to take part in the advisory organs of the district's formal administrations. *Regulos* are the traditional leaders representing customary rights of rural communities and a number of decisions on important aspects of daily life are appointed to these figures, including land tenure and the conservation of natural resources. The "formal" administrative subdivision of the district, in fact, overlaps the "traditional" one that divides the territory of the Caia district into 22 *regulados*, each under the jurisdiction of a *regulo*.

After the public sector reform, as seen, districts have obtained administrative and budgetary autonomy and the local authorities have gained more complex functions. Moreover, as a result of the ongoing processes described in previous sections, the Caia district's small towns are experiencing both a rapid population growth and significant transformations, which charge the local administration with new tasks. Local authorities (whether formal or traditional) do not appear passive at all in facing these changes. They are directly involved in the realization of major works that introduce, besides having direct effects on the urban economy, elements of strong modernization.

The first tasks faced by the district government were the drawing up of the Development Strategic Plan, the Economic and Social Plan, and of the Spatial Plans of Caia and Sena. The *Plano de Uso da Terra* (Land use Plan of the District) is still under elaboration since three years. These plans intended to promote local development and reduce poverty in the district and to ensure the ordered transformation of its small towns. In all of these cases, the district authority demonstrated that it was able to address complex processes and to involve technical—and high-level—skills in supporting specific political and administrative objectives. Moreover, the involvement of both formal and traditional authorities within the decision-making processes was, in the end, quite important. But it is to be underlined that, at the moment, senior technical and administrative personnel come from major towns, while the level within the organizations reached by local personnel is still very low. Training of local technicians started, in fact, only recently. Furthermore, local administrations still strongly

depend on the financial and technical support of international aid organizations and NGOs. The following are a brief descriptions of the proposed plans.

- *PEDD—Plano estratégico de desenvolvimento distritual* (The Development Strategic Plan)

The *Plano estratégico de desenvolvimento* was drawn up in 2006 with the contribution of the GTZ, the provincial administration and some NGOs operating in Caia. This plan, besides containing a deep analysis of the economic and social situations of the district and a description of the district's weaknesses and strengths¹⁴, divides the territory of the District in four areas and individuates priority fields of intervention¹⁵. For each area, a detailed list of actions is presented, which are considered priorities and involve several aspects of the local economy and society. Even if the district administration is not in the condition to finance the whole plan, it constitutes a framework for the central government, international aid organizations, NGOs and foreign investors acting in the district.

- *PES—Plano económico-social* (Economic and Social Plan)

In 2007, the *Plano económico-social* was also drawn up with reference to the *Plano de acção para a redução da pobreza absoluta* (PARPA), the latter undertaken by the Mozambican Government. The plan is addressed to the 18,000 households of the District—that is 79.7% of the total—that depend entirely on agriculture. The plan is aimed to increase the agricultural production level, diversify the food grown, promote commercial production, increase the livestock production, reduce the loss of agricultural product, extend the commercial network and involve rural communities in managing natural resources. With reference to these goals,

¹⁴ The main weaknesses individuated by the document are: the limited agricultural production, the lack of sources of drinkable water, the high frequency of the Zambezi floods, and the lack of both public structures—principally schools and hospitals—and social infrastructures. The main strengths individuated are: the abundance of water resources, and the presence of large forests and rich soils. The priority field of intervention is represented by the scarcity of water, due to excessive salinity, found in Mangane, Ntopa, Chatala and Candela, all *aldeias* located in the interior of the district.

¹⁵ The development areas that have been individuated are the following.

- The corridor along the Zambezi River between Caia and Sena, characterized by high population density, the presence of important infrastructures, and the fertility of soils. Here the main problem is the scarce productivity of agricultural activity.
- The agricultural region situated in the western part of the Zambezi corridor, characterized by inadequate utilization of agricultural land, a lack of infrastructures and by a medium population density. Here the main problem is the scarce agricultural production.
- The forest region, which occupies the western part of the district, characterized by the presence of large forests and wildlife, and by low population density. Here the main problem is an inadequate water supply, given the deepness of the ground water.
- The alluvial region situated in the eastern part of the Zambezi that is characterized by, besides the presence of the rich and complex habitat of the river, the frequency of floods which inundate soils cultivated during the whole year. Here the problem is the loss of human lives and of goods.

the district administration directly organizes forms of cooperation aimed at extending irrigated lands and promoting the production of fruits and vegetables. They also distribute products that safeguard harvest from the attack of insects and they create local committees to protect wilderness and forest resources. The results of these actions are tangible, since the high increase in the production of sesame—a product much-sought in recent years on the Asian markets—minimized the otherwise-devastating result of two years of scarce harvest. And this happened in a context in which the food production normally succeeds only in guaranteeing a bare subsistence level.

- The Spatial Plans of Caia and Sena

In the past few years the district administration has had to cope not only with the emergency of resettling the peasants affected by the Zambezi floods, but also with the rapid socio-economic and physical transformations that the above-mentioned processes produced in the small towns of the district. Confronted by these changes, the local administration decided to have spatial plans drawn up for Caia and Sena. District administration turned, then, to the CAM—*Consortio Associações com Moçambique*, an NGO from Trento that operates in the district of Caia. The *Consortio*, in turn, sought expert advice from the Faculty of Engineering at Trento, and in particular from the Department of Civil and Environmental Engineering.

The drawing up of *POTU—Plano de Ordenamento Territorial e Urbanização da Vila de Caia* (2006), and *PEU—Plano de Estrutura Urbano da Vila de Sena* (2009), then, was made jointly by the *consortio*, the experts of the University of Trento and the district authority. The active participation of the *Conselho Consultivo do Distrito* in supporting the decision-making process should be noted, as should that of the *Conselho Consultivo do Posto Administrativo* of Caia and Sena in choices related to land use control. The district authority lacked qualified local technicians, so it was necessary to train a group of young people, some of whom had graduated secondary school, that constituted first the *Gabinete do Plano* (Planning Office) and then the *Servicio Obras Publicas* (Public Works Office). The plan of Caia, approved on the 18th of October 2006 by the Provincial Governor, was the first concerning a *vila rural* in Mozambique. Both plans are now being implemented.

The aim of the spatial planing was to intercept new development opportunities and address the change, as well as to manage the immigration flow from rural areas. The high level of concentration of urban poverty and the negative effects of a rapid and unplanned urban growth, already experienced by the largest cities, were to be avoided. Moreover, through the plans, the district authority intended to ensure the ordered transformation of the towns and to provide them with a modern urban structure¹⁶.

¹⁶ For a more systematic description of the plans, see: Diamantini C. and R. Nicchia (2009), *The emerging role of Mozambican small urban centres in local development: the case of the Caia district*. In APDR (Associação

It is important to underline that the drawing up of the plans created the conditions to promptly face the resettlement of the population that had been forced to abandon the floodplain of the Zambezi River. Having established areas suitable for urban development, in fact, allowed the District authority to immediately indicate to the provincial administration and international donors which new expansion areas were to be occupied by the immigrants. The choice of the resettlement areas followed rational criteria established by the plans and was made with the consideration that the resettlement of the families affected by the floods was not temporary—and consequently to be handled by the provision of refugee camps—but would instead be permanent and was, therefore, to be faced by urban growth interventions.

However, it must be also underlined that the implementation of the plans is being slower than expected and that it has to cope with many difficulties, that depend on different reasons. First of all, no particular attention was given to implementation mechanisms during the planning activity, such as, for example, the fund raising for urban projects¹⁷. Furthermore, some western planning methodologies were proposed, that are not appropriate to the small towns. “Zoning”, for example, seems not to be an adequate instrument to regulate land use and allocation in these settlements, whose main characteristic is “*mixité*”, that is to be found even within the housing compounds. Also the rigid demarcation of the plots according to geometric grids in new expansion areas, seem not to respond to local housing needs and culture.

Portuguesa para o Desenvolvimento Regional), Proceedings of 15th Congress, Praia: Jean Piaget University. Diamantini C., Geneletti D., Nicchia R. (2011), *Promoting urban cohesion through town planning. The case of Caia, Mozambique*, International Development Planning Review, 33.2. Diamantini C. (2010), *Spatial Planning to Avoid Urban Inequalities: Experiences in emerging small towns of Mozambique*, Proceedings of 46th ISOCARP Congress 2010, Nairobi.

¹⁷ The realization of the new market in Caia, for example, started only in 2010, almost four years after the presentation of the project. Even if the new market was considered the “key project” of the plan, no money were at disposal at the time it was designed. In the rapidly urbanizing small towns of Caia District, four years are a sufficient time for altering considerably plans and projects. In this laps of time, in fact, the spontaneous settlement activity of the population put at risk more than once the realization of the project, whose area – in spite of the continuous controls of the District administration- was reduced and the market needed to be redesigned more than once.

Chapter 6

Living in a rural town: a survey

6.1 Emerging social groups—their characteristics and lifestyles

As a consequence of the “modernization” processes described in the previous chapter, such as rapid urbanization, modernization of infrastructures and services, growth of commercial activities, and administrative decentralization, Caia and Sena are rapidly changing. Not only the socio-economic composition of the population, but also the physical structure of the towns is being transformed. Modernization, however, does not mean the sudden substitution of urban and modern way of living, production and consumption for traditional ones, but rather the hybridization of the old and the new within an urban-rural continuum.

In this chapter the socio-economic, cultural and spatial complexity of the rural towns is described through the classification of emerging social groups in *vila de Sena* and the description of their main characteristics and lifestyles. These considerations follow from the analysis of the results of a household survey that was conducted in August 2008 in the town, the research methodology of which has been described in section 4.3.

The household survey confirms the evident rural characteristics of the town, whose population continues relying principally on agricultural activities. Not only does the strong connection with the earth have economic reasons, but it also governs the social organization of the population and reflects deeply-held values related to the ancestral rural culture. These traditional socio-cultural features are reflected also in the settlement patterns and housing typologies that give the town its typical character of a big rural village. Besides these expected results, the survey also shows that the socio-economic composition of this dynamic small town is not homogeneous at all. The classification of lifestyles here proposed demonstrates that it is possible to identify different socio-economic groups in Sena, each with a different degree of “urbanity”. As analyzed in the following sections, the lifestyle of households belonging to typology 1 (households depending on subsistence agricultural activities) does not differ substantially from that of the rural families who live in the hinterland of the district¹. Family life is completely organized around the agricultural activity,

¹ The lifestyle of the rural families of Caia District has been analyzed through an household survey lead in Summer 2009 by the researchers of the DICA and have been described in Ianni (2010).

and the survival of these households depends strictly on the direct use of and free access to natural resources. Some elements of urbanity, such as non-farm economic activities and access to urban services, has begun permeating the rural lifestyle of households belonging to typology 2 (households depending on both agricultural and non-agricultural subsistence activities). The principal characteristic of families of typology 3 (households depending on hybrid urban activities), instead, is that they deal with a mix of urban and rural activities and consequently present more complex behaviours and aspirations. Therefore, in the same income range, it is possible to find households with very different socio-cultural features, which depend in part on the household's economic activity and in part on its place of origin. For example, with the same family income, householders whose head is a public employee have a more urban lifestyle than that of agricultural traders, who more reflect a rural *modus vivendi* and traditional values². Or a school teacher coming from Beira might try to bring his urban lifestyle with him to a small town like Sena, whereas his colleague coming from the rural village of Magagade might, in spite of having a medium income and a public position, maintain still the rural roots—primarily an agricultural land tenure. Finally, households belonging to typology 4, the modern traders, are the socio-economic elite of the town and express the aspiration to an urban lifestyle, copying the habits and behaviours of the families of Beira.

However, the way towards “modernization” is not linear at all and reminiscences of the rural world persist in all households in anthropological terms, in cultural values and in socio-economic organization. No family, for example, even with a high income, renounces its family farm. Furthermore, polygamy, the characteristic structure of rural households of the district of Caia, is widespread also in the rural town, and the survey shows how the number of wives a man has increases with his income³.

² As it will be analyzed in the following notes, indicators of “urbanity” can be considered: monogamy, conventional housing, preference for hospitals and formal institutions, and use of coal and electric energy as power sources for cooking; while indicators of “rurality” are: polygamy, traditional housing, preference for the *curandero* and traditional institutions, and the use of firewood for cooking.

³ Through the household survey, in fact, a positive correlation has been noticed between income and polygamy. Only 1.3% of the households of typology 1 are polygamous, but the polygamy rate rises in relation to the monetary income of the household and, for typology 4, three out of four families have a polygamous structure with up to four wives. It is difficult to establish an unambiguous relation of causality, whether the number of wives—and thus of farm labourers—determines the greater income or if having more monetary income allows the head of the household to have more wives. It is possible that both are true. The economics of polygyny (some men having more than one wife) has been analyzed by some authors (*Becker, 1981; Bergstrom, 1994*). In particular Bergstrom (1994) affirms that in human societies polygyny is a very common mode of family organization around the world. In Murdock's *Ethnographic Atlas*, of 1170 recorded societies, polygyny is prevalent in 850 (Hartung, 1982). Males can increase their reproductive success substantially by acquiring additional wives, mistresses, or concubines; while for females, an extra husband adds little to her lifetime fertility and, after achieving moderate prosperity, additional wealth does little to increase the number of offspring she can have. Therefore, in an economy with well-functioning markets for marital partners, where parents distribute inheritance and the bridewealth of their daughters in order to maximize the number of their surviving grandchildren, we would expect there to be polygyny rather than polyandry and we would expect brides to command a positive price. This description fits most of the polygynous societies of Africa.

Here, the main characteristics of the four typologies identified through the survey are presented, as well as some considerations coming from the analysis of the spatial distribution of the households.

6.1.1 Typology 1: households depending on subsistence agricultural activities

- Composition and origin of the households

Eleven households, over a total of forty-seven interviewed, belong to the first typology. All but two of these households have a monogamous structure. In one case (household no. 14), the polygamous family is spread across two different housing compounds (the only case found of this kind in the survey), but there is a high degree of pooling of income and expenditures between both family units. The second polygamous household has a more conventional family structure: the head of the household lives in the same housing compound as his two wives—30 and 28 years old—and ten children—ranging in age from 4 months to 16 years old. Women generally start having children at the age of fourteen and the monogamous families range from a minimum number of three up to nine members.

Only two families are native to Sena and have always remained in the town. All the other households come from different places in the rural hinterland or from other urban centres like Chemba, Mutarara, Murraça or Marromeu. During the civil war, they all shared the same forced migration towards the refugee camps of Malawi, where many of them remained for ten years and led what they defined during the interviews as a “normal life”: going to school, getting married and cultivating land. Starting from the year 1994, after the peace agreements of Rome, they were resettled in the temporary camps in Sena. These became their permanent settlements, since new community and family ties had been built during the war and, as was reported during the interviews, there seemed to be no particular reason for going back to the places of origin.

- Livelihood strategies

Households that rely almost completely on subsistence agriculture belong to this category. Their daily routine is centred around rural activities: waking up early to reach the *machambas* “when the sun is not yet high on the horizon” and coming back at evening. The year is divided into seed-season, harvest time and that for “preparing land for crops”. In seasonal peaks, families (or part of the families) move permanently to the *machamba*, where a shelter is generally built to sleep in at night. This phenomenon, known as “double housing”, is due to the long distance between the *machambas* and the “urban” housing compound, which can be up to seven kilometres apart from one another, that is almost two hours on foot. The subsistence agricultural activity, however, doesn't satisfy all of the family's basic needs,

so it is always accompanied by odd jobs, called “*buscados*”. These consist mainly in the collection and selling of resources that are freely available in nature (firewood 8/11; straw for roofs 2/11; fish 2/11; stones for construction 1/11; coal 1/11), but also in selling the agricultural surplus (3/11) and cattle breeding (1/11). These categories of *buscados* are generally done by both the men and women of the family, while others are done just by men, such as the processing and selling of natural resources (adobe 1/11) and taking odd jobs such as farm labouring (2/11), bricklaying (1/11) and carpentry (1/11).

In most cases, family members’ survival strategies consist of adopting a wide array of *buscados*, according to the opportunities offered by the timing of the rural activities and according to the individual capacities of the householders. Household no. 13 can be taken as an example: Albano Manuel, his wife Zina Maria, and their six sons and daughters are not able to satisfy even their food supply through the agricultural activity. Their 2.5 hectares of land, in fact, are too arid to cultivate vegetables on, and only *mapira* (sorghum), that constitutes the base of the family diet, can grow. Therefore, all householders spend their time finding odd jobs to obtain a monetary income. Women collect firewood along the path towards the *machambas* and sell it to the neighbours, while Albano looks for straw and other vegetable construction materials to sell too. Luisa, the eldest daughter who has a particular robust constitution, collects stones for domestic selling and, twice a week, goes by bicycle to the market of Chola to buy tomatoes that are resold in the market of Sena at double the price. Emanuele, the nineteen-year-old son, buys *capulanas*—local cloth—wholesale at the central market and resells it at a retail price as a street vendor. Occasionally, he also works in other families’ *machambas* for 40-50 MTn/day (almost 1.5 euro a day).

However, even when subsistence agriculture is integrated with a wide range of *buscados*, like in the presented case, the sum of all these activities produces a very low monetary income and households belonging to this class declare a maximum of 7,550 MTn/year: less than one euro per day for the entire household.

All households declare not to have any savings at all, and to spend all their meagre monetary income that comes from the *buscados*. This is used to cover just those basic needs that are not possible to satisfy by the direct and free access to natural resources. First of all, all families have to buy additional food, because in no case does the farm activity provide the whole of the family food supply. Most households also buy clothes (8/11) and have expenses related to education (7/11): “*material escolar*” or taxes for the secondary school. Sometimes their monetary income does not succeed in covering even these basic needs. Moreover, while the expenditure related to clothes seems to be quite homogeneous within the family, because a rotation of who gets clothes bought for them among family members is applied, there are some differences in the allocation of resources for education within the family, as it will be described in the next paragraph. Moreover, some households declare to have also expenditures related to water (6/11) and housing maintenance (2/11).

- Access to socio-cultural resources

Normally children attend up to primary school and education is considered a basic need, thanks to a big campaign undergone by the Mozambican government to improve literacy in rural areas, although school attendance is not guaranteed during the agricultural seasonal peaks, when children have to help in the *machambas*. Among the adults, generally only men continue to improve their educational level, going to evening classes. Women are generally engaged only in agricultural activities. The educational level of the head of the household, however, doesn't normally exceed primary school (EP1 8/11; none 2/11; EP2 1/11)⁴.

In this typology, most of the families go first of all to the *curandero* (6/11) and only if traditional medicine doesn't work do they go to the hospital. When asked about why they choose the *curandero* when access to the hospital is also offered for free, one of the interviewed householders answered that “there are some illnesses that are African and need to be treated with African means”. Two families affirmed that they go only to the hospital, because of being Christian. Moreover, it is interesting to notice how, even in such a small community, a wide range of religions and worship places is present⁵. In this typology, householders follow Catholic, Anglican and Lutheran religions, Johane Marange and Jehovah's Witnesses worships. Some of these religions coexist within the same household and this does not seem to generate conflicts.

Furthermore, the low monetary income does not allow the access to leisure and other urban facilities. Finally, most of the households have no means of transportation, with only five families declaring just one bicycle to share among their members.

- Use of natural resources

Considering the low monetary income at their disposal, the survival of the households of typology 1 depends on the direct and free access to natural resources. All households declare that they don't pay taxes to have access to land for agriculture or for housing. Moreover, cattle breeding is allowed by the large dimension of the housing plots, firewood is collected freely on the way towards the *machambas*, and healing plants are used to cure most diseases.

⁴ Educational level according to the Mozambican school system: *EPI* (primary school, up to the 5th grade); *EP2* (complete primary school, 6th and 7th grade); *secundaria* (secondary school, from 8th to 12th grade). There are also higher educational levels, such as university, postgraduate schools and courses. The survey registered just one case of higher educational level, consisting in a school teacher who finished the post-graduate school in Teacher Training.

⁵ Some interviewed households, however, did not reply to this question. The local technicians of the Spatial Planning Office of the district of Caia, who always accompanied the researchers of Trento during the interviews, explained that a possible reason is that householders do not trust to declare that they practise animism to “foreign people”. Anyway, according to interviews with the Italian employees of the CAM, animism is widely diffused, including in those families that follow more “official” religions, producing interesting forms of syncretism.

Families generally use traditional wells—that are simply holes rudimentarily excavated in the ground—as their water supply while only five families pay a tax of 5 MTn/month to use the *bomba manual* (hand water pump). Furthermore, collecting natural resources and selling them is, as seen, the most widely implemented form of *buscados* in this typology of households and, therefore, their only source of monetary income. Finally, the housing typology of these households is the traditional *mudzi* that is built without monetary costs by the householders themselves by using building materials freely available in nature. Housing compounds are not provided with electricity.

- Housing typology

This vernacular housing typology—the traditional *mudzi*—consists of different small buildings, called *palhotas*, settled around a wide, circular open space. The settlement grows up progressively together with the family. In the case of a monogamous family structure, the *palhota principal* is reserved to the head of the family, his wife and little children. When children grow up, they move to their own *palhotas*, one for the women and one for men. Generally at the age of fourteen, the now adult son builds his own *guero*, the *palhota* where he will receive his wife once married⁶. In the case of a polygamous family structure, the head of the household must equitably provide each wife with her own *palhota*.

Indoor spaces are very intimate ones, used just for sleeping and for shielding oneself from sunlight or rain during the day. Moreover, indoor spaces are also used to store agricultural products. For all these reasons, *palhotas* have only small openings to allow the cross-circulation of the air while keeping the interior in shade. All daily activities are conducted outdoors, in the central open space where firewood to cook is placed, cereals and straw dry over a *mesa alta*, guests are received, domestic selling takes place, animals scratch about or are locked inside fences, and children play.

Compounds can be also personalized through handicraft activities, as in the case of no. 8, where a carpentry area was set up. The central space is generally dominated by big, leafy fruit trees, like *massaniqueras* and *songolas*, under whose shadow most of the domestic activities take place. Nature, in general, is an integral part of the compound, tracing boundaries among different properties and, moreover, is essential in improving the outdoor microclimate, as it will be explained in section 7.2.3.

Palhotas have generally very small dimensions (2x3 m, 3x3 m, 3x4 m, 3,5x4,5 m) and the indoor space consists of just one room, without any articulation of the inner space. Sometimes it is possible to find porches surrounding the *palhotas* completely or just on one side. These porches, which can also be closed in by wooden *estacas* or vegetable reeds, provide one of the most-used areas of the compound and it is usual to find householders

⁶ According to the patrilineal social organization of the *sena* population, in fact, householders belong to the father's lineage and women, once married, generally are acquired by husbands' households.

eating or resting in the shade provided. Porches also have the function of protecting the walls of the building from atmospheric conditions. Latrines are to be found only in two compounds, while each compound has a spiral element made of *caniço* (vegetable reeds), that provides a place to shower in privacy.

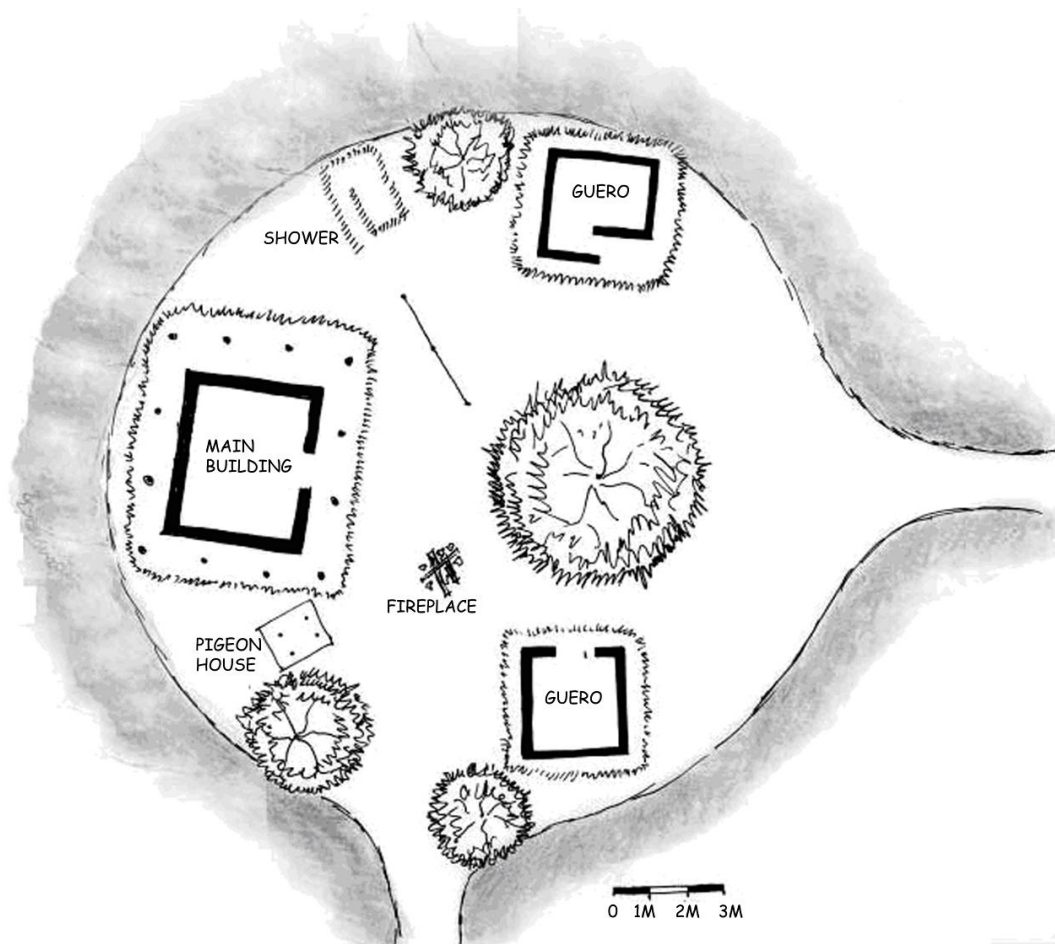


Figure 6.1. Graphic and photographic survey of a traditional *mudzi* (household no. 6)



Figure 6.2. *Palhota* in adobe with a four-pitches straw roof

Building techniques commonly used in this housing typology are the vernacular ones. Walls are generally made of earth, according to two main techniques: *tijolo cru* (sun-dried mud bricks, or adobe) and *pauipique* (wood frame, filled with mud and stones). In a few cases it is possible to find walls made of wooden posts covered with *caniço* or *capim* (straw). The roof is always a wooden structure made of thin, circular posts covered with *capim*, and can have two or four pitches.



Figure 6.3. *Palhota* in *caniço* with straw roof

All families declare that the small buildings had no monetary costs, since the men of the family are normally engaged in collecting building materials (such as mud, wood and straw) freely in nature, in processing them and in building the *palhotas*. The whole family, however, participates in the construction process, sometimes with the help of other relatives and neighbours. More than one interviewed householder underlined the point that children also help as they can, by bringing water for example, because it is important for them to get acquainted to the process in order to be able to build their own *guero* once they become adults. Once the *palhotas* are finished, women are responsible for ordinary management and housing maintenance, such as soaking earthen pavements with a solution to drive insects away, or to add further mud layers to the walls after the rainy season, sometimes decorating them with *matope* of different colours.

The only exception to the vernacular housing typology in this class is household no. 3, which takes part in the “Resettlement Program” promoted by the province of Sofala (see section 7.2.3) and, therefore, has gained financial and technical support to build his house, but with the obligation of using only “conventional” building materials: bricks for the walls and corrugated iron sheets for the roof. The family found it more convenient, however, to sell the corrugated iron sheets to some neighbours. The brick walls remain, but the roof was substituted with a traditional straw one.



Figure 6.4. *Palhota* in adobe with a four-pitches straw roof and porches



Figure 6.5. Detail of the porches

6.1.2 Typology 2: households depending on agricultural and non-farm subsistence activities

- Composition and origin of the households

The second typology is the most numerous one, since 21 of the 47 interviewed households belong to this group. These households have a mainly monogamous family structure (16/21), and its members reach a maximum number of ten. The polygamy rate is much lower: in four cases the head of the household has two wives and in one case even three. In polygamous families the number of members varies from seven to fifteen, all having kinship relations with the head of the household that is generally a man⁷.

Similarly to typology 1, most of the families (13/21) belonging to this group come from different areas of the rural hinterland or from different towns of the district. They fled during the civil war towards the refugee camps of Malawi and moved to Sena at the beginning of the 1990s. A few families, however, came in the town directly from other parts of the district of Caia (3/21) and from the Sofala (2/21) and Tete (1/21) provinces. Manuel, the head of the household no. 16, affirms that he moved from Inharuca, a rural area of the district, because there are more opportunities for commerce than in the hinterlands of Sena, while Antonio Benjamin, the head of the household no. 44, moved from Murraça in order to work on the rehabilitation of the railway line. This job—he says—“has completely changed the perspectives of life of my family”. The head of household no. 38 moved from the rural area of Macualo for the same reason, but he left the job in the construction sector because he felt “underpaid”. He affirms that agricultural trade is more profitable and hopes that the construction of the railway line will help him commercialize more products. Venicio Bascolo, head of the household no. 15, affirms that Sena is much safer than the rural areas of Chemba, where he and his family come from.

- Livelihood strategies

All households of this class integrate subsistence agriculture with low-income non-agricultural activities. Such non-agricultural activities can be trade (agricultural trade 8/21, street trade 5/21), handicraft (3/21) (bricklaying, bicycle repair, cooperative production of bricks⁸), or employment in the construction sector (CFM-railway 3/21) or international aid programmes (2/21). Family agricultural trade is based on a domestic mode of production, in

⁷ The only exception is household no. 17, whose head is Annamaria, a women who was recently widowed and who maintains her agricultural activity and two children and two nephews with the help of her sister Anastacia, who is employed by the *Kuanghissana* project, an international aid program in the sanitary sector. Anastacia has a husband who studies at the secondary school and who, along with the children, helps in agricultural seasonal peaks.

⁸ Victor, the head of the household no. 25, has, together with other people, created a sort of cooperative society called “*Ceramica de Nhamioio*” for the production of bricks, *tejolos quemados*.

which family members cultivate land on their own and sell the surplus of agricultural production. There is also a prevalence of families who still draw on *buscados* (14/21) as a source of extra income. In this class, *buscados* have still an important role in the household budget but are more diversified and go from the collection and selling of firewood (3/21) to the processing of natural resources (domestic production of mats 2/21, adobe 1/21, wooden posts 1/21, bricks 1/21, food and alcohol 1/21) to direct selling of agricultural surplus (5/21). Other *buscados* are more profitable, such as—for example—the occasional job as night keeper, bicycle-taxi, bricklayer and *pedrero*. One household rents a *palhota* within the housing plot to three young *buscaderos* who came from the rural hinterland in search for a job.

Machambas can be “*familiar*” or “*peçoal*” according to who is in charge of it, either the whole family collectively or someone in particular. Normally there is a sexual division of labour within the family, with women responsible for the agricultural activity and men responsible for the non-agricultural sector. This sexual division of labour is not so stark and it seems that there is collaboration, with men helping in agricultural seasonal peaks. Nevertheless, *machambas peçoal* always belongs to women (the wives, daughters or daughters-in-law of the head of the household) and are directed at the production of food for the family—generally corn, *mapira*, and beans. These are the only products that it is possible to cultivate in the arid *machambas* situated “*atras do monte*”, between six and eight kilometers far away from Sena towards the hinterland of the district. Households no. 21 and 25 also have an *horticula* along the bank of the Zambezi River where they produce vegetables. Half of the families of this typology also have *machambas familiares*, which are sometimes directed at the production of cotton or sesame for commerce.

The monetary income produced by the sum of all these activities (agricultural, non-agricultural and *buscados*), however, is very low and ranges from 7,500 to 30,000 MTn/year (approximately, from 300 to 857 euros/year for the whole household).

Among household’s expenditures we find first of all those for satisfying basic needs. In contrast to the first typology, some of the households of typology 2 buy, from street traders, some goods that could be freely collected in the forest such as firewood or roofing straw. In five cases, we also find expenditures related to what could be named “psychological needs” related to recreational services and transportation. In only three cases, however, is it possible to notice the management of various and complex expenditures, that is when—apart from basic and psychological needs—there are also small expenses related to working licenses and commercial activities. In general, though, this class contains a form of traditional trade (agricultural and street trade) that is family-based and doesn't require specific assets and licenses. In only one case does a household employ a servant, who is paid with hospitality and a small income (about 50 MTn/month), who takes care of the water provision and other domestic tasks. Most of the households don't have savings (16/21), while a few declare a

maximum savings of 10,000 MTn/year (almost 300 Euro/year). In almost all cases, these savings are invested to improve the economic activities of the household, for example by improving the agricultural production of the next year or by buying more goods to trade.

- Access to socio-cultural resources

The association with urban assets is as critical as in typology 1 but, in comparison with the previous group, these assets seem to be more accessible. All children attend the primary school, most of the householders finished part of primary school (EP1) and in half the cases have completed primary school (EP2)⁹. Men, in particular, attend evening classes in the secondary school of Mutarara, that is more than one hour distant by bicycle, and they claim that a secondary school should be built in Sena too.

The hospital is used as well as traditional medicine, but the *curandero* remains the first person to whom one refers in case of illness. Also in this typology are a wide range of religions present: Catholic, Anglican and Lutheran religions, *Igresia do Consolador do Spirito Santo* and *Igresia Nazarena*. Half of the households, however, did not answer this question. Leisure facilities, such as bars and ballrooms, are sometimes used, but generally only the head of the household, and sometimes the adult sons, have access to the consumption of recreational goods. Bicycles are still the only means of transportation (18/21). Most of the households have more than one bicycle and one household has also a bicycle-taxi, which is used as working asset.

- Use of natural resources

Due to their low monetary income, the direct access to natural resources remains very important to enabling the survival strategies of the households belonging to this typology. Land for agriculture is obtained without paying taxes, as is the housing plot. Like in typology 1, the size of the plot is the most important asset for families' subsistence activities. None of the housing compounds of typology 2 are provided with electricity, nor access to potable water. Most of the households use traditional wells as water supply systems, while only seven families pay a tax of 5 MTn/month to use the *bomba manual*. Firewood, building materials and healing plants are collected freely and the processing and selling of natural resources is still, as seen, the most diffused form of *buscado*.

- Housing typology

All households belonging to this typology, with no exceptions, live in vernacular housing compounds that present the same characteristics described for typology 1. The *mudzi* is built without monetary costs by the householders themselves, by using building materials freely

⁹ The educational level of the heads of the household of typology 2: none 5/21, EP1 4/21, EP2 10/21, secondary school 2/21.

available in nature.

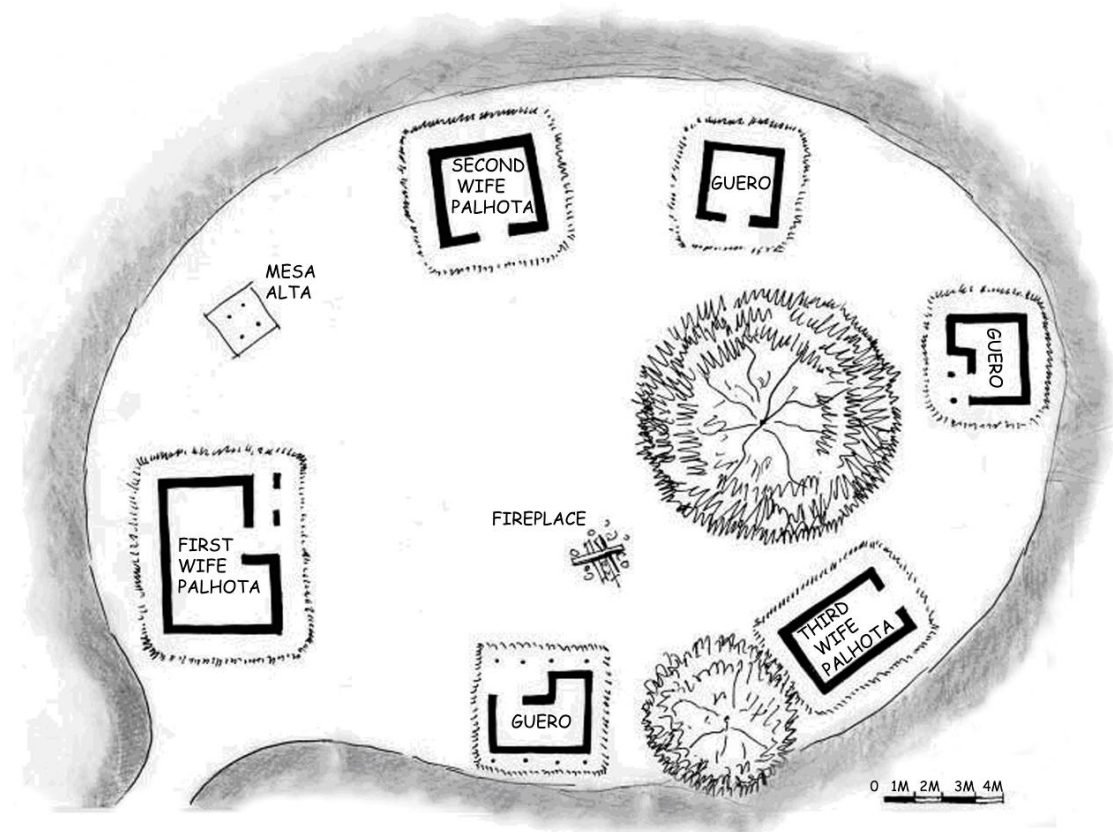


Figure 6.6. Graphic and photographic survey of a traditional *mudzi* (household no. 1)

It is interesting to notice how each *mudzi* adapts to the family structure. The simple family structure of household no. 41—composed of the head of the family, his wife and their little children (of three, five and eight years old)—live all in the same *palhota*, while the complex family structure of household no. 1—composed of the head of the household, his three wives and eleven children of different ages—leads to the construction of a small village made of

three *palhotas*, one for each wife, and three *gueros* (one for the sons and one for the daughters over seven years old, and a personal one for the eldest son, of seventeen years old). These small buildings are seated within the same big *quintal* (plot).

Also, a family's different activities contribute to the personalization of the compound. In the compound of household no. 47, for example, an area that faces the road was set up for domestic selling (*banco de venta*). Here Rosa, the wife of the head of the household, sells retail products that she buys wholesale in the central market. In housing compound no. 9, whose householders rely on more rural forms of *buscados*, there is a large presence of fruit trees, nature and different fences and small constructions to keep animals, since cattle breeding is an important livelihood strategy of the family.

The rural atmosphere of the compound is due also to the construction of a *machessa* in the middle of the plot. The *machessa* is a sort of gazebo, a semi-open construction generally with a circular form, which serves as a cool meeting place where guests are received. This is the only case of *machessa* found during the survey and generally this architectural element is typical of the rural areas, while in towns it is only to be found in the compounds of community leaders or *regulos*, where there is the need for a meeting place.



Figure 6.7. *Mesa alta*



Figure 6.8. Shower

6.1.3 Typology 3: households depending on hybrid urban activities

- Composition and origins of the households

Eleven of the interviewed households belong to the third typology. In this class as well, the percentage of monogamy is higher (7/11) than polygamy, but the gap has been reduced in

comparison to the previous ones. Three heads of household have two wives and one has three wives. The amount of family members ranges from three in the smallest monogamous household to twelve in the biggest polygamous one.

Only three of the households in this typology moved to Sena from the refugee camps of Malawi at the beginning of the 1990s. Most of the families (5/11) instead came to town directly from their places of origin, such as Chemba, Magagade, Murema, and Chiringoma, all located in the province of Sofala. All these households moved to Sena for job reasons. The head of household no. 42, for example, is a school teacher and was assigned to the primary school of the town, while the head of household no. 20 is the responsible for the production of the cotton fabric of Sena. Other households were attracted to the town by the possibility of livelihood diversification (household no. 23), of commercializing agricultural products (household no. 31) or commercializing industrial manufactured goods (household no. 45). These households say they have considerably improved their quality of life by moving to Sena from the rural areas, thanks to the easier access to sanitary and educational services and transportation means, and to the presence of a well-stocked market and electric energy. Furthermore, two households belonging to typology 3 came from the city of Beira. In both cases the head of the household is a public employee (a school teacher and the head of the local police station), who was assigned to work in Sena. The interviewed householders affirm that the town offers some advantages, such as a higher quality of agricultural products and a lower cost of living, but at the same time they claim to feel isolated and too distant from their families, which are still in Beira¹⁰. One household moved from Mutarara, situated on the opposite side of the Zambesi River in the Province of Tete, but only one hour away by bicycle. In this case, the factor of attraction was the possibility of establishing a *banca movel* (stall) in the central market of Sena where he could sell *capulanas*, clothes and industrial manufactured products.

- Livelihood strategies

The main economic activity of this class of households is generally some sort of typical urban activity that produces a medium income and is generally integrated with a second low-income occupation or with *buscados*. Main activities can be in the public administration (professor at primary school 2/11, head of the police 1/11) or in the trade sector (whether agricultural trade 5/11 or traditional trade 3/11). In this typology, agricultural trade—even if still based on a “domestic mode of production”—avails itself also of a hired labor force that is external to the family and therefore differs from that practiced in typologies 1 and 2, in

¹⁰ In the case of household no. 30, the head of which is also the head of the local police station, the two eldest sons of nineteen and seventeen years old remained in Beira to study, while the other three sons (of 14, 11 and 4 years old) followed their parents to Sena.

which family members cultivate land on their own and sell the surplus of agricultural production. Furthermore, with respect to traditional trade, it is not the more domestic and street commerce that typifies the previous groups; householders of this typology handle a *banca movel* in the central market of Sena, paying a tax for it. This category of trade is defined as traditional because it still presents traditional modes of production, such as being family-based, but at the same time more modern characteristics and assets have been introduced. For example, motorcycles are bought and trucks are rented to transport industrial manufacturing goods coming from Beira, other provinces or even other countries (Malawi or Tanzania).

As already mentioned, these main activities are often accompanied by a second low-income occupation. Household no. 11, for example, the *machambas* of which produce cotton, sesame and corn, has a marketable agricultural commerce, in which the whole family is engaged as well as other waged peasants. This main activity is accompanied by the commerce of goats that are bought throughout the rural areas of Chemba and Sena. They are hosted in a neighbour's yard and—when a reasonable number are collected—are resold in the central markets of Quelimane and Nampula. In the case of household no. 23, instead, the income coming from agricultural commerce is integrated with the salaries of the three elder sons, who work on the construction of the railroad. In household no. 34, traditional trade is integrated with agricultural trade, while in household no. 20 commercializing a wide range of products is more profitable than the employment of the head of the household as responsible for the cotton production of the fabric in Sena. Finally, the wife of the head of the police (household no. 30) is a hairdresser and, in addition to this occupation, has opened also a store in the housing compound to sell products bought in the central market of Beira as well as homemade icecream.

Subsistence agricultural activity is present in almost all families and is still an important part of the family economy. Moreover, this also testifies to the continuance of the rural culture and it is not a coincidence that the only two households that don't make use of a *machamba* are those who come from the city of Beira. *Buscados* are to be noticed only in four cases, and consist of fishery, domestic commerce and the selling of agricultural surplus.

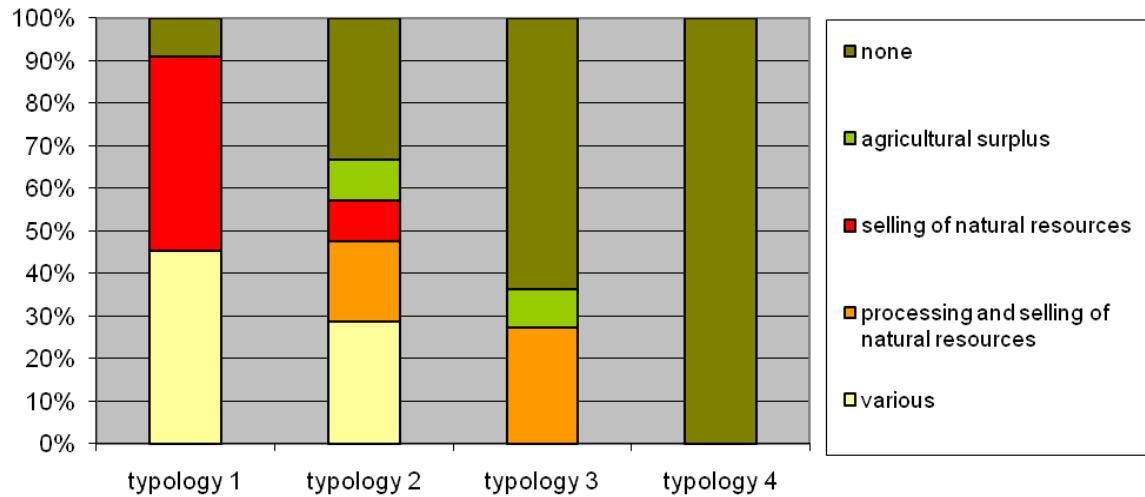


Figure 6.9. Percentage of categories of *buscados* by typology of households

The sum of all these activities (the main economic activity, the second occupation, subsistence agriculture and the *buscados*) produces a monetary income that ranges between 30,000 and 200,000 MTn/year (from 857 to 5,700 euros/year).

In this typology, a starker division of labour can be noticed, where the non-agricultural activities are generally led by the head of the household and his sons while the agricultural activities are conducted by wives and daughters¹¹. Also in this typology, the stronger relation of women to farm activities is underlined by the agricultural land tenure system, according to which households can own a “personal *machamba*”, that belongs generally to women and is oriented around subsistence agriculture (*mapira*, milho and beans), or a “family *machamba*” for commerce (cotton, sesame, beans, corn, peanuts, *mandioca*, *maxoeira*), that belongs collectively to the whole household. In no case was a family found with an *horticula* in humid areas (next to the river) for the production of vegetables.

Household expenditures are related to basic and psychological needs, as in typology 2. In particular, family diet is more varied compared to that of the other two typologies and *carril* is bought every day, *carril* being vegetables, fish and meat that accompany the staple foods (*mapira*, corn and beans). In addition, traders have more various and complex expenditures related to licenses and assets like transportation means and waged workers (mainly farm labourers). Most of the households declare savings up to 20,000 MTn/year (600 euro/year), which are always invested in the improvement of the housing conditions.

¹¹ Even if bargaining processes within the households were not really deepened, according to survey’s data it is possible to underline a sexual division of labour within the families, that is starker in middle and high-income households, where livelihood diversification is more accentuated.

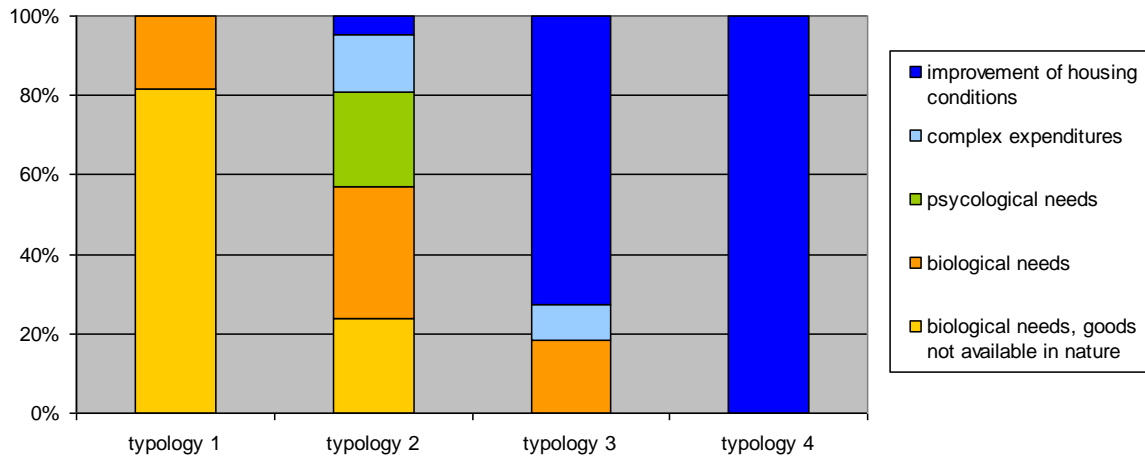


Figure 6.10. Percentage of categories of expenditures by typology of households

- Access to socio-cultural resources

The educational level of the head of the household is variable (none 1/11, EP1 4/11; EP2 3/11, secondary 1/11, higher training level 1/11). From the analysis of data related to the access of all family members to education, it results that there is a differentiation in intra-household resources' allocation. This is generally guaranteed to both sons and daughters up to the complete primary school, while in very few cases was a women found who had access to the secondary school. The only exceptions are the wives of the head of the households coming from Beira, who studied up to the 10th class. Generally only men attend higher educational levels and it was also noticed that there is a relatively high percentage of male adults going to evening classes¹².

In this typology, all households refer to the hospital in case of illness, while only two households stated their preference for the *curandero*. Interestingly, the wife of the head of the household no. 11 stated that she was a *curandera* for a long time and left the profession after having married and moved from Tambara (Province of Manica) to Sena. When asked about her religion, she declared herself Catholic like all other family members and she finds this not to be in contradiction with animist practices and beliefs, thus confirming previous considerations about the diffusion of syncretism. Also in this typology, a wide range of religions is present: Catholic, Anglican and Lutheran religions, *Assembleia Africana* and

¹² This could be explained by the fact that, in contexts where women don't receive equal earnings to men but, on the contrary, generally face discriminations in labour market, parents desire to maximize the return of the investment in their children. Parents are supposed to care about "efficiency" and have no concerns regarding "equity". In other words, parents seek to maximize the total future earnings of their offspring, by investing in those children with the best future prospects. In this case parents would invest more in their sons than in their daughters and, in this way, they reinforce the existing inequalities in child endowments. (Haddad, Hoddinott and Alderman, 1997).

Johane Marange worships.

Householders have access to all urban facilities, but only two heads of the household state that they make use of leisure facilities such as bars and ballrooms. When the wife of the head of the police was asked about the use of recreational services, she replied that the family has a television.

All households, with just one exception, have more than one bicycle and the traders have also a motorcycle that is used both as a private means of transportation and as an asset to support the commercial activity. The head of the police also has a private car that he uses often for travelling to Beira.

- Use of natural resources

Once more, in this typology there is still an extensive use of natural resources, such as land for agriculture and cattle breeding, firewood, healing plants, building materials and so on. However, differently to what happens in previously described typologies, most of these are not collected freely in nature, but are instead bought in the central market or from street traders. Moreover, in comparison with the other typologies that use only firewood as an energy source for cooking, four householders of typology 3 also buy coal in the central market. Furthermore, thanks to a higher monetary income, this class of households also has access to industrial manufactured goods such as clothes, domestic tools, radio and “conventional” building materials. Four housing compounds of typology 3 are even provided with electricity. The large housing plot is still an important asset for families’ subsistence activities and *buscados* that—even if not strictly necessary for householders’ survival—still represent an important form of integration of the family economy. Finally, most of the households use traditional wells as water supply systems, while only four families pay a tax of 5 MTn/month to use a *bomba manual*.

- Housing typology

The wide range of housing typologies registered for this group of households during the survey testifies to the higher complexity of this social group, the households of which—as seen—deal with both modern and traditional activities and present a complex mix of urban and rural behaviours.

Only three households still live in a *mudzi*, the vernacular housing compound built with traditional constructing technologies from the householders themselves¹³. The housing

¹³ This choice has different explanations. Households no. 26 and 23 come from the rural areas of the hinterland. Their main activity is agricultural commerce and they express in many aspects a rural lifestyle (such as in the housing typology). Household no. 45 also comes from a rural area and presents behaviours that are very similar to those of the peasants of the hinterland. All savings of the family are invested in improving the main economic activity, traditional trade, like by buying a motorcycle or more products to sell, for example.

typology that better represents this group of households is, instead, what has been here defined as “hybrid *mudzi*”.

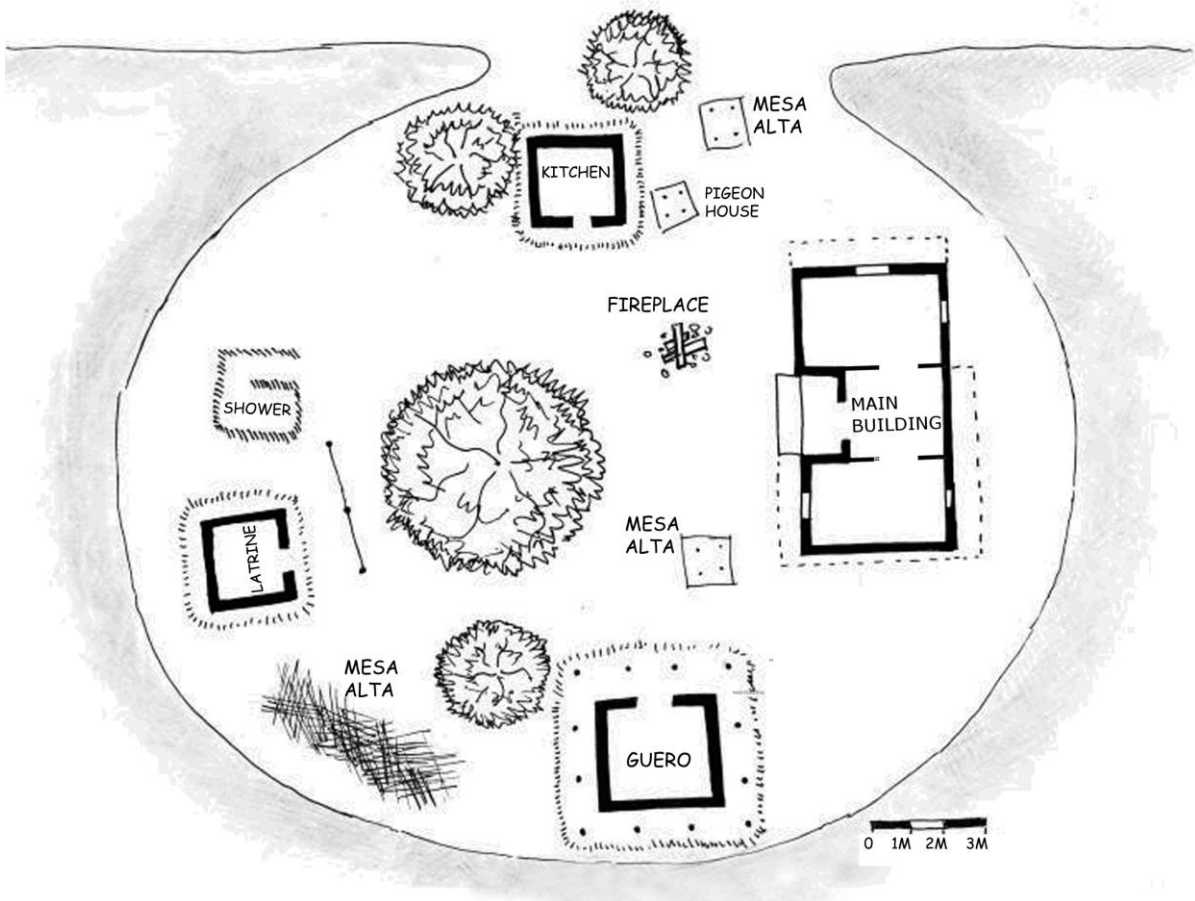


Figure 6.11. Graphic and photographic survey of a “hybrid *mudzi*” (household no. 11)

Among households belonging to typology 3, savings are mostly invested—as already seen—in the improvement of the housing conditions. This means the substitution of some of the traditional *palhotas* with more “modern” constructions. Modern buildings are made of

conventional materials (bricks, corrugated iron sheets, cement, mortar and plaster). The result is a hybrid *mudzi*, where the traditional spatial organization of the housing compound shows a mix of traditional and modern constructions. Generally only the main *palhota* is substituted with a modern building, as it is possible to see in the case of household no. 11. In this case, the head of the household affirms that he is satisfied of his choice, even if the construction of the new building was very expensive. The corrugated iron sheets alone costed 10,000 MTn (almost 250 euro)¹⁴. Moreover, the bricks were bought for 1 MTn each, and additional costs included transportation, cement mortar, and so on. Furthermore, skilled manpower was paid to build the house, since none of the householders knew the “modern” building techniques. Among the four surveyed hybrid *mudzi* of this typology, no one was provided with electric energy, but they all had a shower (or rather, a place to have a shower) and a latrine.

Finally, four households of this typology live in “conventional” houses, provided with electric energy and sanitary services. This “urban” housing typology will be described in the following section. Among the households living in conventional houses are those coming from the city of Beira (households no. 27 and 30), who would have had a hard time adapting to a *palhota*. Household no. 27 pays a rent of 700 MTn/month (18.5 euros/month) to live in a conventional house. He is saving up enough money to be able to buy it in the next future.

6.1.4 Typology 4: households depending on modern trade activities

- Composition and origins of the households

Only four of the interviewed households belong to this typology. In this class there is a prevalence of polygamy in the family structure. Three of the four heads of household have more than one wife and the number of family members ranges from seven up to sixteen. The most complex family structure found during the survey is that of the household no. 4, whose head, Cesare, is 63 years old, has four wives (of 45, 41, 38 and 25 years old), three daughters and five sons living in the same housing compound. While the eldest daughters left the compound after having married, the two eldest sons have built their own *gueros* next to the *palhotas* of their parents to host their wives and children. According to the patrilineal organization of the *sena* families, there is a high degree of pooling of income and expenditures among the head of the household and the families of the sons living in the same compound.

¹⁴ This is possible because a *chapa* with the dimension of 3.6x0.7 m costs 350 MTn (almost 10 euros). While it is easy to be put into place, so that it can be done by the householders themselves.

In this typology, two households moved from the refugee camps of Malawi to Sena in 1994. The other two households, instead, came from Chimoio and Maringue, outside the Province of Sofala, and affirm that they have settled in Sena for reasons related to their commercial activities. According to their opinions, these activities allow them and their families to have a good quality of life.

- Livelihood strategies

Households belonging to this typology are “modern traders” and form the socio-economic elite of the town. Their households have a much higher income compared to the others, which can exceed one million MTn/year (more than twenty-eight thousand and six hundred euro/year). “Modern trade” refers to a commercial activity based on a shop in the central market of Sena where industrial manufactured goods—generally bought in Beira and Quelimane—are resold. This is the case of households no. 40, 24 and 46. In this case a tax of 9.000 MTn/year (almost 240 euros/year) is paid to rent a *banca fixa* in the market. The category of “modern trade” also includes transactions carried out at a national scale, like in the case of the household no. 4. Cesar, the head of the household, buys oxen in the rural area of the district of Mutarara and collects them in a fenced-in area in the periphery of Sena until a reasonable number of heads is reached so that he can rent a truck to sell them for slaughter at the markets of Manica and Quelimane. To modern trade, then, some assets are associated, such as transportation means (motorcycles and trucks) and rented shops. Furthermore, another characteristic of this kind of trade is that it is not family-based; waged employees help in carrying on the commercial activities.

In no case trade is the only activity of the household and, even if producing a high income, it is always accompanied by other livelihood strategies. The two elder sons of Cesar, for example, contribute to the monetary income of the household with their salaries, obtained by working in the construction of the Sena Railway line. Furthermore, all families cultivate different hectares of land, even if only for self-consumption. The sexual division of labour is very stark in this typology, with the trade activity led by male members of the family and agricultural activities by women, with the help of sons, daughters and also of farm labourers. To satisfy the food provision for its sixteen members, for example, household no. 4 present a very complex organization of the agricultural activities, and the four wives and their fifteen children can be seen as a small “factory farm”. Each one of the four wives and of the two daughters-in-law has a *machamba pessoal* that is cultivated directly by them and their children. These *machambas* are located next to each other in the rural hinterland, “*atras do monte*”, opposite to the Zambezi river. They are very arid and only capable of producing cereals (corn, *mapira*) and beans. In addition, the head of the household also has its personal *machamba*, which is localized on the river bank of the Zambesi (“*na baixa*”). This is cultivated by seven waged peasants and produces *milho* and vegetables for family

consumption. Sometimes there is an overproduction of *milho* that is then commercialized. The household is planning to introduce a *machamba familiar* for the next year, where they will produce sesame to sell, as that has been demonstrated to be the most marketable product among the agricultural traders of the district of Caia. In household no. 40, only women have a personal *machamba* that is directly cultivated for self-consumption, which is done with the help of sons and waged peasants. Household no. 24 has also a *machamba familiar* on the river bank of the Zambesi (“*na baixa*”), but it didn’t produce anything in the last year because of the floods. An exception to the organization of family’s activities is represented by household no. 46, which has a monogamous structure and the wife of the head of the household does not cultivate the *machamba*; that work is left to waged peasants. In this typology, then, farm and non-farm activities are both widely present, while in no case *buscados* are to be found.

Household expenditures in this typology are complex. They aim first of all at satisfying basic and psychological needs. Extra food is bought to diversify the family diet, which is far more rich in this typology in comparison to the others and includes fish, meat and vegetables (the *carril*). Moreover, householders spend more money on clothes (“up to four *capulanas* a year for each wife”) and luxury products, such as radio and television. Male householders declare to use daily recreational services, like bars and sometimes ballrooms. Furthermore, other expenses are related to investments in the trade activity, or for paying for licenses and assets, like transportation means and waged workers (mainly farm labourers). Finally, thanks to their high monetary income, all households have savings, which are invested principally in the improvement of the housing conditions. Households no. 4 and 40 declare that all the saved money in the last years was used to build a new, “conventional” housing compound. The head of the household no. 40 affirms that as soon as he gains some extra money, it will be invested in buying “conventional” construction materials that are being stockpiled next to his *banca fixa* in the central market.

- Access to socio-cultural resources

The educational level of the head of the family reaches only the primary school (EP1 2/4; EP2 2/4). That of the women is much lower. The four wives of the head of the household no. 4 did not study at all and, in the other three households, wives have a lower educational level of that of their husbands and studied maximum up to the 4th class. This situation changes with family members that are under the age of twenty, both male and female. In general, a great deal of importance is given to school attendance and sons and daughters are encouraged to continue to study up to the secondary school. The higher secondary school attendance in this group is due in part to the higher monetary income that pays the tax for more family members, which corresponds to 131 MTn/year for the day shift (almost 3.5 euro/year) and 170 MTn/year for the night shift (almost 4.5 euros/year). A second reason is that the members

of these households are free to go to school during the whole year, since waged peasants are employed to work in the *machambas*. Sons and daughters help their mothers in the agricultural activity only when it is holiday time at school, and can therefore regularly attend the secondary school at *Mutarara*, two hours far away from Sena on foot.

In this typology, all households declare to prefer the hospital in case of illness. They refer to both the hospitals of Sena and Mutarara, as the latter is better equipped. Two households declare to be Catholics, while the other two did not answer.

In this typology, there is an extensive use of leisure and other urban facilities. Generally only men go to bars and ballrooms at night, and when asked about the use of recreational services by women, two of them answered that the family has a television. Finally, all households have as private transportation means more than one bicycle and a motorcycle, which is used also as an asset to support the commercial activity.

- Use of natural resources

Here, as in the previous typology, both natural resources and industrially manufactured goods are used. Natural resources are not collected freely in nature but are bought in the central market or from street traders. In half the cases firewood is still used as an energy source for cooking, while the other two households use only coal. As seen, the extensive cultivation of land is very important to supply food to the big polygamous families. The housing plot, however, has smaller dimensions, since it does not need to host the household's subsistence activities anymore, as it will be explored more deeply in relation to the housing typology. Moreover, all housing compounds are provided with electricity, while no one has direct access to drinkable water. Three families out of four pay a tax of 5 MTn/month to use a *bomba manual*, while only one household uses a traditional well as a water supply system. This choice is due to proximity criteria more than to economic reasons, as the *bomba manual* is too far away. Also in this typology, women are responsible for water provision (with a rotation system, generally including only the younger wives and the elder daughters).

- Housing typology

The class of modern traders expresses an aspiration to an urban lifestyle, and this is testified to by the housing typology spontaneously adopted by all households of this class: the "conventional house".

This time there is a radical change with respect to the traditional *mudzi*: a new, modern house is built, with a different organization of indoor and outdoor spaces, conventional housing materials, electric energy and so on. The "conventional house" of *Sena* is reminiscent of those that dominate the landscape of the peripheries of Beira and other major cities of Mozambique, in terms of shape and constructing materials.

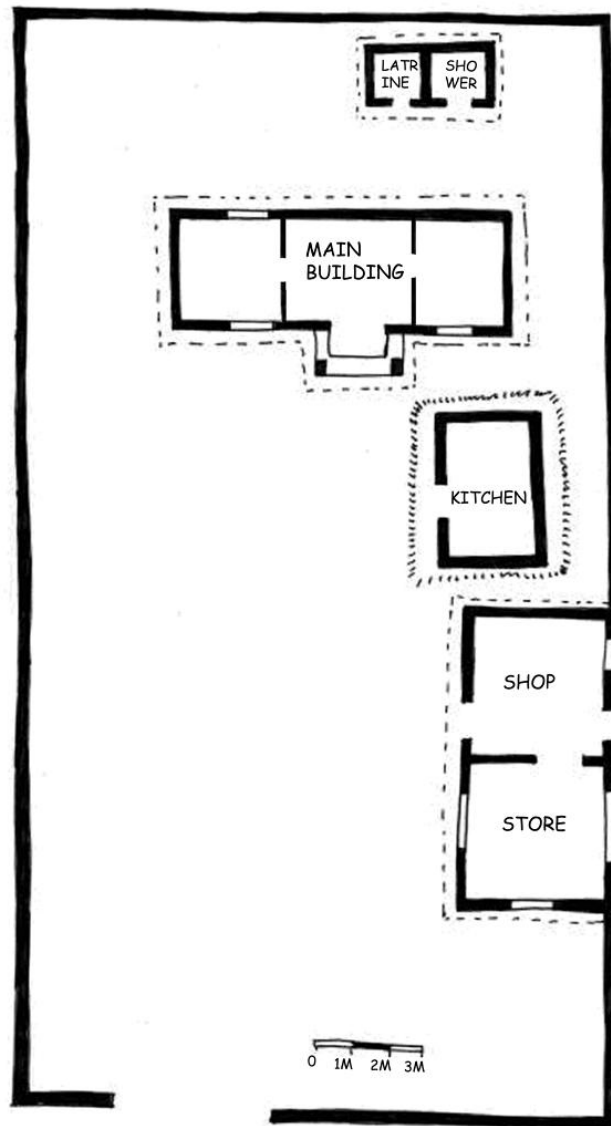


Figure 6.12. Graphic and photographic survey of a “conventional” housing compound (household no. 46)

The “conventional” housing typology consists generally of a main building and a kitchen. These two constructions are bigger than the traditional ones and the main building presents a spatial and functional articulation of the inner space. In this typology, in fact, *gueros* do not exist and, when children grow up, they have their own room (one for males and one for females) within their parents’ house. But even if a kitchen is built, households declare that they still prefer to cook open air. In the case of the households no. 24 and 46, a structure was also built to store the products that are resold in part in the central market of Sena and, in the case of no. 46, also in the housing compound.

The buildings are generally grouped perpendicularly, forming an “L” that creates a rectangular open space in the middle of the plot, which is much smaller than in the *mudzi*. Generally the plot is surrounded with a high, massive wall that has only one access to the main road in order to protect family properties and trade goods, that are often stored in the compound, from robberies. Only in two cases there is a tree in the compound, under which guests are received and most daily activities are done, while in the others there is no presence of vegetation. In these housing compounds there is always a latrine and a shower, generally located at the back of the main building, and at least all main buildings are provided with electricity.

An exception to this spatial organization is constituted by the housing compound no. 4. As already mentioned, all family savings of this household were invested in building a new, “conventional” house. Comparing the new compound with the old one, it is possible to obtain interesting indications on how the housing culture in Sena is changing. The big polygamous family is still living in the old traditional *mudzi*, that has the typical circular spatial organization, in which each wife has a *palhota* and different *gueros* where built to host the elder sons with their wives and children. The central outdoor space, protected by the shadow of big trees, is still the centre of householders’ daily activities. However, the family will soon move to the new compound, which has a completely different spatial organization. Each wife will still have her own house, but the arrangement of the constructions is very different. The house of the first wife is in line with the main road of Sena, and its entrance directly overlooks the road. The three houses of the other wives are lined up behind the main one, with the same orientation towards the road. The open space is extremely reduced and there are no walls or fences delimiting the private open space or protecting the privacy of the householders. In this housing model the indoor space is dominant, also because the family does not rely anymore on survival strategies—such as *buscados*—that rely on the outdoor space of the housing plot. Also, the function of receiving guests has been moved indoors, and the main building has a living room.



Figure 6.13. The old and the new housing compounds of household no. 4.

The house of the fourth wife is not finished yet and the whole family will not move into the new housing compound until the last house is equipped the same as all the others, including also a hi-fi¹⁵. Once the head of the household and his four wives and children will move to the new houses, the old compound will remain in the hands of the two married sons, who are now

¹⁵ This situation can be explained, again, through the Bergstrom's model (Bergstrom, 1994). According to this model of demand for wives and children by polygynous males, the production of surviving children requires two scarce inputs: wives and material resources. In other words, the expected number of surviving children that a woman produces depends on the amount of material resources that she is able to command. In a polygynous society, then, a man must consider the tradeoff between the expected number of wives and the amount of resources that he supplies to each wife. One of the conclusions of this model is that in a competitive polygynous marriage market, where all men seek to maximize the expected number of their offspring, each man will allocate equal material resources and the same level of support to each of his wives.

ready to be head of their own households and to enlarge their families.

Compared to the small, one-room *palhotas* of the *mudzi*, “conventional” buildings are bigger (7x4m, 7x6m) and present also a spatial and functional articulation of the inner space.



Figure 6.14. Main “conventional” house with a two pitches roof (housing compound no.40)



Figure 6.15. Main building and kitchen of the “conventional” housing compound no. 24

The roof can have two or three pitches with different inclinations, the latter reflecting the most-used housing model of the periphery of Beira. Furthermore, the buildings of this typology are made up of “conventional” building materials, mostly *tejol quemado* and *chapa*, that is bricks for the walls and corrugated iron sheets to cover the roof. These buildings, which are sometimes also plastered and colored, are not constructed by the family members anymore, as specialized manpower is needed. The costs for the realization of this housing typology are very high. For the main buildings alone, which has a dimension of 7x6 m, household no. 46 declared to have paid 45,000 MTn (1,185 euros). Household no. 24 affirms to have spent almost 60,000 MTn (1,580 euros) for the main building and the kitchen.

6.2 Spatial distribution of the households

Besides a socio-economic differentiation, the survey results also show an emerging spatial separation of the population within the town.

Households belonging to typology 4 and, in part, to typology 3 live in the central area of Sena, where the central market and all main urban services and infrastructures are located, including the electric distribution line. A planned settlement and a higher density of conventional houses characterize this area, also called “*bairro cimento*”.

Families belonging to the first two typologies, instead, live in urban areas that surround the central one and that reproduce the dispersed settlement pattern of the rural villages. These *bairros*, which constitute the majority of the built-up areas, almost completely lack urban services and infrastructures, and are very recent, dating back only to the end of the civil war. They show a great variety of land tenure systems: spontaneous settlement, registered occupation and resettlement areas.

Summarizing, two urban areas emerge which differ in terms of urban morphology, settlement pattern, housing typology, provision of services and infrastructures, and land tenure systems. Furthermore, from the survey in Sena it is possible to notice that housing typology is a reliable indicator of the socio-economic level of the families. Households belonging to typologies 1 and 2 live in traditional *mudzi*, those belonging to typology 3 transform their compounds into “hybrid *mudzi*”, and typology 4 moves towards “conventional” housing compounds in the centre of the town.

This trend is exemplified, as seen, by household no. 4. Apart from giving indications on the transformation of local housing culture in terms of housing typologies, this household gives also an idea of the settlement choices of the socio-economic elite of the town. Household no. 4, in fact, is leaving the old *mudzi*, located in a peripheral area, to move to another compound. The head of the household explained that the criteria for the selection of the new location was the proximity to the market and the “town centre” and the possibility of directly facing the main road of Sena.

The following map presents the spatial distribution of the households according to the housing typology.

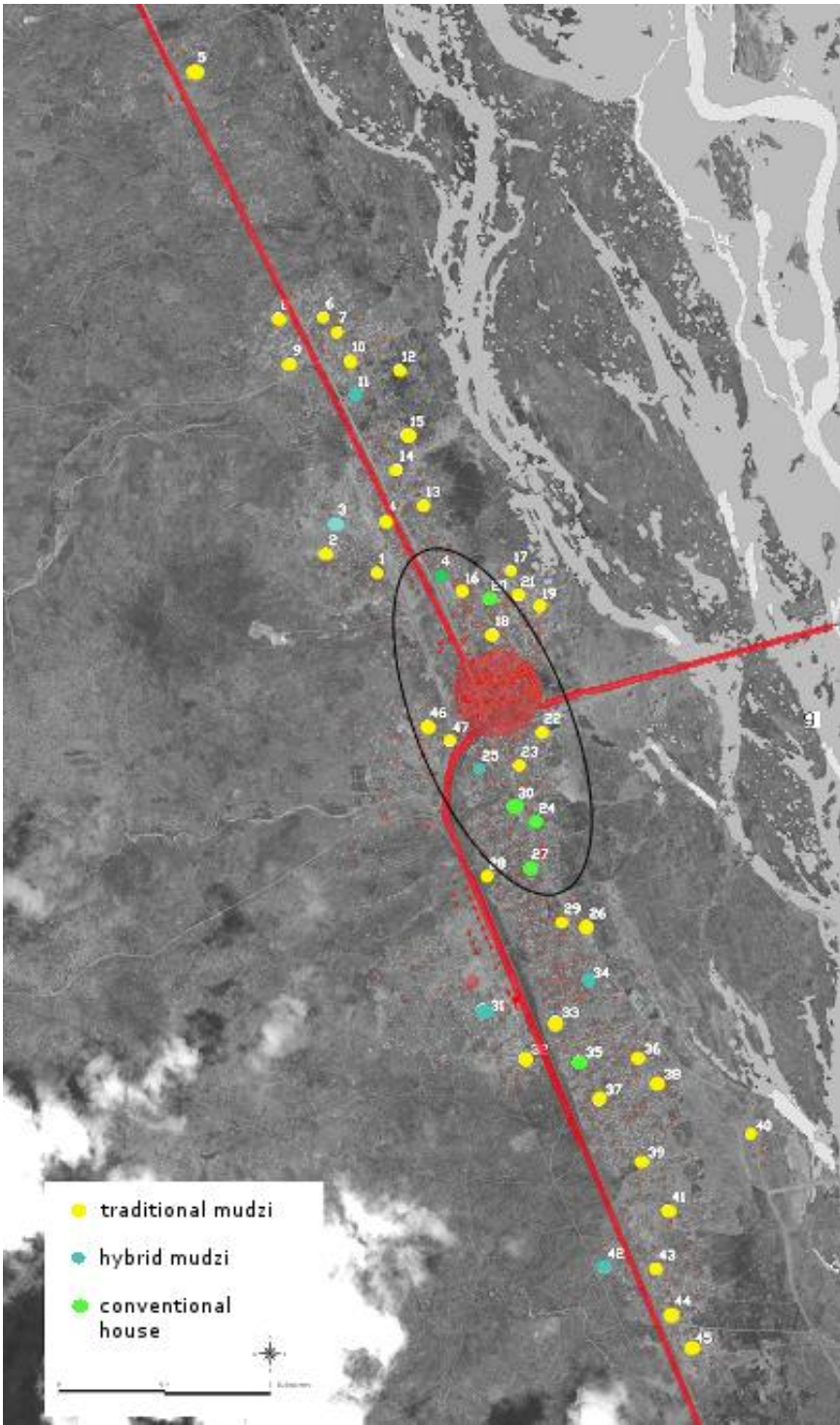


Figure 6.16. Map of the spatial distribution of the households by housing typology

Chapter 7

Understanding the rur-urbanization process

7.1 History and spatial evolution of the rural towns

The particular settlement pattern of Caia and Sena, that has been defined within this research as “rural town”, needs to be understood first of all in relation to the history of the territory and its population. It is, in fact, the product of a complex historical evolution that goes from the foundation of the first colonial centres, to the different urbanization waves of the peasant families in post-colonial times, up to the current “modernization” process that is deeply changing the socio-economic composition of the small towns, as well as their physical characteristics.

7.1.1 Foundation of the colonial centers

Caia and Sena were founded in different times and with different strategic objectives, that still define today their distinguishing characteristics: Caia, the administrative and political centre, and Sena, the market town.

The origins of Sena lie in the period when the Arabs controlled the coast and the Zambezi Valley¹. At the beginning of the 16th century, when the Portuguese colonists set up the first camp (*aldeia*), Sena was already a “*cidade de palhoças*” and a commercial base for almost twenty Muslim merchants.

The Portuguese started a bloody war to gain the monopoly on extraction and commercialization of gold in those territories (M. Newitt, 1995). Under the Portuguese, the town became the administrative centre of the “Rivers’ Region”, *região dos Rios*, that

¹ *Vila de Sena* was founded by the Arabs in 1313 a few kilometres from the west bank of the Zambezi River, with the name of *lhe por Siyuna*. Sena was part of a system of commercial bases and roads that Arabs built following the “golden route”, from the mines situated in the northern region in the realm of Mwenemutapa up to the Zambezi River. Until the 16th century, Sena was part of the Mwenemutapa kingdom, whose territory was occupied since the 4th century by peasants and shepherds. They were part of the distinguished *sena* culture, whose capital was in a territory that today is Zimbabwe. The Mwenemutapa kingdom, thanks to the presence of Arab traders, had important commercial relations with the Swahili system that extended from the Indian Ocean to the Middle-East to Asia.

extended from Chemba to Caia to Marromeu. At the end of the 16th Century, Sena was described as a town with considerable dimensions, where almost fifty Portuguese and 800 *cristãos* lived. The town was elevated to the rank of *vila* only on the 9th of May 1761, even if it had been considered an important urban centre for a long time. Sena, in fact, was a strategic node of the transportation network and a commercial base for gold and ivory already at that time, thanks to the presence of the railway line and the dona Ana bridge.

The history of *vila de Caia* has more recent origins. Caia began as a colonial settlement called *Vila Fontes* that in the 1950s consisted only of a sugar factory (*Companhia Açucareira Industrial Agrícola*), a train station, scattered colonial dwellings and an administrative building. Caia was founded on the 11th of September 1954 on the site where it lies still today—a small rise overlooking the floodplain—in order to relocate the activities of *Vila Fontes* that were developing too close to the river. Subsequently other public buildings, some residences, a market and a small airport were built near the administration building, which constituted a well-structured urban nucleus. Before, *Vila Fontes* and then Caia had essentially an administrative role and, only at a minor extent, also a commercial one. Only with the end of the Portuguese colonization, however, did Caia become the seat of the district administration, thus deposing Sena of its historical primacy.

Portuguese domination was based on aggressive expansionist politics² and on the marginalization of the African population. As evidence of this marginalization, which was also physical, the African population could not settle into towns. In accordance with a usual pattern of the colonial economy, the African population, which was involved both in plantation and factory work, continued to live in rural settlements spread along the river, where they also practiced subsistence agriculture (Wolpe, 1979).

After the independence war (1964-1975), the colonial domination and economy ended and, subsequently, the role that small centres like Sena and Caia held within it. Ten years of civil war brought about a rapid decline in the small towns' fortunes and led to the collapse of the colonial settlements. During this time, in fact, most of the population of the region moved to the nearby refugee camps organized in Malawi, next to the Mozambique border³, while the

² From the town of Sena, the Portuguese control extended over all social and—above all—economic activities of the current District of *Caia*, that had at that time numerous agro-industrial infrastructures, mainly directed at the production of cotton, corn, sesame, sugar and livestock at a large scale. Some of these agro-industries were the old “*Sociedade Agrícola de Magagade*”, the “*Instituto de Algodão de Moçambique*”, the *União Cooperativa do Vale do Zambeze (UNICOOP)* and “*The Sena Sugar Factory, Ltd.*”. Through these agro-industries, the exploitation of African population assumed even more brutal forms, through the imposition of taxes (*musso*) and forced labour. This interrupted the family production cycle, with the consequent decline of food production and increase of illnesses. Most of the population started migrating towards the city of Beira, that was founded in 1900 and required a stark inflow of manpower for the construction of the railway line, in the port activities, in light industry, or as housekeepers and prostitutes (Isaacman and Isaacman 1983; Isaacman and Hay 1997).

³ The civil war had devastating consequences for the Sofala province. This, in fact, was the centre of the activities of the RENAMO, whose leaders were mostly *shona* people. Therefore, most *aldeias comunais*, physical infrastructures, schools and sanitary centers were destroyed, to a certain extent with the silent

main infrastructures and buildings in the towns were almost destroyed.

- Physical characteristics of the colonial settlements

In spite of the above-described destructions, physical evidence of the colonial times still remains today in Caia and Sena.

In Caia, the old colonial nucleus, named *bairro da Vila*, is still the centre of the town today and it was built according to a well-defined spatial plan. This structured urban nucleus consisted of two main squares and a few large avenues, which were designed according to a regular, geometrical pattern and were accompanied by acacia trees. Along these main roads, plots lined up and the land use was a mix of administrative functions and the residential buildings of the colonists, mainly Portuguese administrators. Some of these colonial buildings remain undamaged up to today. The urban area was also equipped with an aqueduct, that today functions only in part. This planned colonial nucleus today is easily recognizable, since the successive urban expansion followed more traditional settlement patterns.



Figure 7.1. The colonial settlement pattern of *Bairro da Vila* in Caia

consensus of traditional leaders, who saw their authority reduced by the FRELIMO reforms after independence, and of part of the population, particularly those unsatisfied with the *aldeias comunais* program (Orlowski 2001; Florêncio 2005). Because of devastations, plundering and military operations, the majority of the population was forced to leave the rural areas and to take refuge in the *vilas rurale*, and from there went to the refugee camps in Malawi.

In Sena, only a few buildings remain to testify the colonial past of the town. The “*Pedra de Sena*” was the first fortress built by Francisco Barreto, the conqueror of the town, and is dedicated to *São Marçal*. Moreover, the Dona Ana bridge, the railway line and some buildings related to it (*patio ferroviario*) and seated in the *bairro CFM* testify the prevalent role of commercial and infrastructural node of the town, the most important part of which was the complex of railway constructions.

From the first colonial settlements it is possible to deduce the criteria for the selection of the foundation sites of the two towns: the proximity to the Zambezi River, with its fertile banks and the possibility of river commerce; elevation with respect to the floodplain; and easily accessible water sources⁴.

7.1.2 Peasants settling into town in post-colonial times

In colonial times, as already mentioned, the African population did not live within the towns, but rather dispersed in rural areas. The towns were repopulated with indigenous inhabitants in three successive steps: after the War of Independence, at the end of the Civil War, and following the Zambezi Floods.

After the Independence (1975), the administrative subdivisions into districts were established and Caia was nominated as the seat of the district administration. The FRELIMO government introduced immediate measures such as the abolition of traditional authorities, nationalization of industries and private *machambas*, and—above all—the concentration of the rural population into “*aldeias comunais*”. This policy aimed to concentrate the dispersed rural population into a few urban centers, provided with a local administration and basic services, in order to improve their educational and sanitary conditions. Therefore, with independence, the African population settled down in Caia and Sena for the first time. However, most of the population of the Caia district didn’t join the *aldeias comunais* program, because the objectives established by the government for the agricultural production were too strict. The population, then, remained in proximity to their *machambas familiares* and preferred the negligence of the State towards the rural dispersed population to moving to the *aldeias*, where services and infrastructures were starting to be offered (Orlowski 2001; Florêncio 2005).

Afterwards, the civil war produced the destruction of the main infrastructures of the district and its depopulation, as seen. At the end of the civil war, the repopulation of Caia and Sena started slowly, because of the destruction of many buildings and infrastructures and the collocation of mines in the immediate surroundings. Resettlement camps were organized in

⁴ The geological situation of the Caia district is not favorable for the production of ground water. Only in the Zambezi Valley is there the possibility of finding water tables with a better quality and a major water flow. The presence of water is not a problem in Caia, because it is situated in an area characterized by a superficial water table (flow: Q=10-50 m³/h). It allows the water supply to be met through wells and traditional *furos*.

the two towns in order to host refugees returning from their exile in Malawi. These camps produced a considerable increase in population and a higher density of the built-up area compared to the period before the war. Furthermore, as seen in the description of the household typologies in Sena in Chapter 6, most of the population hosted in temporary camps decided to establish themselves permanently in the towns.

Finally, the most impressive urbanization wave of Caia and Sena, as seen in Section 5.2.2, was due to the recent Zambezi floods, which forced the rural population that lived in the flooded plain to move towards the safer terraces, where the towns are situated. Resettlement programmes have been implemented in the small towns and, also in this case, temporary camps soon transformed into permanent settlements, producing another considerable expansion of the built-up area.

In brief, the urbanization of Caia and Sena was made by peasant families who were forced to leave the rural areas by political and environmental factors and who kept relying on agriculture even after they had moved into town. The vast majority of these peasant families continued to depend on agriculture for their livelihoods. This continuity of agricultural practice in the urban context was possible also thanks to the persistence of traditional land allocation mechanisms, which were formally recognized in 1997 by the Mozambican “*Lei da Terra*”. This law allows the *regulo*, the tribal leader with traditional authority, to distribute land among peasant families who settle in his *regulado*, the *regulo*'s jurisdiction area. This mechanism for land distribution, which applies to both agricultural and housing plots, has also influenced how people have settled in the town. Peasants in fact were clustered in *bairros* (neighbourhoods) largely on the basis of their previous membership to a *regulado*. The *bairros* grew up around the old colonial settlement, into which the authority of the *regulos* did not extend. The origin of the rural characteristics of this small town is found in this process. Urban characteristics, instead, were for many years limited to the presence of a few administrative services, a school and a hospital in Caia, while Sena acted as market for the agricultural production of the rural hinterland and for urban-rural exchanges.

- Spatial drivers and characteristics of the expansion of the built-up areas

In this period, the urban expansion, both spontaneous and that planned through resettlement camps, followed proximity criteria with respect to some elements: the pre-existing colonial nucleus, agricultural land (*machambas*), water sources and main road axis. Another spatial driver was the altitude of the territory, considered so as to avoid risks related to the Zambezi floods.

In Caia, the combination of all these elements determined a “crescent-shaped” progressive expansion of the settlement, whose barycentre is the colonial urban nucleus, the *bairro da Vila*, where main infrastructures and services are situated. This “crescent-shaped” settlement follows the morphology of the territory, which forms a natural terrace that overlooks the

Zambezi Valley. Together with these natural constraints, the main road axis, that is the national road EN1 and the regional ER223, are also spatial drivers along which the town has developed. The first urbanization wave corresponded to the formation of the oldest *bairros*: Nhampunga, Malocotera, Nhamomba and Chirimba 1. With the second wave, peasants settled in the *bairros* Chirimba 2 and Sombreiro. With resettlement programs, the *bairros* Amilcar Cabral and Daf were founded.

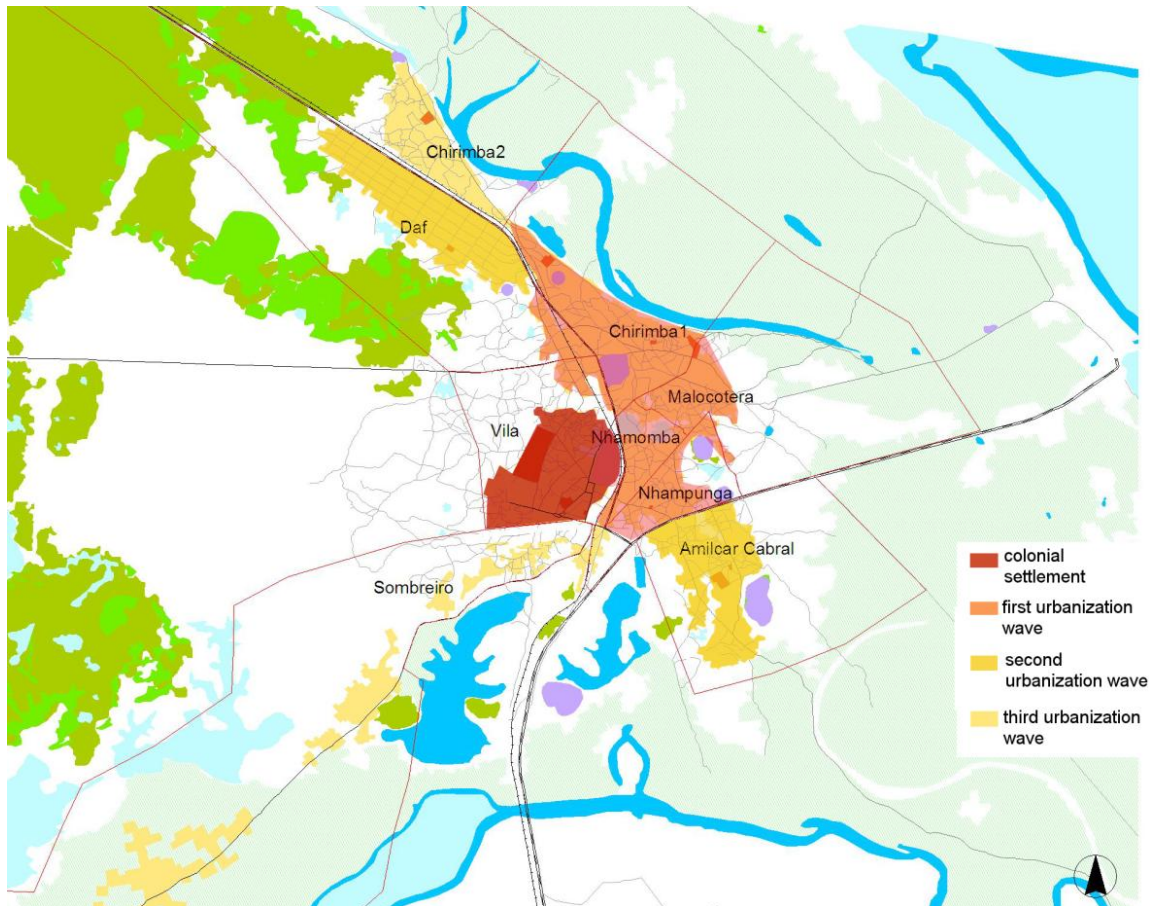


Figure 7.2. *Bairros* in Caia

With the same spatial drivers, the town of Sena has developed according to an extremely regular and linear urban form. Around the old Portuguese nucleus and the *patio ferroviario*, the *bairro* CFM was settled in 1988. The following urbanization waves sharply increased the population and extended the town progressively towards the north (*bairro 25 de Setembro*⁵) and the south (*bairros* Nhamioio and Chupanga⁶), up to the more recent expansion towards the *bairro* of Tchola.

⁵ Two resettlement camps, in 1993 and 2001.

⁶ *Chupanga*: resettlement camp of the World Food Program in 1993; resettlement camp after the Zambezi flood in 1997. *Nhamioio*: resettlement camp in 1993. Recently, households who live in the areas of the town that are under the risk of flood are resettled in *Nhamioio*.

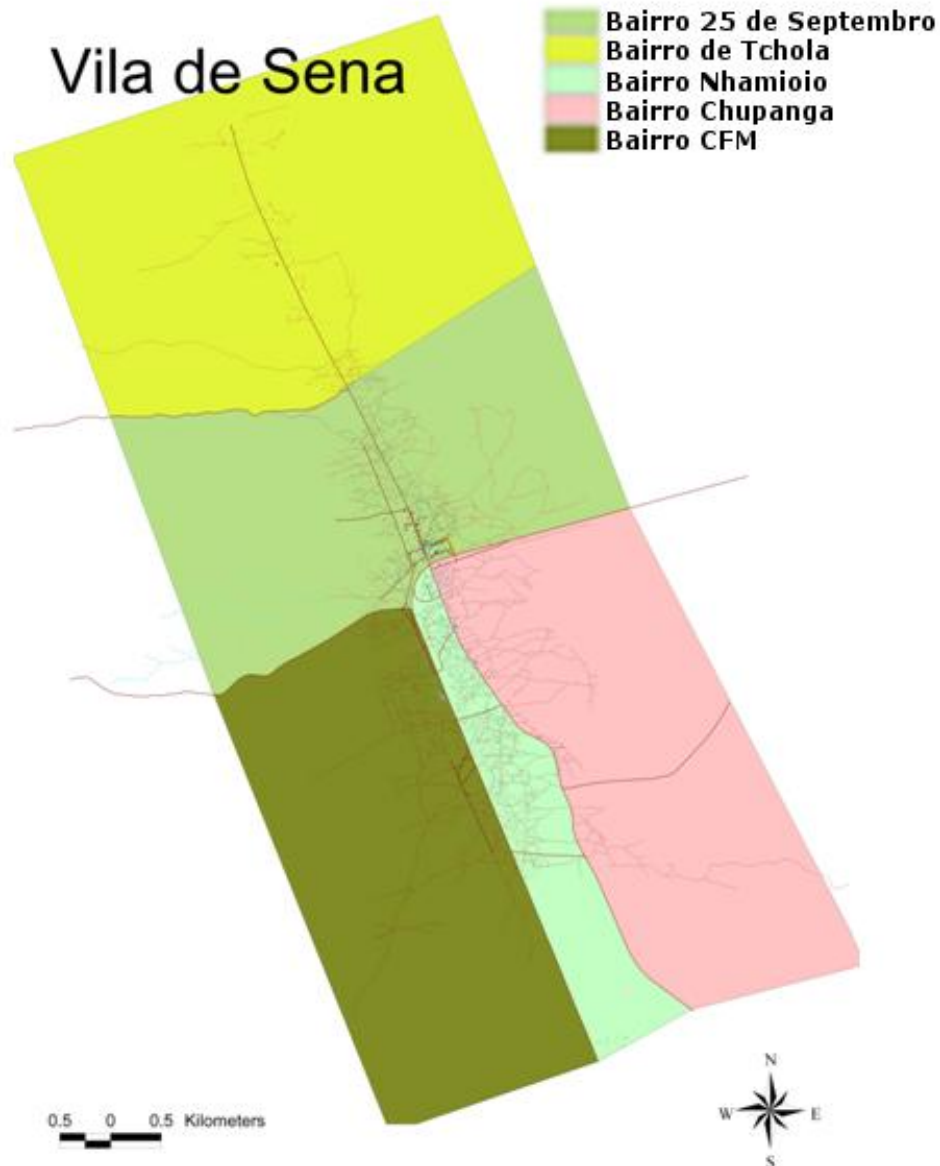


Figure 7.3. *Bairros* in Sena (from: PEU)

The reasons for the linear development of Sena are to be found first of all in the hydrogeological structure of the territory. Differently than in Caia, the presence of water is a big constraint on the settlement activity, since the access to ground water through wells and *furos* is easy only along the bank of the Zambezi River. The second reason is to be found in the commercial nature of the town, that develops according to the main road (ER213) and has the central market has its barycentre. This latter is located at the crossroad of two main transport infrastructures: the road ER233 and the railway line, which turns towards the Dona Ana bridge. The proximity to the fertile lands of the “*baixa*”, the riverbanks, are instead an advantage only for a few families, since the majority of the population (as seen in Chapter 6) cultivates the *machambas* in the hinterland areas, opposite to the river.

In Caia and Sena, spontaneous settlements maintained the traditional spatial organization that is typical of the rural hinterland of the district, as well as vernacular housing typologies, building technologies and—as seen—traditional land allocation mechanisms. Even if there was no formal “spatial plan” for these settlements, that use to be defined “informal” by the district administration, their organization was not “casual” but instead followed traditional settlement principles that are deep-rooted among *sena* people. Householders continued building *palhotas* by themselves and keeping their traditional subsistence activities within the “urban” housing compounds. Only the dimensions of the circular plots were smaller with respect to the rural areas, due to the higher population density in towns. Furthermore, even in the resettlement camps, a more rigid spatial organization of the plots, generally inscribed within a geometric grid, was overlaid by vernacular housing typologies and adapted to the traditional subsistence activities of the population.

7.1.3 Contemporary rur-urbanization

Up to the beginning of this century, the population growth of the towns was due—as said—almost exclusively to peasant families forced to abandon the hinterland areas. Today it is still difficult to perceive a real difference between the lifestyle of the majority of the inhabitants of these towns and that of the rural population of the district. As described in Chapter 6, the population continues relying principally on agricultural activities and reflecting traditional cultural values, including vernacular settlement patterns and housing typologies.

Nevertheless, since the beginning of this century relevant processes are involving the district and are determining deep changes in the socio-economic composition of its small towns, as well as in their spatial organization. As a consequence of the modernization process taking place in Caia and Sena and described in Chapter 5, there has been a proliferation of non-farm activities and new lifestyles and consumption behaviours have been brought in by many people coming from outside. Moreover, the purchasing power of part of the population has increased as a consequence of the local workforce being increasingly involved in the construction sector and commerce. Furthermore, administrative “deconcentration” has meant that important decisions related to the living conditions of the population are now made *in loco*. The increasing administrative role of the small towns, then, has led also to the improvement of urban infrastructures and services. A cultural change is also to be noticed, such as higher school attendance and fruition of hospital services, which are gradually replacing the *curanderos*—the traditional practitioners. These changes are expected to increase as the activation of the railway line will bring greater mobility of goods, people and ideas.

Together with the socio-economic composition of the population, the physical structure of the towns is also being transformed. As it will be analysed in the following section, the result

of this ongoing rur-urbanization process is a hybrid settlement pattern, where urban and rural characteristics melt together.

7.2 Key topics and major trends to describe rur-urbanization

The rural town is a particular settlement pattern in which the socio-economic organization of the population, local decision-making processes, patterns of use of natural resources and—last but not least—the physical structure of the town reflects a complex mixture between urban and rural characteristics. Traditional modes of production aimed at the subsistence of the household, for example, coexist with more modern ones, led with capitalist criteria. All the population, then, makes extensive use of natural resources and the survival of most of the households depends strictly on the free access to them, but at the same time industrially manufactured goods are being introduced, as well as more urban consumption models. This is testified to also by the transformation of local housing culture, from the vernacular *mudzi*—that is still, however, the most diffused typology—to the “conventional housing” model. Finally, modern institutions and traditional authorities coexist and administrate the same territory with almost the same functions, thus leading to complex local governance mechanisms.

These arguments are presented, in the following sections, in the form of four key topics that describe the main features of the analysed rural towns and major trends related to the rur-urbanization process. Particular attention has been paid to those trends that have negative impacts on the physical structure of the towns and that should be handled within the spatial planning activity.

7.2.1 Coexistence of “traditional/subsistence” and “modern/capitalist” modes of production

The socio-economic composition of the dynamic small towns of the Caia district is not homogeneous at all, as testified to by the results of the household survey led in *vila de Sena* (see Chapter 6).

It is important, however, to stress a relevant characteristic that is common to all social groups in Caia and Sena, which is livelihood diversification. Differentiating economic activities seems to be the most effective survival strategy in a context characterized by high instability (political, socio-economic, environmental) and no assurances. First of all, the population is entirely linked to agriculture. All households, in fact, have a *machamba* (family farm): most of them depend strictly on subsistence agriculture; a few of them integrate it with the income coming from non-farm activities, and even the small percent of the households, who are provided of a income that is too high to justify the self-production of food, continues working the *machamba*. Such a strong relation to the earth has not only economic reasons, but it

testifies to the inertia of the rural culture and of its deep ancestral values. What's more, it governs the social organization of the population. Nevertheless, the agricultural activity, whether only directed towards self-consumption or also to commerce, is always accompanied by other non-farm activities.

In spite of this common "rural" base, the modernization process involving the rural towns is producing also an increasing socio-economic differentiation of the population of Caia and Sena, that—summarizing—could be divided into two main socio-economic groups: the subsistence one and the capitalist one. These socio-economic groups could be respectively related to the "peasant mode of production" and to the "capitalist mode of production", using two definitions proposed by McGee (1974). Almost 70%⁷ of the interviewed households have a "subsistence" economy based principally on agriculture and integrated with odd jobs (*buscados*) or low-income non-farm activities. Within the subsistence sector, characterized by a "domestic mode of production", no savings can be produced and all the monetary income is used principally for the satisfaction of basic needs (such as food supply, clothes and education). This part of the population is very vulnerable to fluctuations of income along the year and cannot invest in productive assets. These first two social groups depend strictly to the direct and free access to natural resources for their survival. 30% of the households instead belong to the "capitalist sector", in which non-farm middle or high-income activities allow profits, savings and investments. These households invest their savings principally in the improvement of their housing and living conditions, also because the absence of a banking system (the first *caixa rural* opened only one year ago in Sena) makes it safer to invest big sums of money in the construction sector. Another part of the savings is generally used to accumulate assets (for example transport means, more farm labourer to employ, more goods to trade, and so on) and, through this, to produce more income.

Even if a division of the population into two main economic sectors is proposed, nevertheless the overlapping of the capitalist economy with the pre-existing subsistence economic system generates several possible combinations. From this mixture, the characteristics of both components emerge with uncertain boundaries (Amin, 1976). Traditional and modern modes of production, in fact, often coexist within the same household. In most cases, in fact, it is possible to find agricultural family-based activities, directed principally towards subsistence, and at the same time livelihood diversification and non-farm activities that produce a monetary income and allow savings and investments in production assets. In the description of these activities, the categories "traditional/modern" rather than "formal/informal" have been used. In the rural towns, in fact, subsistence urban activities (agriculture, handicraft and street trade) cannot be considered to be illegal or residual practices produced by the surplus of urban population. Rather, they represent a structural component of the urban economy that

⁷ This percentage has been confirmed both by the qualitative household survey in Sena (see Chapter 6) and by the quantitative household survey in Caia (Governo do Distrito de Caia, 2006).

differs from modern economy because of its traditional characteristics, such as the “domestic mode of production” (Diamantini and Patassini, 1996).

Livelihood diversification is allowed by the “hybrid” settlement pattern of the rural town. Land for agriculture is available for all households and *machambas* are situated within the built-up area or in its immediate surroundings. At the same time, the connections with national and international urban networks and trade flows as well as the presence of basic infrastructures and services and of other purely “urban” characteristics allow the development of many different economic activities and employments in the trade and construction sectors, in public administration, international cooperation or even through *buscados*.

- Risk: socio-spatial separation of the population

The above-described socio-economic differentiation in the rural towns is reflecting also in an emerging socio-spatial separation of the population. We have already analyzed, in Section 6.2, this phenomenon in relation to Sena.

Also in Caia, through a household survey led on a wider sample of the population (*Governo do Distrito de Caia, 2006*), it was possible to analyze how households belonging to the capitalist sector concentrate in the central area of the town, *bairro da Vila*, and in its immediate surroundings. It is in this old part of the town, constructed under the Portuguese colonization, that most urban services and infrastructures are located, including the aqueduct and the electric distribution network. Disadvantages, then, deriving from the smaller size of the housing plot and from paying taxes for land occupation and building licenses, are compensated for by the improvement of the housing and living conditions, including the easier access to urban services and infrastructures. In *bairro da Vila*, a denser aggregation of conventional houses is to be noticed, with respect to other *bairros* of the town (58% traditional and hybrid *mudzi*; 48% conventional houses).



Figure 7.4. Views of *Bairro da Vila*, Caia

Households belonging to the subsistence sector, instead, live mostly in the peripheral areas of the town, which bring to mind to the traditional settlement pattern of the rural villages. These *bairros* constitute the majority of the built-up area and completely lack urban services and infrastructures, with the only exception of the *escolinhas* (preschools) that are distributed in each *bairro*. As seen in previous section, these *bairros* are very recent, the oldest dating back to the end of the civil war. In these areas, the control of land occupation is weaker and an extensive use of land for the housing plot is allowed to host also family's subsistence activities. Land tenure systems vary from informal settlement, to legalized spontaneous occupation, to resettlement camps.



Figure 7.5. Planned settlement pattern, *bairro da Vila*, Caia



Figure 7.6. Spontaneous settlement pattern, *bairro Nhamomba*, Caia



Figure 7.7. Spontaneous settlement pattern, *bairro Chirimba 2*, Caia.



Figure 7.8. Resettlement camp, *bairro Daf*, Caia.

The morphology of the *bairros* varies too. Nhampunga, Malocotera, Nhamomba and Chirimba 1, the first informal settlements of Caia, have a higher population density (600-1204 hab/km²), similar to that of *bairro da Vila*, and the urban morphology has spontaneously evolved according to a mix of traditional and conventional housing typologies. Chirimba 2 has a lower population density (479 hab/km²) and bigger housing plots (1454 m², while those of Chirimba 1 are 664 m²). The urban grid is therefore wider, with lots of vacant land within. The urban morphology is characterized by a prevalent traditional settlement with vernacular housing typologies and building technologies that represent almost 92.2% of the total. The *bairro de Sombrero* presents a far thinner population density (234 hab/km²) and it has developed spontaneously in the south of the town along the banks of the Zangue River and the road that connects to the rural hinterland. The inhabitants of Sombrero are strongly linked to a rural culture, a fact which is underlined by their choice of location⁸ and by the morphology of the settlement, which is absolutely traditional and has a higher percent of vernacular compounds (93.3%).



Figure 7.9. Conventional houses under construction around *bairro da vila*, Caia.

⁸ According to the POTU, the newly urbanized population should have settled down in an urban expansion area next to *bairro da Vila*. However, the population claimed that the *machambas* were too distant and preferred rather their current location in Sombrero, nearer to the *machambas* but far more distant from the town centre and the urban services. This localization was established after a participatory decision-making process that involved the population, the administration of the *Caia district* and local technicians of the Spatial Planning Office.

A separate discussion is needed for the *bairros* that were born as resettlement camps: Amilcar Cabral and DAF. These two *bairros*, differently to the others, were planned. At the beginning a regular grid was established made of orthogonal roads and rectangular housing plots of the dimensions of 30x40 m, each provided with just one building made of a mix of traditional and conventional technologies. Generally the walls were made of *pauipique* and *caniço* techniques and the roof was covered by corrugated iron sheets. Within this planned grid, housing compounds have evolved overtime according to a traditional circular organization and have been personalized by their inhabitants on the basis of their lifestyles. The higher population density of Amilcar Cabral (731 hab/km²) with respect to DAF (456 hab/km²) is probably due to the older occupation of the first one, as well as its best position with respect to the *machambas*.



Figure 7.10. Mix of traditional *mudzi* and conventional houses in Sena, at the border between *bairro 25 de Setembro* and *bairro cimento*

The above-described trend of socio-spatial separation of the population has been constantly increasing in the last years as the socio-economic elite of the towns (mainly public administrators and traders) and the seats of the NGOs and international aid organizations keep concentrating in this central area. This ongoing trend is particularly risky in a context characterized by the “urbanization of poverty”. If the development of the local economy remains much slower than the demographic growth, the newly urbanized population could experience the same process of urban dualism and “*favelization*” observed in major urban centres (see Sections 1.1.1 and 1.1.2).



Figure 7.11. *Bairro 25 de Setembro, Sena*

Furthermore, one important strength of Mozambican rural towns is the “equitable land owning structure” that is generally considered an important precondition for the sustainable development of the small towns (Hardoy and Satterthwaite, 1987). The *Lei da terra* (1997) affirms that land property exclusively belongs to the State and recognizes to each household the right to have a *machamba* and a housing plot. In the rural towns this is allowed by the availability of land for urban expansion, both for agriculture and for housing. Anyway, this favorable condition could change in the next years, as the—recently introduced—land privatization process increases, which up to now had only residual dimensions in the rural towns. Tracing out what generally happens when a market for land and housing develops within a town, it is easily presumable that the already-emerging socio-spatial separation of the population will increase, at the risk of urban dualism and the *favelization* of the poor. An opportunity to avoid the negative consequences of the above-described trends, has been recently given by Mozambican government with the approval of a new legislation for territorial management (*Lei de Ordenamento Territorial*, 2007; *Regulamento de Ordenamento Territorial*, 2008). This provides a legal framework to the planning activity also in the rural towns. Even if it is too early to understand if these laws will have positive effects on the spatial organization of the rural towns and their surrounding areas, they testify an important cultural change since urban planning and management are recognized to be strategic issues and are regulated through specific planning instruments.

7.2.2 Dependence on natural resources

Another specific feature of the rural town is that most of its population strictly depends on natural resources. This is particularly true for households belonging to the subsistence sector. Almost 70% of the families in Sena are provided with a monetary income that is too low even to satisfy the food supply. Anyway, they are able to survive because of their free access to water, land for agriculture and cattle breeding, firewood, healing plants, and construction materials. Furthermore, most odd jobs consist of selling materials that are collected directly in the surrounding area by the occasional seller. The result is a symbiosis between the town and the natural elements surrounding the built-up area. It is possible, then, to underline the “multifunctionality” of the rural-town environment (Millennium Ecosystem Assessment, 2007; Cairol et al., 2009; Priemus et al., 2004), which, together with the recreational and ecological functions, has also the productive one.



Figure 7.12. *Machambas* in Caia

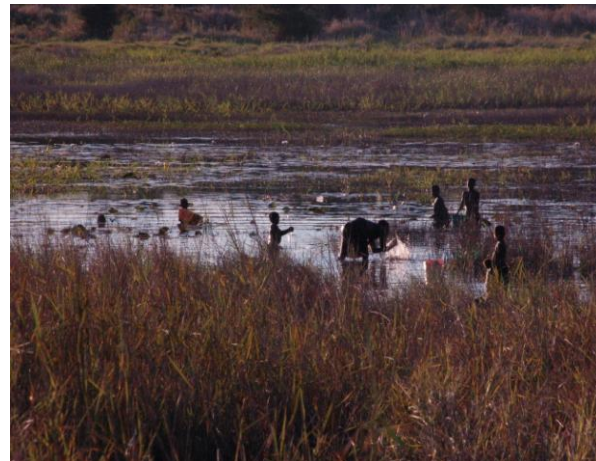


Figure 7.13. Humid areas in Sena

The rural town has grown in symbiosis with the natural resources present on the territory, by adapting to them and including them rather than irrevocably altering the environment as has happened in major urban centres. The morphology of the territory has generally been respected: trees accompany the paths of the streets and public areas; vegetation flourishes in vacant lands, which are interspersed with built-up areas, and vegetation is commonly used to describe property boundaries, to make shadow and to provide fruit. Natural resources are widely present both within the rural town (water sources, wet lands, fruit trees, vegetation) and in its immediate surroundings (agricultural land, forests, rivers, lagoons), having—at least potentially—the function of providing ecological corridors and of protecting biodiversity. These are ecological functions that have generally been lost in major urban centres.

- Risk: over-exploitation of natural resources.

As stated in the article 8 of the “Convention on Biological Diversity” approved in Rio de Janeiro in 1992 (United Nations’ Conference on Environment and Development), the involvement of local communities in natural resources management is a crucial and basic issue. “Each Contracting Party shall (...) respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity”. The involvement and the leading role of local communities in managing natural resources is surely an important issue also in African rural towns. Anyway, the growing anthropic pressure—determined by rapid urbanization—and the uncontrolled use of natural resources is leading to serious environmental damages. Forest conditions seem to be particularly endangered in the small towns of the Caia district. Through the elaboration of Landsat scenes of Caia related to the years 1991, 1999, 2000 and 2004, it was possible to reproduce the evolution of the deforestation phenomenon. In those thirteen years, the relevant increase in population due to the resettlement of the peasant families from the floodplain produced a strong pressure on the environment. In particular, the demand for wood, for energy production and as construction material, increased considerably. As a consequence, a significant deforestation has been detected that continues today and is leading to a massive loss of biodiversity and other forest-related ecosystem services, such as soil stabilization and watershed protection. Furthermore, the distance between the built area and the forest increases constantly, and people need to spend more and more hours of the day collecting wood.

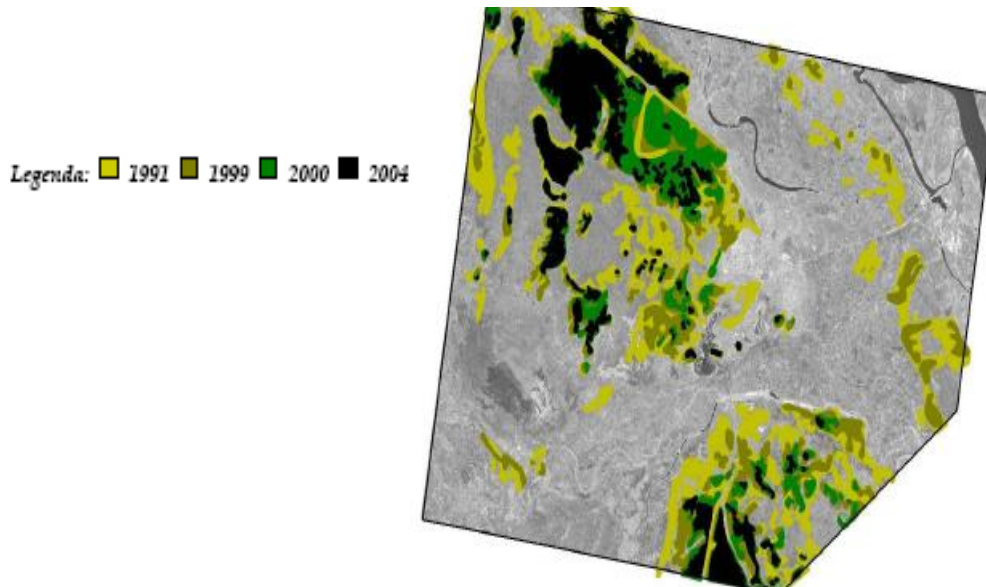


Figure 7.14. Deforestation in *vila de Caia* from 1991 to 2004 (from:POTU).

Furthermore, from the assessment of the water supply conditions in Caia⁹, the access to water is also critical. Water supply systems, in fact, are not sufficient to guarantee the easy access of all the population to potable water, since it is sometimes necessary to wait hours to fill a tank. Moreover, water testing shows contaminated results in most cases, since traditional wells, “improved” traditional wells and water pumps do not respond to minimum hygienic requirements. In both Caia and Sena, there is an aqueduct that was built during the colonial time. In Caia, it is in very bad conditions and serves only 44 families of the *bairro da Vila* while the one in Sena does not even function.

Agricultural land is another critical issue. Even if it is true, in fact, that *machambas* are available for all households in the analysed rural towns and that the *Lei da Terra* guarantees the free access to them, it must be also underlined that they are sometimes too far away. The household survey in Sena reports that distances between the housing plot and the *machamba* can reach 2-3 hours on foot. This long distance represents a problem for productivity, since the majority of the population is not provided with any means of transportation (apart from one or two bicycles for the whole family) and the incidence of illnesses (i.e. AIDS) is high¹⁰. Most householders get around this problem by moving to the *machamba* during agricultural seasonal peaks, a phenomenon known as “double housing”. This means that for a part of the year they cannot enjoy the advantages of living in a town, as for example children do not go to school.

The risk of the above-presented situation is that the use of water, wood and agricultural land surpasses the regeneration capacity of forests, water sources and soil. The degradation of natural resources results in the environmental quality being reduced and, consequently, the life conditions of the poor population, whose survival strategies depend strictly on the direct and free use of natural resources, also worsen. Rapid urbanization is not the only cause of environmental degradation. The introduction of urban lifestyles, which means of urban modes of production and consumption, is also altering the traditional balance between the population and the environment. Urban management actions are now required that traditionally did not exist and are difficult to introduce. Industrial manufactured goods, for example, have diffused for a few years, but at the moment there is no waste management system. Waste disposal is managed at household level, generally by combustion or by dumping in the housing plot or by throwing garbage in the streets or in vacant lands, which are filled with hundreds of plastic bags. Also, the introduction of the hospital has not been accompanied by planning actions for medical waste disposal, which is currently burned in an empty swimming pool within the hospital area, in front of the cholera patients’ confinement building.

⁹ “*Estudo de avaliação das condições de Abastecimento Hídrico da Vila de Caia*”, contained in the POTU.

¹⁰ In the PEDD (Distrito de Caia, 2006, p.49) an HIV/AIDS positivity rate of 20% is reported, one of the highest in Mozambique and in the world.

An opportunity to address the natural resources' management within the rural towns has been recently given by the creation of a new Ministry for the coordination of policies related to the environment (*MICOA—Ministério para a Coordenação da Acção Ambiental*) and by the adoption of new legislation and planning instruments, which include also environmental management (*Lei de Ordenamento Territorial, 2007; Regulamento de Ordenamento Territorial, 2008*). Anyway, the new legislation could be inadequate to face one major threat to the sustainable management of the rural towns: the “land grab”. This term is used to describe the growing acquisitions or long-term leases of large portions of agricultural land in developing countries by private investors. Studies on investment-related land transactions in Africa show that allocations to foreign investors have increased consistently, reaching the number of over 1.4 million ha in Mozambique, Ethiopia, Ghana, Madagascar and Mali only between 2004 to early 2009 (Cotula et al., 2009). This trend will increase, as the demand for agricultural land is expected to grow in the immediate future. Actually, many food importing countries, as for example those of the Arab Region or East-Asian countries, are investing in land and food production in Africa. Moreover, as a consequence of the “biofuels boom” of the last few years, many multinational companies are trying to secure land for future cultivations oriented at the production of energy. Africa and South America are the regions where 80% of the world's reserve agricultural land is located, and is where the interest of the investors will be concentrated. In Mozambique, from 1997 to mid-2005 over 3 million hectares were leased to the investors (IIED, 2006). Speaking at the opening of “Conclave on India/Africa Project Partnership 2007” in Maputo, Mozambique's Minister of Energy, Salvador Namburete, said that only 9% of the country's arable land is currently in use and that a further 41.2 million ha of land are suitable for agriculture. Even if land acquisitions are fostered by Mozambican government, which explicitly aims to attracting foreign direct investments, large scale acquisitions can have disastrous consequences, in particular conversions of crops to “biofuels”. First of all, they may threaten the health and integrity of the ecosystem (Escobar et al., 2009; UNEP, 2009). Secondly, even if it has been stated that in the rural towns land is accessible to all at the moment (for both housing and agriculture), the allocation of big portions of agricultural land to private investors could put at risk small-scale farmers' food security in the future (FAO, 2008), as well as access to the natural resources on which they depend (Haralambous et., 2009). Finally, another threat to the rural towns' natural environment comes from climate change, which is expected to produce the most devastating effects in Sub-Saharan Africa, such as increasing droughts and diminishing water sources.

7.2.3 Persistence and transformation of vernacular housing culture

A further characteristic of the rural town is the persistence of vernacular settlement patterns, housing typologies and building technologies, which are widely dominant in the landscape.

Traditional *mudzi* constitute the great majority of the built-up area, which are closely related to rural settlements and give to the small towns their particular character of being a big rural village.

The vernacular compound is the only affordable option for most of the population since it is constituted of small buildings made of materials that are freely collected in nature (i.e. mud, wood and straw). A *mudzi*'s spatial relations reflect the socio-economic organization of the *sena* population. Small *palhotas* organized around a big open space are expression of the polygamous structure of the families, which rely on more than one housing unit and the livelihood strategies of which take place prevalently in the compound's outdoor area.



Figure 7.15. Vernacular housing in Sena

Moreover, vernacular building techniques are based on natural materials available *in loco*, which is an advantage from both an economic and an environmental point of view. These constructions, in fact, are “sustainable”, since they use only renewable resources the regeneration capacity of which is not overcome. No energy is employed in the extraction and processing of building elements, such as sun-dried mud bricks and wooden posts, which also do not present the problem of waste disposal, since they can be completely recycled. Furthermore, vernacular technologies present a better bioclimatic behavior of the building shell in relation to the local tropical climate. The earthen walls and the straw roof, in fact, work as a natural air conditioning system, since they absorb the humidity of the air during the night and the dew at dawn and, when the sun shines on the building, the evaporation

considerably reduces the indoor temperature¹¹. With respect to the high daily temperatures, both materials (earth and straw) present good insulating properties, while corrugated iron sheets have such a high coefficient of thermal conductivity that one should advise against using them in such climatic conditions¹². Also nature, that is widely present in vernacular compounds, has the function of improving the outdoor microclimate. Through leaves' transpiration and production of shadow, the temperature is mitigated and the humidity of the air is balanced. Finally, vernacular building techniques produces the valorisation of local material culture: local resources, technical skills and housing heritage. They are also simple enough to allow the self-building process that is widely diffused in Caia and Sena. This process guarantees the uniqueness of each housing compound, which is personalized according to family needs and tastes. Moreover, self-construction has important social and cultural implications, since it reinforces community linkages through mutual aid and is also an important step in the initiation of the householders to their adult life. Summarizing, vernacular housing typologies combine comfort, aesthetics and functionality, in the respect of the local housing culture.

Anyway, it is evident that the traditional housing culture is evolving towards the model of the "conventional house". This model, that is considered more "modern" and "comfortable", is spontaneously adopted by those among the population with a medium or high income, whose aspiration to an "urban" lifestyle it exemplifies. The household survey in Sena highlights how the housing typology can be considered a reliable indicator of the household's lifestyle and socio-economic level, as well as of its "urbanity" rate: families belonging to the subsistence sector live in vernacular rural housing compounds (*mudzi*), while households of the capitalist sector invest their savings principally in the improvement of the housing conditions. In some cases, some traditional constructions are substituted with "modern" ones (*hybrid mudzi*), while in the case of the traders, the socio-economic elite of the town, a new modern house is built, which is reminiscent, in terms of shape and building technologies, to those of Mozambique cities' peripheries. Also in Caia, the percentage of conventional houses in the town is still much lower with respect to vernacular ones. Conventional houses are mostly concentrated in *bairro da Vila* and, to a lesser degree, in the *bairros* around the central area (Chirimba1, Amilcar Cabral and Nhampunga), where most traders and public administrators live, who have the possibility of building "improved" and expensive houses.

¹¹ The characteristic of self-regulation of indoor relative humidity is due to the extremely low "water vapour diffusion resistance factor (μ)" of both materials, while corrugated iron sheets and concrete walls have a much higher value.

¹² Furthermore, straw roofs have a gradient of almost 60-70%, that reflects solar radiation very well (70% more than corrugated iron sheets, which have a gradient of only 15-20°). The solar radiation, in fact, is almost vertical along the whole year at this latitude. The higher gradient of the roof produces also a better thermal comfort, coming from the higher dimension of the indoor volume.

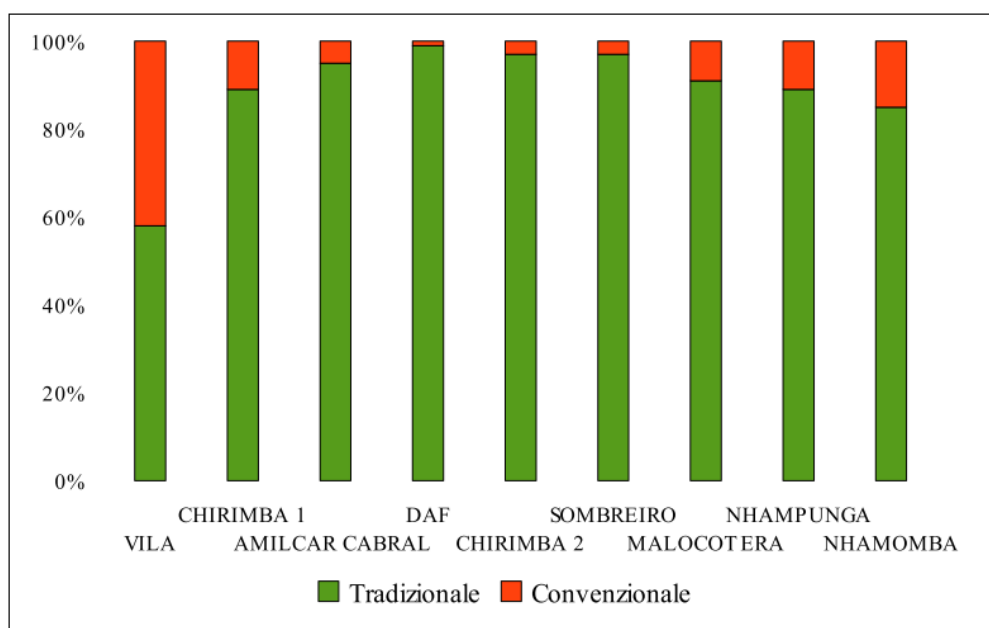


Figure 7.16. Housing typology by *bairro* in Caia¹³.

As already analyzed in Chapter 6, conventional typologies represent a radical change with respect to the local housing culture in Caia too. In particular, the relationship between indoor and outdoor spaces changes considerably: the indoor surface is between 1.5 and 5m² for each person in the traditional *palhotas* and 10-11 m² for each person in conventional houses, while the outdoor space is strongly reduced in conventional compounds. This is surely related to the fact that families with high income do not need a big outdoor space to carry on subsistence activities.

Another household survey¹⁴ led in the summer of 2010 in Caia, with the objective of analyzing housing conditions of the population in the different *bairros* and their subjective perception of this condition, reports that there is a general belief among the population that vernacular housing typologies are synonymous with poverty. Moreover, it emerges clearly that all households have the aspiration to improve their housing and living conditions, and for most of them this means building a conventional house. In particular, it is to be noticed how the corrugated iron sheets are generally preferred to straw to cover the roof, in spite of being far more expensive, producing an uncomfortable indoor environment, and being very noisy when it rains. They are still inaccessible to the majority of the population, but from the interviews it comes out that they are preferred not only because they are more durable, but also because they are a symbol of well-being.

¹³ Graphic contained in Facchinelli (2010:47).

¹⁴ See Facchinelli (2010).

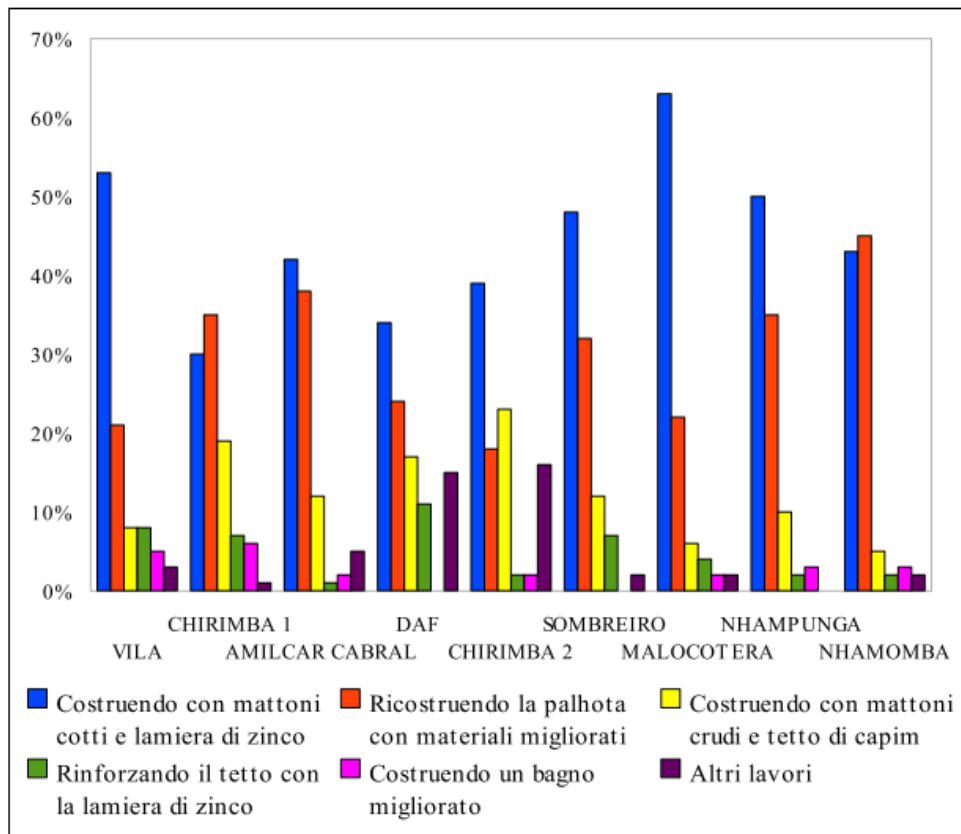


Figure 7.17. Typology of intervention to improve the housing conditions preferred by the population by *bairro* in Caia¹⁵.

- Risk: Housing models inappropriate to local contexts.

The actual trend is not only determined by the spontaneous action of medium- and high-income social groups, but it is also induced by the resettlement programs, which actually subsidize and offer technical support only if a “conventional house” is built. The effort of the Sofala province’s government to provide the population moved to the resettlement areas with adequate shelter has translated into a housing program that assigns to each family a housing plot in which just one house for the whole family is built (see appendix 6). The dimensions of the housing plot are considerable (50x50m), and this choice can be interpreted as an attention to local housing culture. Families are provided, in fact, with a big outdoor space that is, as seen, important to carry on households’ livelihood strategies. Moreover, even if the polynuclear housing typology is abandoned in favor of just one house for the whole family, in practice most families have adapted the plot to their needs by adding

¹⁵ Graphic contained in Facchinelli (2010: 115).

progressively more *palhotas* to the main building, as noticed during direct surveys in Caia and Sena. However, it must be underlined that, in practice, the assigned plots have often far smaller dimensions than those scheduled in theory, and they do not allow the progressive expansion of the constructions (as in the case of the “Reina Zimbabwe” camp). Moreover, the choice of constructing the main buildings according to just one pre-defined architectural design generates a monotonous urban landscape. Furthermore, an important issue that the resettlement program faces but does not solve is that of appropriate building techniques and construction processes. It was decided, in fact, that each family should build the modular housing unit with “conventional” building materials, meaning with bricks and corrugated iron sheets, and following an assisted self-construction modality. The government buys corrugated iron sheets and the cement that is necessary for the mortar and plaster of the walls, while bricks must be produced or bought by the future occupants. Newly introduced building techniques need skilled manpower that is also paid for by the government.



Figure 7.18. “Reina Zimbabwe” resettlement camp, Caia

We have already seen in Chapter 6 how some household under the poverty line prefer to resell their corrugated iron sheets and to cover the roof with straw. Moreover, the use of materials such as cement, iron sheets and other prefabricated elements proved to have worse performances than traditional ones with respect to climate control and provision of indoor comfort in tropical countries. Furthermore, the production of bricks (*tejolos quemados*) is also causing environmental damages such as deforestation and erosion¹⁶. Finally, it is

¹⁶ The production modality is very simple: sun-dried mud bricks are staked as to form a pyre, leaving an empty channel at its base, where firewood is burned all night long and adobe is transformed into bricks. This method does not allow the homogeneous firing of the bricks, so that the final product is of a bad quality and most of the bricks breaks, with the consequent waste of firewood. In addition, mud used to produce bricks is taken from the banks of the rivers, which are presenting evident signs of erosion.

important to underline that, due to the high costs of the program, the government succeeded in providing only a small part of the resettled population with conventional houses, and most of them had no access to the program.

The described housing policy, financed by the provincial administration and international aid agencies, is also contributing to the introduction of the “conventional housing” model in the imagination of the people as synonymous of “modernity”, “comfort” and “well-being”, fomenting its emulation in the individual choices of medium- and high-income households. For most of the population living in the rural towns, however, “urban” housing typologies are absolutely unaffordable¹⁷.

Even if the resettlement program didn’t offer a satisfying solution to the problem of providing the population of the rural towns of adequate housing solutions, an opportunity to face this problem is given by the renewed interest of Mozambican government in this issue, testified to by both the Constitution and the document *Política de Habitação*¹⁸. To reach the objective of providing all citizens with adequate housing conditions, the government has defined a national strategy, *Sistema Nacional de Habitação*, accompanied by the decentralization of power at province and district levels. The idea is to solve the housing problem through “assisted self-construction processes”. These should start by training technicians in each district, who should provide technical assistance to the self-construction activities of the households, facilitating in this way the access to an adequate house at a large scale. Furthermore, the creation of cooperatives and small enterprises for producing building elements at the local scale should be stimulated. Finally, local institutions, cooperatives and associations should diffuse experiences and information to the population about “alternative” construction technologies and new building materials. With reference to this point, the Mozambique government is carrying on an investigation of “alternative” low-cost building technologies that use local natural resources, with a special focus on rural areas. The double goal is to diffuse knowledge around this issue and to train local technicians¹⁹.

¹⁷ As seen in Chapter 6, a conventional house with the dimension of 7x6m generally costs more than 1,000 Euros.

¹⁸ The Constitution of the Republic of Mozambique in 2004 affirms the right to housing. “All citizens shall have the right to a suitable home, and it shall be the duty of the State, in accordance with national economic development, to create the appropriate institutional, normative and infrastructural conditions. The State shall also be responsible for funding and supporting the initiatives of the local communities, the local authorities and the people, in order to promote private and co-operative construction as well the accessibility of home ownership” (article 91). Furthermore, the document *Política de Habitação* offers the following definition of adequate housing: “*ter um tecto, um lugar privado, espaço suficiente, acessibilidade física, segurança adequada, infra-estruturas básicas (abastecimento de água, saneamento), condições do meio ambiente e serviços básicos.*”

¹⁹ The investigation on “alternative materials and building techniques” and their possible applications is being led by the *Ministério das Obras Públicas e Habitação* (Ministry of Public Works and Housing), with the support of the German cooperation (GTZ).

Housing policies in Mozambique are currently still being programmed and, up to now, only guidelines have been provided to the district administrations. No financial or technical support has been given in the field of low-cost housing provision. And emergency programs, like the “resettlement” one, remain at the moment the only concrete attempt to cope with this issue.

7.2.4 Overlapping of formal institutions and traditional authorities

Another relevant characteristic of the rural town is the coexistence of “modern” formal institutions (*secretarios de bairro*), to which the government of the territory is assigned by the recent administrative decentralization process, and traditional authorities (*regulo*, *‘nfumo* and *sapanda*), which are those that found their legitimacy on ancient customary laws²⁰.

The role played by traditional authorities in local government has been stimulating a huge debate in Mozambique since the end of the civil war. Advocates argue that traditional authorities represent a genuine form of African local governance, while detractors suggest that these institutions were irrevocably corrupt by their involvement in the Portuguese colonial administration. Furthermore, external observers questioned the legitimacy of the concept “traditional authority” itself in Mozambique by underlying how the meaning and the role of political institutions based on hereditary transmission has changed more than once in the history of the country and according to the geographical context. This position reduces this issue to a political debate between the two main Mozambican parties (FRELIMO and RENAMO), which both want to extend their influence on rural contexts, where the population is strongly influenced by traditional authorities (West and Kloeck-Jenson, 1999). This debate has led to the approval of D.L. 15/2000, which included for the first time since the war of independence the *regulos* into the administrative structure of the State. Both institutions participate in governing the town with almost the same functions, since the D.L. 15/2000 has homologated traditional authorities to *secretarios de bairro*, that are both now defined “community authorities”. These are elected by the population and have the same assignments and responsibilities²¹. For the implementation of the D.L. 15/2000, two main steps were followed: first, community authorities were legitimized by their communities and, only after, they were recognized by a State official and inscribed within a register. This

²⁰ The reference is to the two typologies of “traditional authority” and “legal-rational authority”, as defined by Max Weber (1961).

²¹ “Community authorities” are defined as those persons, who “exert a certain form of authority on a community or social group, such as traditional leaders, *secretarios de bairro* and other leaders legitimated by the respective communities or social groups” (Républica de Moçambique, 2000: art. 1). Among their areas of competences are to be found: peace, justice and social harmony; census of the population; civic-mindedness and fomenting patriotism; land use and occupation; food safety; public health; environment; opening and maintenance of roads. Community authorities, due to their participation in tax collection, have the right to national assistance (actually a salary).

process started in most parts of the country in 2001 through “legitimation meetings”. Many critiques have been raised mainly in relation to the interference of the State in the legitimation process, which was not consistent to the initial idea of the central role of local communities²².

According to the D.L. 15/2000, traditional authorities are now invited to take part to local decision-making processes through the *Conselho Consultivo do Distrito*, *Conselhos Consultivos dos Postos Administrativos* and Local Forums, which are advisory organs of the formal institutions of the district (see Section 5.2.3). Furthermore, some urban management activities, such as water provision and “*bairro*” up-grading programs, rely on a wider and more direct participation of local communities and on the leading role of “community authorities”. From research conducted recently on some projects related to community management of water supply systems in Caia²³, different situations were pointed out in relation to local governance mechanisms. In some cases, in which the community was really overburdened, the result was an effective management by the *Comitès de Agua*, which is responsible for the maintenance of wells and tax collection. In other cases, instead, these duties were seen as an imposition, tax was evaded and the bad state of the wells was a clear indicator of more general difficulties in management. In all these cases, however, it was noticed how community authorities had a fundamental role in determining the quality of the job of the *Comitès de Agua* and in making the population aware of their duties and rights.

The homologation between formal institutions and traditional authorities is also to be noticed in the perception of the population. Actually, from the household survey in Sena, it results that all typologies of households seem not to distinguish *regulos* from *secretarios de bairro*, both of which are consulted to obtain land use rights and to solve various neighbourhood issues. From a household perspective, both authorities participate in governing the town with almost the same functions.

Nevertheless, as testified to by interviews to stakeholders, the integration of “traditional” and “modern” institutions is still a topical issue in the rural towns and in practice there is still a lot to do to achieve this objective. The actual situation presents quite the risk of overlapping and conflict between the two authorities. For example, local administration adopted a subdivision of the rural town in *bairros*, each under the jurisdiction of a *secretario de bairro*, that overlaps the traditional division of the territory in *regulados*, each of which is under the

²²Furthermore, in *Caia* and *Sena* local authorities (among which both traditional leaders and *secretarios de bairro* are to be found) result from the registration to have installed between 1992 and 1996, that is after the end of the civil war. Logically, *regulos* should have gained their role again only after the adoption of the D.L. 15/2000. This phenomenon has been noticed in other rural areas of the country and, therefore, the legitimation process seems to be the recognition of a consolidated situation from part of the Government and could be interpreted as the attempt to extend the spatial organization of the State on those territories and population that had not been incorporated yet, up to that time (Kyed and Buur, 2006).

²³ An extensive assessment of the project “Madzi Athu” is reported in Marchesi (2010).

responsibility of a *regulo*. Boundaries of *bairros* and *regulados* do not dovetail and this often produces problems in urban management. In the case of Sena the situation is more simple: territory of the *vila* is divided into five *bairros*, all included within the same *regulado*. In the case of Caia, however, the situation is more complicated. Not only do the boundaries of the eight *bairros* not follow those of the eight *regulados*, but the *regulados* themselves—that comprehend both parts of urban and rural territories—have also undergone transformations as a consequence of the resettlement programs. For example, the flooded population and the traditional authorities of the *regulados* of Chandimba, Chipuazo, Marra and Njezera were transferred into the resettlement camps within an urban area of *vila de Caia*, that is part of the *bairro* Amilcar Cabral and—at the same time—of the *regulado* of Tanga-Tanga. The result is a complicated administrative situation, in which one modern institution (*secretario de bairro*) and more traditional authorities (five *regulos*) overlap on the same urban area.

An opportunity to solve this situation, as well as similar other ones, however, seems to be given by local decision-making processes that have been recently introduced by the public sector reform. “Administrative deconcentration” is one of the most important innovations of the public sector reform that is having important repercussions on the governance mechanisms of the rural towns. Relevant decisions related to the living conditions of the population—and among them also urban planning and management strategies—are now made *in loco*. During the first years of implementation of the “deconcentration” process, local modern institutions demonstrated to have a good administrative capacity in pursuing the established objectives and in including traditional authorities in decision-making processes.

Finally, during the household survey in Sena it was noticed that another traditional representation mechanism among the population exists. Neighboring households, in fact, elect some of their members as responsible for the small community²⁴ for a limited period of time: *responsables de 50 casas*, *30 casas*, *20 casas* (responsible for 50, 30 and 20 houses). The charge of “*responsables de casas*” is always customary, then, but not hereditarily transmitted. These persons are “responsible” for the peaceful living of their neighbors: for example they intervene in neighborhood quarrels, in cases of robberies or even when the water pump breaks down. They periodically organize *assembléias* (assemblies) among the households that are under their responsibility in order to allow their direct participation in discussing and solving main community issues.

- Risk: Exclusion of local communities and ineffective planning processes.

If the participation of traditional authorities within local decision making processes is

²⁴ These people are generally selected by the community among its oldest members, because in the *sená* culture more wisdom is granted to elderly people, who besides do not work, thus having more time to offer to their community.

guaranteed in the rural towns by the public sector reform, one major threat to a democratic, effective and inclusive local governance in Caia and Sena is represented by the exclusion of the poor population, and in particular of the newly urbanized poor.

Recent local governance reforms opened the decision-making processes to representatives of particular categories of the population (different sort of stakeholders: i.e. traders, holy orders, NGOs). But the wide majority of the population, for example 70% of the population belonging to the subsistence sector, is not represented in any advisory organ of the local government. Moreover, this happens in a context—the *vilas rurales*—where administrative “deconcentration” and not “decentralization” took place. This means that local administrators are nominated by the central government of Mozambique, and they are not elected by the population. Furthermore the charge of *regulo* is hereditarily transmitted. Summarizing, it could be affirmed that under present conditions the majority of the population of the small towns has no possibility at all to express its opinions or wills.

In particular, the exclusion of women is particularly evident. Even if women in Mozambique are to be found among both formal administrators and traditional authorities (i.e. the *regulo* of Tanga-Tanga is a women), their presence within local governance structures, like local administrations and advisory organs, is more an exception rather than the rule. The participation of women in local decision-making processes is important not only for obvious democratic reasons, since they numerically represent more than half of the population, but also because the gender division of labour is particularly strong in the rural towns. Women are generally responsible for different strategic sectors, such as agriculture, harvesting, water provisioning, housing compound’s management, children care and various other domestic tasks. On those sectors which are under their responsibility, then, only women can provide useful indications for policies, programs and for the spatial planning activity.

An important opportunity to improve local governance mechanisms has been given by the recent—and still ongoing—“administrative decentralization” process (Law 2/97- *Lei de Bases das Autarquias*). This process has included up to this time only 47 municipalities (*autarquias*), but it is expanding gradually and the long-term objective is to involve all *vilas rurales* of Mozambique, as seen in Section 5.1.2. One of the most important consequences of administrative decentralization is that the population will directly elect the local administrators, which are now nominated “top-down” from the central government. Therefore, local decision-making processes are supposed to become more democratic, inclusive and effective.

Nevertheless, one major problem detected in rural towns’ local governance mechanisms is the low monetary budget, that is partly due to inadequate allocations of financial resources from national and provincial levels, and partly due to the low tax revenue power of local administrations. Moreover, if at the “higher” political levels the district administration can count on high-skilled personnel, who generally come from major urban centres, the

educational level of the technicians is low²⁵. Local technicians receive—at best—occasional professional training by NGOs and international aid organizations²⁶. Specific training programmes are also provided by Mozambican government, but they are not able to cover the whole national territory and, at the moment, priority is generally given to major urban centres.

Finally, one major threat to the progress of the rural towns' democratic process is represented by the national government's compliance with market-based development strategies, which could determine that important decisions are taken by the "market" and not by local administrations and population. The need to attract financial resources is high in a country like Mozambique, where most national and local budgets are made of international financing and investments. The risk of losing sovereignty and of letting new forms of colonization creep in, however, is high (see the discussion around the "denationalized state" in Section 2.2.2). Furthermore "emergency programs", such as those rapidly planned and implemented in case of natural disasters (i.e. Zambezi floods), generally bypass the democratic decision-making and control levels. The same top-down approach can be noticed also in some policies and programs led by international donors and NGOs, which act in some cases more according to their own priorities (or those of their sending countries and institutions) rather than to local ones. Nevertheless, through direct surveys and interviews to stakeholders in Caia and Sena, it was possible to reach the conclusion that if there is an effective direction by the local administration and needs and priorities are clearly indicated by the population, the wide range of international donors and NGOs acting in the rural towns represents an important opportunity to receive financial and technical support.

²⁵ The current situation is that *vilas rurales* of Mozambique can actually rely on—at best—one technician, who has a specific advanced training on spatial planning, while the majority of people working in local Spatial Planning Office have generally a very low educational level. Some of them have completed secondary school, while the majority has finished just the complete primary school.

²⁶ Due to the lack of skilled local technicians, professionals are often sent to the rural towns by the provincial government or by international aid organizations and NGOs, just with the task of defining objectives and plans together with local administrations and communities (when they are not directly centrally planned in Beira). These "foreign" technicians are not generally in charge of the implementation phase, the management of which also requires specific competences and instruments.

PART III

Conclusions

Chapter 8

Recommendations to spatial planning in rural towns

8.1 Rural town: a hybrid settlement pattern

One of the results of this research is the individuation of the main features of the analysed rural towns as they were defined in Section 7.2. From this analysis it is possible to suggest a definition for this particular typology of human settlement.

The rural town can be defined as a hybrid settlement pattern, in which urban and rural characteristics melt together. This hybridization has been detected in every aspect analysed by the research: the socio-economic composition of the town, patterns of the use of natural resources, settlement and housing typologies, and local government and governance mechanisms. Similarly, rur-urbanization can be explained as a process of population growth and of strengthening the urban features of the small towns, while preserving relevant rural characteristics. These rural characteristics, in fact, are not residual, but instead represent a structural component of the rural towns that strongly influences local economies, lifestyles and also physical settlements. This dialectic in relation to the rural-urban polarity is absolutely dynamic, since it changes constantly as a consequence of the relevant globalization processes that Caia and Sena are experiencing.

Moreover, considering the ongoing trends, it is possible to underline that rural towns are contexts characterized by great instability due to exogenous factors.

First of all, the long civil war ended only in 1994 and social and political tensions continue to exist today and are reflected in local decision-making processes. Secondly, market-based development strategies make fluctuations of local economies more the rule than the exception (i.e. prices of agricultural products varying highly from one year to the other). From one side, the improvement of transport and communication infrastructures represents an opportunity for socio-economic development by facilitating the circulation of people, goods and ideas. From the other side, these mega-projects, planned “top-down” at from a national level and inspired by neoliberal policies, also represent a threat. Mega-projects in Mozambique, in fact, have demonstrated to have a very low impact on local development and poverty reduction, leading rather to the exploitation of human and natural resources and to an increasing instability of local economies, as explained in Section 5.1.3. Finally,

environmental vulnerability is also high, which is determined by both climate change and human activity. Rapid and uncontrolled urbanization, in fact, is one major cause of environmental degradation.

Nevertheless, from the research it emerges also that rural towns provide real opportunities to reduce risks related to these exogenous threats, thanks to characteristics that are inherent to their hybrid nature. First of all, natural resources are available to all households within the built-up area and in its immediate surroundings. Urban agriculture, in particular, represents the most important subsistence base of the population and an important defence against the fluctuations of the local economy. Moreover, livelihood diversification is another important adaptive strategy in a context characterized by high instability and it is made possible by the different economic activities and employments offered by the urban context. Furthermore, the decision-making process takes place at the local level, with the involvement of both formal institutions and traditional authorities and with the participation of particular categories of the population. This mechanism, if extended to the entire local community, could represent the way towards effective and inclusive decision-making processes, thus reinforcing political stability and social cohesion.

In Mozambique, however, political, economic and environmental instability characterizes the whole national territory. The rural towns also present some advantages with respect to both the rural areas and major urban centres.

First of all, basic infrastructures and services are an important indicator of “urbanity” and an evident factor of attraction for the peasants of the hinterland areas. The access to hospital, primary and secondary schools and *escolinha*, water supply systems and electric distribution network, considerably improve the quality of life of the inhabitants. In addition, the presence of markets, administrative offices, transport connections to major centers and recreational services are further pull factors for the rural population.

The possibility of coexistence of different social groups and ways of life, then, is one of the main characteristics of the rural town and can be seen as an advantage with respect to both rural areas and major urban centres. In rural areas, this variety does not exist, due to the lack of conditions which make “urban” activities and lifestyles possible. In urban areas, even if this variety is even more accentuated, it turns most of the time into a socio-spatial segregation of the population (urban dualism), rather than into the harmonious coexistence of diversities¹. Another strength of the rural town is the availability of land for urban expansion, including agricultural land that is, as seen, a fundamental asset for all households. This characteristic is

¹ Anyway, it is difficult to assess how fleeting this harmonious coexistence of social groups in the rural town is. Even if the common “rural” culture and economic base of the population is still an important element of social cohesion, this could be undermined by the observed emerging trends of socio-economic differentiation and socio-spatial separation of the population, which traditionally had a homogeneous composition. The economic structure of the rural town, in fact, is able to absorb within the “capitalist” sector only 30% of the population at the moment and the newly introduced “urban” lifestyles are affordable only by a small part of the households.

a further comparative advantage with respect to major urban centres, where it is difficult to find areas suitable for development that do not present problems of environmental deterioration, risk for the inhabitants or of integration with the already existing urban context (i.e. too distant). Moreover, in the cities, the high concentration of population and the limited amount of arable land are factors that make it very difficult to extend urban agriculture broadly in order to satisfy the demand for self-production of food of the entire poor population.

Finally, in rural towns there is still a strong connection with traditional values and locally-rooted ways of life, something that is exemplified by vernacular settlement patterns, housing typologies and building technologies. These constitute the great majority of the built-up area and give to the rural town its particular character of a big rural village. They represent an important cultural heritage that has almost been lost in major urban centres, where settlements and housing typologies have developed instead towards western models. In spite of all these advantages, it has also been analysed how the “urban structure” of the rural towns is weak. Urban infrastructures and services are far from satisfying the demand of the whole population and are concentrated in the central areas (*bairro da Vila* in Caia, *bairro cimento* in Sena). Furthermore, the rur-urbanization process shows some alarming trends, such as an emerging socio-spatial separation of the population, increasing pressure on natural resources and environmental vulnerability, adoption of housing typologies and building technologies inappropriate to the local context, overlapping of formal and traditional authorities, and exclusion of the poor population from the decision-making process. Even though these trends are not as evident in the small towns of Caia and Sena as they are in the cities of Mozambique, their early signs should be taken seriously into consideration.

The analysed trends demonstrate the need to govern the rur-urbanization process with adequate integrated policies and a coherent urban planning activity in which the “spatial” component has a strategic importance².

8.2 Conceptual framework

The conceptual framework proposed in this section, represents an attempt to put the following elements in relation in a coherent, rational, systematic and simple way: main characteristics of the rural town (key topics); main negative trends related to the rur-urbanization process, which pose a threat to the sustainable urban development (risks); planning principles, that are considered those essential to guarantee the harmonious growth

² These trends, in fact, are the product not only of the rapid and spontaneous growth of the rural towns, but also of inadequate policies and actions undertaken by the local administration, the national and provincial governments, international aid organizations and NGOs, as analysed in Chapter 7.

of the rural town (planning principles); concrete policies, programs and projects, that could put these planning principles into practice (actions). Key topics, risks, planning principles and actions constitute the conceptual framework for spatial planning in the rural towns.

Key Topics + Risks \implies Planning Principles + Actions³

The framework does not pretend to be inclusive of all possible analytical categories of the rural towns, nor of all principles and strategies which could lead to their sustainable growth. It offers just the essential elements (analytical and operational) which, according to the results of this research, should inspire the spatial planning activity in this particular typology of human settlement. These are supposed to be valid for any context that presents the same characteristics, mainly small towns of Sub-Saharan Africa. Not only the spatial plans, but also each single policy, program and project, should be consistent to the principles and actions proposed by the framework.

Section 8.2.1 describes six planning principles, recognized as those that are essential to guide the spatial planning activity in the rural towns. Sections 8.2.2 and 8.2.3 discuss two important preconditions for the application of the conceptual framework. The first one is the existence of inclusive and democratic decision-making processes, structured into two different levels that allow to make decisions at the appropriate scale of intervention. The second precondition is the training of local technicians in the sector of spatial planning and management.

8.2.1 Planning principles

The central idea proposed for the spatial planning activity is to preserve the rural characteristics, which are widely present within the rural-towns, and to integrate them with the emerging “urban” features. This strategy, as seen, aims to support the subsistence activities adopted by the majority of the population. Moreover, it represents an attempt of decolonization from western models by proposing spatial planning practices that are culturally appropriate to local contexts and are centered on local needs, priorities and culture. The main spatial planning principles, which describe this general strategy more in detail, are:

1. *Support of “subsistence” settlement patterns.* The fact that 70% of the population belongs to the “subsistence” economic sector calls for the deeper comprehension and protection of all those forms of spatial organization of the urban territory that allow the poor households to carry on their different survival strategies. Therefore, protecting “subsistence settlement patterns” could ensure a dignified standard of living to the whole population and avoid the risk of *favelization* in particular in regards to the newly urbanized households. This risk is particularly high in

³ A scheme of the conceptual framework is reported in appendix 7.

Sub-Saharan African rural towns, where demographic growth is generally associated—as seen—with the phenomenon of “urbanization of poverty”.

2. *Physical and social integration of “traditional” and “modern” settlement patterns.* The second planning principle suggests the pursuit of the physical and social cohesion of the urban system through the integration of “traditional” settlement patterns (*bairros informales*) with “modern” ones (*bairro da Vila* in Caia and *bairro cimento* in Sena). Spatial planning has a strategic importance to reach this objective and to avoid the emerging socio-spatial separation of the population within the rural towns developing towards urban dualism. On the contrary, a more equitable organization of the urban system should be achieved.
3. *Environmental conservation and livelihood improvement.* The third planning principle refers to environmental management, which should aim to guarantee the use of natural resources by the population and, at the same time, to avoid their overexploitation. As seen, most of the survival strategies of the inhabitants belonging to the subsistence sector strictly depend on the direct and free access to natural resources and, consequently, their pure conservation is not a realistically achievable objective. On the contrary, a good balance between anthropic activities and the protection of ecosystem’s functionality has to be found, in which both environmental conservation and livelihood improvement are achieved.
4. *Housing typologies inspired by local material culture.* Housing is a central issue in spatial planning and management within the rural towns⁴. The existence of large-scale vernacular settlements offers the opportunity to experiment with urban development patterns that are more appropriate to local housing culture and endogenous resources than the “conventional housing” model that is currently being proposed. This planning principle suggests the promotion of housing typologies, building technologies and construction processes that find their inspiration in the vernacular tradition.
5. *Inclusive local governance strategies.* As there are many actors participating in the urban management of the rural towns and their authorities are different in nature, the formulation of local governance strategies should involve—theoretically and practically—both formal institutions and traditional authorities⁵. Nevertheless, the

⁴ Most of the built-up area of Caia and Sena consists of housing compounds. The number of public buildings, in fact, is negligible and they are all concentrated in the central areas, while other constructions with a non-residential use are almost non-existent. Furthermore, the ongoing urban growth consists essentially of the expansion of spontaneous residential areas and resettlement camps, and providing the newly urbanized population with adequate housing is an extremely topical theme.

⁵ In the spatial planning activity, as well as related policies, programs and actions, it should be carefully taken

most negative aspect of local government in Caia and Sena is that the needs and requirements of the poor population—and in particular of some categories, such as women and the recently urbanized peasants—are not directly represented in any official decision-making process. The spatial planning activity, instead, should be considered as an inclusive decision-making process which involves not only the authorities, but also local communities, with specific attention paid to those categories that are now excluded. Moreover, as issues related to urban planning and management refer to different scales of intervention, also the decision-making process should be articulated on different levels. Moreover, “bottom-up”, participatory mechanisms should be experimented with that allow “lower” levels of the decision-making process to influence “higher” ones. This is in order to avoid social and political exclusion of the poor population, to pursue social cohesion and to make decisions more effective at the time they are implemented.

6. *Effective planning processes.* Nevertheless, even when plans, programmes and projects are the product of a participatory decision-making process, they often do not actually work because technical and financial resources are not adequately allocated to the implementation phase⁶. Under present conditions, one central issue related to the spatial planning activity in the rural towns is how to ensure that spatial plans, programs and projects are concretely implemented, even with the meagre resources that local administrations have at their disposal. To reach this objective, four strategies have been individuated: training of local technicians in the sector of spatial planning and management; “low cost” urban programs and projects; focus on a few essential physical elements and strategic actions that could trigger the sustainable urban development; and considering from the beginning all aspects that influence the practical implementation of the plan (i.e. financial, management, timing of the activities).

These planning principles should be put into practice through the integration of different

into account in each specific case who are the authorities involved and what their territory of reference is. Even when only a small area of the town is interested by the planning activity, in fact, this area could actually be under the jurisdiction of a *secretario de bairro* and of more than one *regulo* at the same time. All authorities, who have either a legal or customary right to exert their jurisdiction on the territory involved, should participate in the decision-making process. Furthermore, it is important that planners understand in each specific case, what the specific role that law, tradition and local communities recognize to each authority is. If these prescriptions are not taken into account, problems could come out in the implementation phase, making the planning activity ineffective.

⁶ Recently, the public sector reform assigned new roles to local administrations, including that of spatial planning, without providing the districts with adequate financial and technical resources. More resources should be allocated from the central government, as well as from international aid organizations, to make the devolution of powers to local administrative levels effective in practice. This is a desirable option that should be taken, however, at the macro-institutional level, being outside local governments’ jurisdiction.

policies, programs and projects. The primary actions proposed by the conceptual framework will be analysed during the presentation of the methodological framework, in Section 8.3.

8.2.2 Two levels of the decision-making process

One important precondition for the implementation of the conceptual framework, as said, is the existence of inclusive and democratic local governance mechanisms that allow urban planning and management issues to be addressed at the appropriate scale of intervention.

The suggestion is to individuate two different levels of the decision-making process in the rural towns, which could be named *Conselho da vila rural* (Rural Town Council) and *Assembleia do poço*⁷ (Well Assembly).

The *Conselho da Vila Rural* is the place where decisions related to urban planning and management are taken that involve the entire territory of the rural town (i.e. natural resources' management, localization of new urban expansion areas, key projects). The *Assemblèias do poço*, instead, are the place where decisions are taken related to some urban aspects that require a smaller scale of intervention (i.e. water supply systems' management, housing plots allocation). To promote a more direct, democratic and effective management of these issues, it is here suggested to divide the population into smaller communities according to the water supply systems of reference, as will be described in Section 8.3.

All households referring to the same water supply system and belonging to the same sub-community should directly participate in the *Assembleia do poço*. Apart from the resident population, other actors that should be involved are the formal institutions (*Secretario do Bairro*) and the traditional authority (*regulo*, *'nfumo* or *sapanda*). Where local associations and NGOs do exist and are part of the sub-community, their representatives should also participate to the *assemblèias*; but unfortunately they are not to be found in Caia and Sena⁸.

Moreover, *assemblèias do poço* should elect one or two representatives in order to allow the participation of each small community in the *assembleia da vila rural*. In this way, "lower" levels of the planning activity could influence "higher" levels through a "bottom-up", participatory mechanism.

⁷ Both terms "*conselho*" and "*assembleia*" were chosen because they refer to decision-making processes that already exist in the rural towns of Caia district, and whose meaning is already part of local governance culture. The "*Conselho da vila rural*" reminds, in fact, to the *Conselho do Distrito* and *Conselhos do Posto Administrativo*, which are the advisory organs of the local administration. "*Assemblèia do poço*", instead, recalls the *assembleias*, that is the meetings that are periodically organized by the "responsibles" of the small communities (*responsables de 50, 30 and 20 casas*).

⁸ Further actors are the representatives of international NGOs and other international actors operating in the rural town. These could have an advisory role and should not participate in taking decisions: those should be a prerogative of the local communities.

In the *Conselho da vila rural*, many different institutional and non-institutional actors should participate: formal institutions (*Secretario do Posto administrativo; Secretarios de Bairro*); traditional authorities (*regulos, 'nfumos* and *sapanda*); economic actors (i.e. representatives of traders); representatives of each *assembleia do poço* elected by the population; representatives of women; representatives of other social groups (i.e. newly urbanized population settled in a specific area of the town); and local associations and NGOs, if they exist.

At both levels, particular attention should be paid to strengthening the participation of women. In particular, the opinion of women should be explicitly required on those strategic sectors that are generally under their responsibility, such as agriculture, harvesting, water provisioning, housing compound management, childcare and various other domestic tasks.

All actors involved in the *Conselho da Vila Rural* and *Assembleias do poço* should cooperate in order to make the decisions that are the most appropriate to local socio-economic, environmental, cultural and institutional contexts. These actors should be also sensitized to making operational decisions: they should be directly involved in implementing plans, programs and projects.

If at an early stage, *Conselho da Vila Rural* and *Assembleias do poço* are just supposed to be an advisory organ of the district administration, the idea is that with the time they will become the official place where decisions related to spatial planning and management within the rural towns will take place⁹.

The involvement of the households in decision-making processes is not a difficult objective to be pursued at the small-community level, as testified recently by the success of some urban programs, like the community-management of water supply systems in Caia¹⁰. On the contrary, their direct participation in decision-making processes at larger urban scales has not been experimented with yet in the analyzed rural towns. Nevertheless, as seen in Section 7.2.4, a traditional governance structure exists through which neighboring households elect some of their members as “responsible” for part of the community. This mechanism represents a starting point and a useful reference to experiment how to involve representatives of the *Assembleias do poço* in higher-level decision-making processes.

⁹ This could also be seen as the central place where, more in general, all decision-making processes related to local government and governance take place. This could seem utopian in a context where decision related to small towns were taken directly by the central government seated in Maputo since only a few years ago. However, the recent administrative decentralization process, as seen, has given financial, administrative and political autonomy to local authorities. The further step, that of giving more power also to local communities, is surely not to be taken for granted. Nevertheless, the public sector reform in Mozambique, as said, seems to go in this direction.

¹⁰ See Marchesi (2009)

8.2.3 Training of local technicians

It is absolutely imperative to provide district administrations with training programs that raise the competency of the technicians of the local Spatial Planning Offices. They should be able to manage the transformations—including physical ones—of their small urban centers. However, a technocratic approach to urban planning and management is to be avoided. Instead, all actors involved in the *Conselho* and *Assembléias* should cooperate to help local technicians in making the decisions that are the most appropriate to the specific context, and also in making operational decisions. Therefore, technicians should also receive specific training in directing and facilitating inclusive decision-making processes.

Skilled local technicians could be a guarantee that the problems that always come out at the stage of making a plan operational, are dealt with promptly. Furthermore, providing some members of the community with a high professional training that aims to improve the living conditions of its inhabitants could represent an important element of social cohesion and increase community self-esteem.

Similarly to the decision-making process, local technicians are also required at two different levels and with different competences. Just a few high-skilled technicians are needed to follow the urban planning and management activities at larger scales of intervention that involve the whole territory of the rural town. The competencies required are many, complex and different in nature: environmental resources management; land allocation; urban infrastructures and services' screening, planning and managing; facilitating participatory decision-making processes; and fundraising for urban projects. Therefore, these technicians should have received a university education, for example in urban planning or in similar fields.

At “lower” scales of intervention, more technicians are required who need a lower educational level and training that could correspond even to having completed primary school (EP2). Each *assemblèia do poço*, in fact, would need two technicians to be responsible for that specific sub-community. Competencies required at the small community-scale are far less complex. They are related to the screening, planning and management of infrastructures and services at this scale of intervention (water supply systems, energy, sewage and waste systems); to the assignment of housing plots and assistance of the self-construction process; and to facilitating participatory decision-making processes within the *assemblèia do poço* and workshops to the community. Also in the absence of highly-skilled ones, these technicians should be able to manage the transformations occurring in their sub-community.

8.3 Methodological framework

A methodological framework for the spatial planning activity in the rural towns is now proposed that aims to translate the conceptual framework into more operational terms.

One central issue of the suggested methodology is the individuation of appropriate scales of intervention for the spatial planning activity. Four levels were individuated: the “rural town”; the “built area”; the “well community”; and the “housing compound”.

1. The largest scale of intervention is that of the “rural town” that corresponds to the territory that includes both the built area as well as the natural systems around and within it. Agricultural land, forests, water bodies and wetlands, which are at the basis of households’ survival strategies and daily activities should be considered as part of the rural towns’ territory. Moreover, the natural systems that supply environmental services or are important for protecting ecosystems’ functionalities should be included within the boundaries of the spatial planning activity at this large scale¹¹.
2. The second scale of intervention of the spatial plan should be that of the built-up area, the part that can be easily identified as the “urban” part of the rural town.
3. As already mentioned, the third scale of intervention is that of small communities, individuated on the basis of the water supply systems of reference. All people belonging to the same water supply system, should belong to the same sub-community, the “*comunidade do poço*”. Water supply systems (*poço tradicional*, *poço tradicional melhorado* or *furo equipado com bomba manual*¹²) are, in fact, one of the basic infrastructures of the rural town and have—or should have—a homogeneous diffusion on the territory and an area of influence that corresponds to that occupied by the families that make use of the well. These factors allow the subdivision of the population according to a spatial criteria (proximity to the well). Furthermore, women are used to spend some hours every day queuing for water provisioning, and therefore wells become a sort of public square and are already recognized as “community central places”. Finally, some experiences of the community management of water supply systems already exist and testify that this is an appropriate scale to deal with urban issues at the small-community level¹³.
4. Finally, some suggestions should be given also at the scale of intervention of the “housing compound”, in terms of building materials and construction processes.

Highly-skilled technicians should be assigned to the scales of intervention of the “rural town” and “built-up area”, and the *Conselho da Vila Rural* is the place where decisions should be

¹¹ The definition of the boundaries of the spatial plan of Caia (POTU) follows this idea by also including *machambas* and part of the surrounding natural systems within the area of intervention. In contrast, the spatial plan of Sena (PEU) considers just the built-up area.

¹² Traditional well, improved traditional well and well equipped with a hand-pump are the water supply systems in Caia and Sena. In Caia, only 44 households are connected to the aqueduct, the *Pequeno Sistema de Abastecimento Hidrico*. These households all live in *bairro cimento*, in a part of the *bairro* that is not equipped with any well, and should constitute a “community” apart.

¹³ See Marchesi (2009).

The general objectives of the spatial planning activity for each scale of intervention are defined below, with reference to the planning principles identified in Section 8.2.1¹⁴. Moreover, main actions are described. Some of these actions have been developed by the author as a result of direct observation, understanding and interpretation of the analyzed local contexts. Others refer to some strategies proposed by the spatial plans of Caia and Sena and recognized as particularly successful in guaranteeing the harmonious development of the small towns. Finally, other actions were inspired by international experiences that could apply also to African rural towns.

8.3.1 The rural town

Objectives. At this scale of intervention, the objective is to reach a balanced relationship between natural systems and built areas, that is to say between human activities and the environment (planning principles 1 and 3).

Actions.

- *Security measures towards natural disasters.* One important issue to be faced at this scale of intervention is surely that of taking adequate security measures towards natural disasters. In the analyzed rural towns, for example, the frequent Zambezi Floods have damaged several *machambas* and housing compounds. Within the spatial planning activity in Caia and Sena, then, the boundaries of the floodplain should be taken into account when considering new expansion areas for housing and agriculture and households at risk might be resettled.
- *Definition and management of the different plugs of the landscape mosaic.* Particular attention should be paid in defining boundaries of and typology of use for the different plugs of the landscape mosaic (i.e. reforestation areas, conservation forests, forests for timber production, agricultural land, natural systems within urban areas, new rural expansion areas). Environmental management should also take into account the “natural” system within the built-up area (green zones, humid areas and water bodies) and its relations to the natural system surrounding it. Which areas are suitable for what specific destinations should be defined and essential rules should be provided to guarantee sustainable patterns of use to each area. In the rural towns, the objective of natural resource management should be to re-design the landscape mosaic in order to solve conflicts between the protection of nature and the use of natural resources in such a way that both nature and people benefit¹⁵. GIS-based

¹⁴ Planning principles related to local governance—inclusive and democratic decision making processes and effective planning processes (planning principles 5 and 6)—are actually transversal to all scales of interventions.

¹⁵ An interesting example is provided by Orsi (2010). The proposed methodology provides advanced spatial decision support tools for the sustainable management of forests in a rural area of central Chiapas (Mexico). It is

multicriteria methodologies could be a useful instrument at this scale of intervention in order to support a participatory decision-making process that considers different objectives (socio-economic, environmental and institutional) at the same time¹⁶.

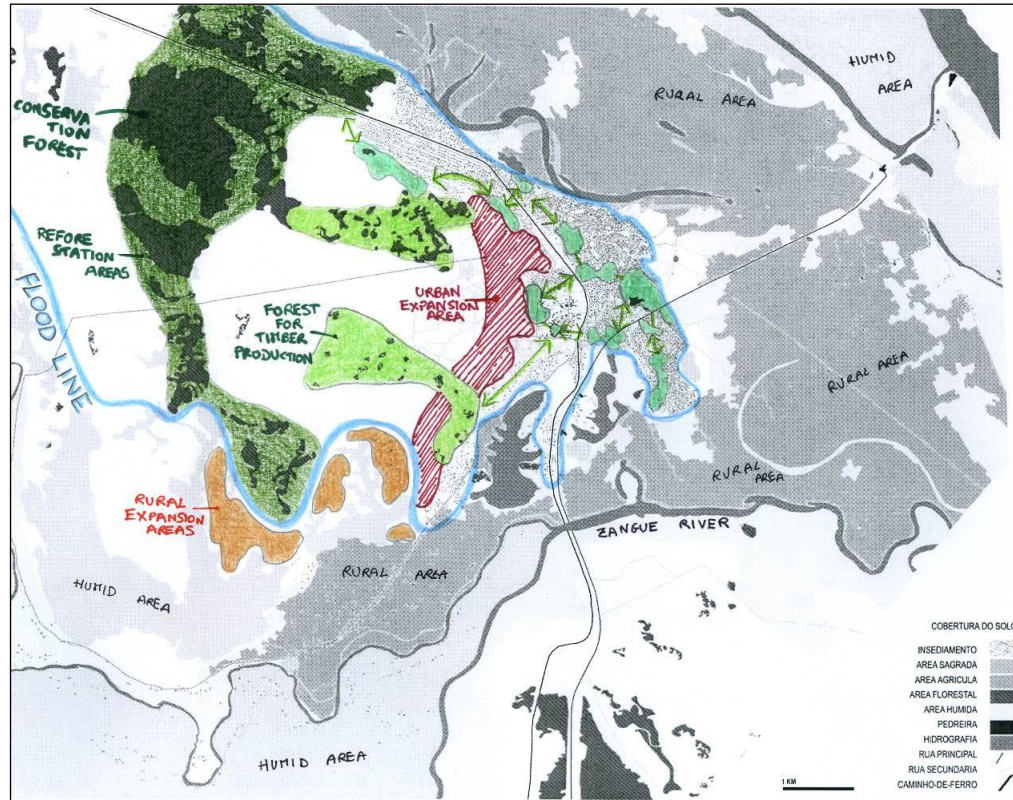


Figure 8.5. Example of different actions at the scale of intervention of the “rural town”¹⁷

- *Localization of urban expansion areas.* A prerequisite to avoid the risk of *favelization* of the newly-urbanized population is the quantification of the expected housing need and the localization of new urban expansion areas. As said, land availability is not generally a problem in the rural towns. Nevertheless, this action is not banal at all,

based on the re-design of the landscape mosaic and consists of a reforestation in a way that environmental protection is enhanced, the protection of ecosystem services is ensured and livelihoods are sustained.

¹⁶ There are different tools that support the planner in defining where to act and what to do spatially. These are particularly useful within participatory decision-making processes and include the “Multicriteria Decision Analysis (MDA)” using “Geographic Information Systems (GIS)”. Among the different typologies of MDA, “Multi Objective Decision Analysis (MODA)” and, in particular, the “Multi Objective Land Allocation (MOLA)”, seem to be especially appropriate to this specific case.

¹⁷ This map does not result from any specific study and is just a rough example of some possible actions at this scale of intervention. These are sketched with colors, over a map of the territory of *vila de Caia* taken from the POTU and reprocessed in black and white.

since localization choices should consider different criteria at the same time. Furthermore, a considerable constraint on the localization of new urban expansion areas is represented by the lack of urban transportation means, both private and public, within the rural towns. Therefore, “proximity” criteria to *machambas*, water supply systems, natural resources, urban services and amenities must consider that distances must be covered on foot. Again, GIS-based multicriteria methodologies are an effective decision support tool to solve complex problems of this kind¹⁸.

- *Security of agricultural land tenure for all households.* The planning activity should guarantee to all households the availability of and accessibility to agricultural land, since agriculture has been recognized as the primary subsistence activity of the majority of the population. This means, first of all, ensuring an egalitarian structure of land ownership, or at least the security of agricultural land tenure to all families. Moreover, the easy access to the *machambas* should also be guaranteed and these should be seated at a reasonable distance from the housing compounds. This policy is not difficult to enact, since in Mozambique land is commonly held and the access to it could be controlled through the spatial plan¹⁹.

8.3.2 The built-up area

Objectives. At this scale of intervention the plan should provide the rural-town with its basic urban structure, paying close attention to giving a homogeneous character to the urban system and in promoting the social and physical integration of “traditional” and “modern” settlement patterns (planning principle 2).

Actions.

- *Design of road systems.* An important strategy, which could give more cohesion to the rural towns, should be the design of the road systems. Actually, as an effect of the unplanned growth of the last 10 years, the *bairros* (especially in Caia) have developed as autonomous parts of the town and it is difficult to find a sense of unity within the urban system in part because it lacks a rational and effective design of the main roads. Basic road axes should constitute the skeleton of the rural town, which would provide it with a general sense of unity and efficiently connect the different areas.

¹⁸ An interesting example is provided by the paper of Al-Shalabi (2006), which introduces a methodology for housing site suitability assessment in Sana’a city (Yemen), by integrating high spatial resolution remotely sensed data, Geographical Information System (GIS), Multi Criteria Analysis (MCA) and Analytical Hierarchy Process (AHP).

¹⁹ To offer to each household an adequate agricultural plot at a reasonable distance from the housing compound, for example, the POTU in Caia establishes that to each household is granted the title of no more than 1.5 ha of land on the alluvial plain, that can be considered the domain of subsistence agriculture. “This measure was intended to stop possible investors from acquiring large tracts of land and thereby depriving family farmers of their best plots” (Diamantini, 2010).

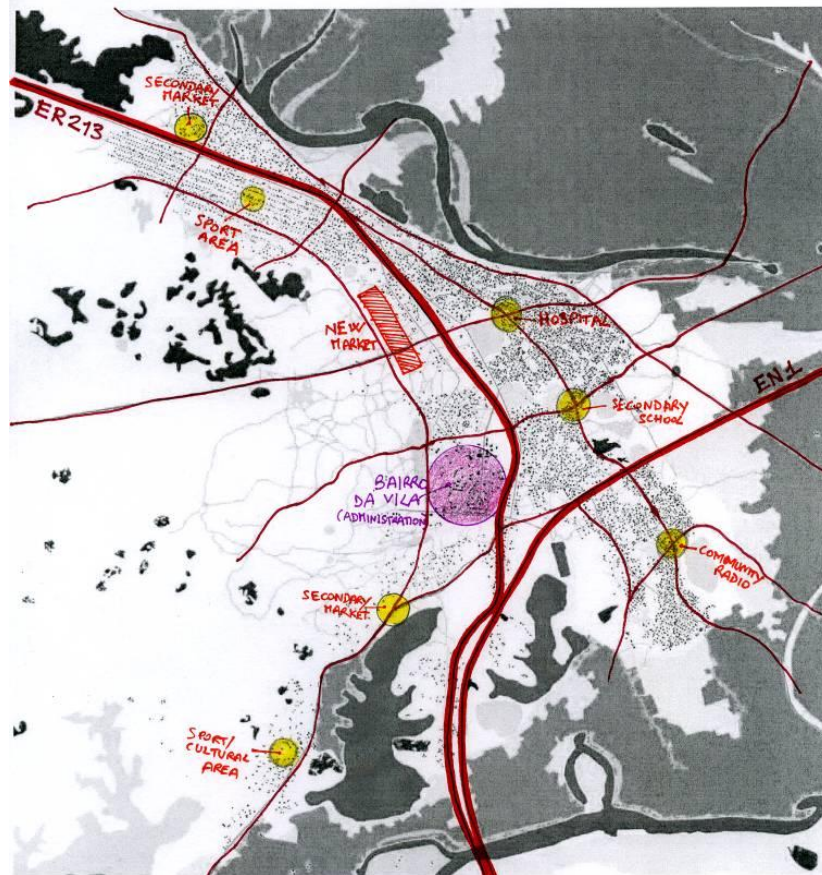


Figure 8.6. Example of the design of main roads and the distribution of urban centralities within the “built-up area”²⁰

- *Equal distribution of basic services and infrastructures within the urban system.* As seen, vernacular settlements present a very low level of services and infrastructures, and what little exists is concentrated in the central areas of the rural towns (*bairro da Vila* and *bairro cimento*). Therefore, distributing services and infrastructures more equally within the urban system should be prioritized so as to raise the living standard of the spontaneous settlements and to reverse the ongoing trend of socio-spatial separation of the population. At this scale of intervention, the settlements that are particularly degraded should be identified so that resources may be concentrated to carry out the upgrading programmes²¹.

²⁰ This map does not result from any specific study and is just a rough example of these actions at this scale of intervention. These are sketched with colors over a map of the built-up area of *vila de Caia* taken from the POTU and reprocessed in black and white.

²¹ With reference to urban upgrading in small towns of Mozambique, a model was developed by the Faculty of Architecture and Physical Planning at the University in Maputo as part of a project financed by UN-Habitat (MICOA, 2005). This model aims to provide security of land tenure; ameliorate housing conditions; and improve water supply systems, drainage and roads. The focus is on the use of “appropriate technologies”.

- *Promoting polycentrism.* In the perspective of polycentrism, particular attention should be paid to distributing on the whole urban system urban services that constitute—or could potentially constitute—“urban centralities” (i.e. secondary school, hospital, markets, sport areas, administrative services, cultural areas). These “key projects” should be placed in strategic positions in order to integrate different parts of the towns that are currently separated, with particular note of physical barriers²².

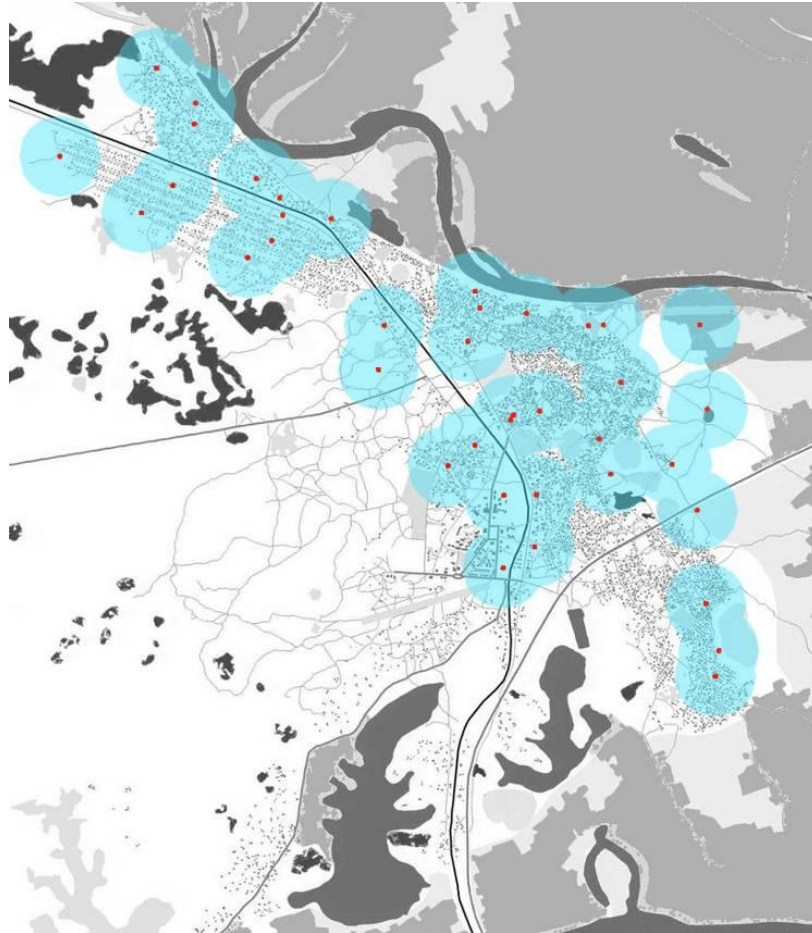


Figure 8.7. Example of the individuation of “well communities”²³.

training of local technicians and involvement of local communities. This model was adopted also within the spatial plans for Caia and Sena.

²² In Caia, for example, the spatial plan (POTU) individuated the construction of a new market as a “key project”. Its localization aimed to give a new centrality to the *bairro* DAF and to overcome its marginalization by connecting it to *bairro da Vila*.

²³ This map does not result from any specific study and is just a rough example of definition of well communities according to already existing water supply systems in *vila de Caia* as reported in the POTU. The radius of influence of the well was calculated to be 75 m, as it will be explained in the note 28 of this Chapter.

- *Definition of “well communities”.* Another action at this scale of intervention is the localization of water supply systems. These should satisfy the demand of the population and should be distributed equally within the whole built area of the rural towns, so that each household need only travel a reasonable distance for water provisioning²⁴. Afterwards, the population should be divided into small communities of households that make use of the same well²⁵. The “*comunidade do poço*” represents the next scale of intervention.

8.3.3 The “well community” (*comunidade do poço*)

Objectives. At this level of intervention, the objectives are to guarantee to each “well community” basic infrastructures and services (planning principle 2) and to promote housing typologies inspired by local material culture (planning principle 4).

Actions.

- *Screening, planning and management of basic urban services and infrastructures.* At this scale of intervention, a screening of basic urban infrastructures (water supply systems, energy distribution networks, sewage and waste systems, secondary roads) and services should be done. If they do not satisfy the needs of the community, the “*assembleia do poço*” should help the technicians, who are in charge of the community, to design those solutions that are the most appropriate to that community. Facilitating the direct involvement of the “well community” in infrastructures and services’ management is another important action to be taken at this scale of intervention²⁶. The technicians should organize workshops on urban management in order to sensitize to and train the community on these issues.
- *Design of community’s central places.* Each “well community” should be provided at least with one “central place”. This is to be intended to be a public plot where the water supply system is situated in addition to other public infrastructures individuated by the community (such as, for example, solar panels, which could constitute an “energy point”). This public plot would also be intended for use as a recreational place and the seat of the *assembléia do poço*. It should be provided with trees and

²⁴ The World Health Organization and Mozambique national legislation provide the legal framework related to water supply in the *vilas rurales*.

²⁵ In Caia, according to the POTU, 45 wells exist at the moment and another 10 are under construction. Therefore, the average of about 365 persons make use of each water supply system. This means that in Caia, under present conditions, “well communities” would be constituted of almost 52 households (calculating an average of 7 members for each family).

²⁶ With relation to this action, an interesting reference is the already-mentioned program of community-management of water supply systems in Caia (see Marchesi, 2009).

vegetation and should be designed by the technicians together with the community²⁷.

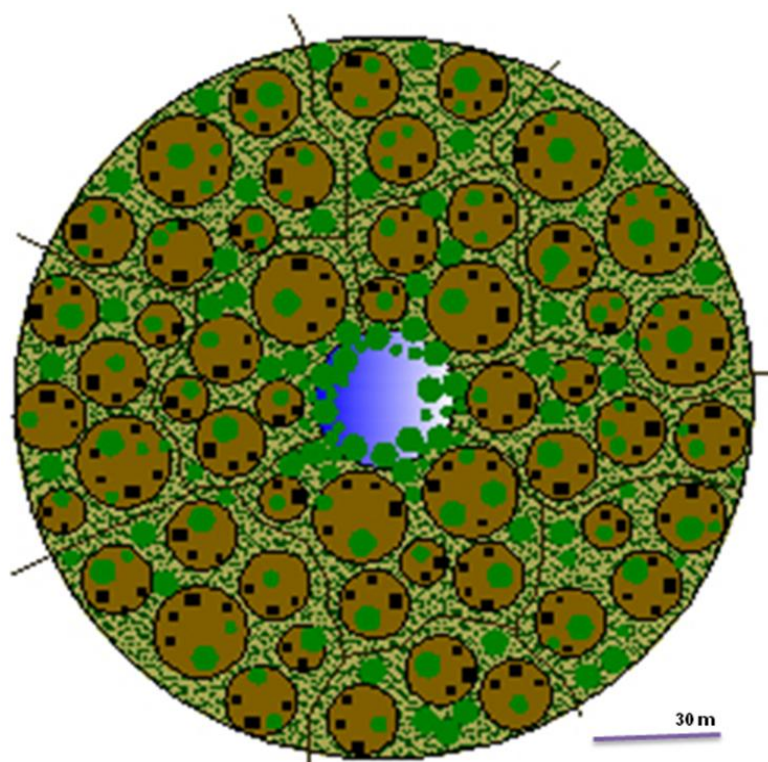


Figure 8.8. “Well community’s” settlement pattern²⁸

- *Facilitating the housing process.* Equally to what was affirmed in relation to agricultural land, all households should have the right to security of land tenure for housing. Each housing compound should be formally assigned and inscribed within the cadastre of the Spatial Planning Office. The vernacular housing compound (*mudzi*) should be proposed as basic unit for the design of new urban expansion areas, as well as for the densification of already built-up areas. Therefore, households should be provided with a circular plot. These should be of adequate size for the family and its

²⁷ The POTU of Caia contains some prescriptions related to the design of the water supply system area. Different measures are proposed to protect groundwater from contamination. For example, a buffer of 15m around the well is established for the planting of trees, allowing the drainage of water, and avoiding the presence of animals and latrines.

²⁸ This is only an example of how the settlement pattern of the “well community” might be imagined. The central place has a radius of 15m, according to the prescriptions of the POTU related to the area surrounding the water supply system. The whole area has a radius of 75m. This dimension was obtained by calculating each community to have about 52 households with an average of 7 members each. According to the results of the household survey in Sena, a different composition of the households was imagined, as well as a different dimension of the housing plots. It was supposed, then, that 30 households have a plot with a radius of 15m; 10 households have a plot with a radius of 20m; and 12 households have a plot with a radius of 10m. The composition of the households and the dimensions of the plots were deduced by those measured by the household surveys in Caia and Sena.

expectable need of progressively expanding. Moreover, each housing compound should be big enough to host families' subsistence activities. Each plot should be provided with at least one fruit tree, taking advantage of those already existing and planting more when needed.

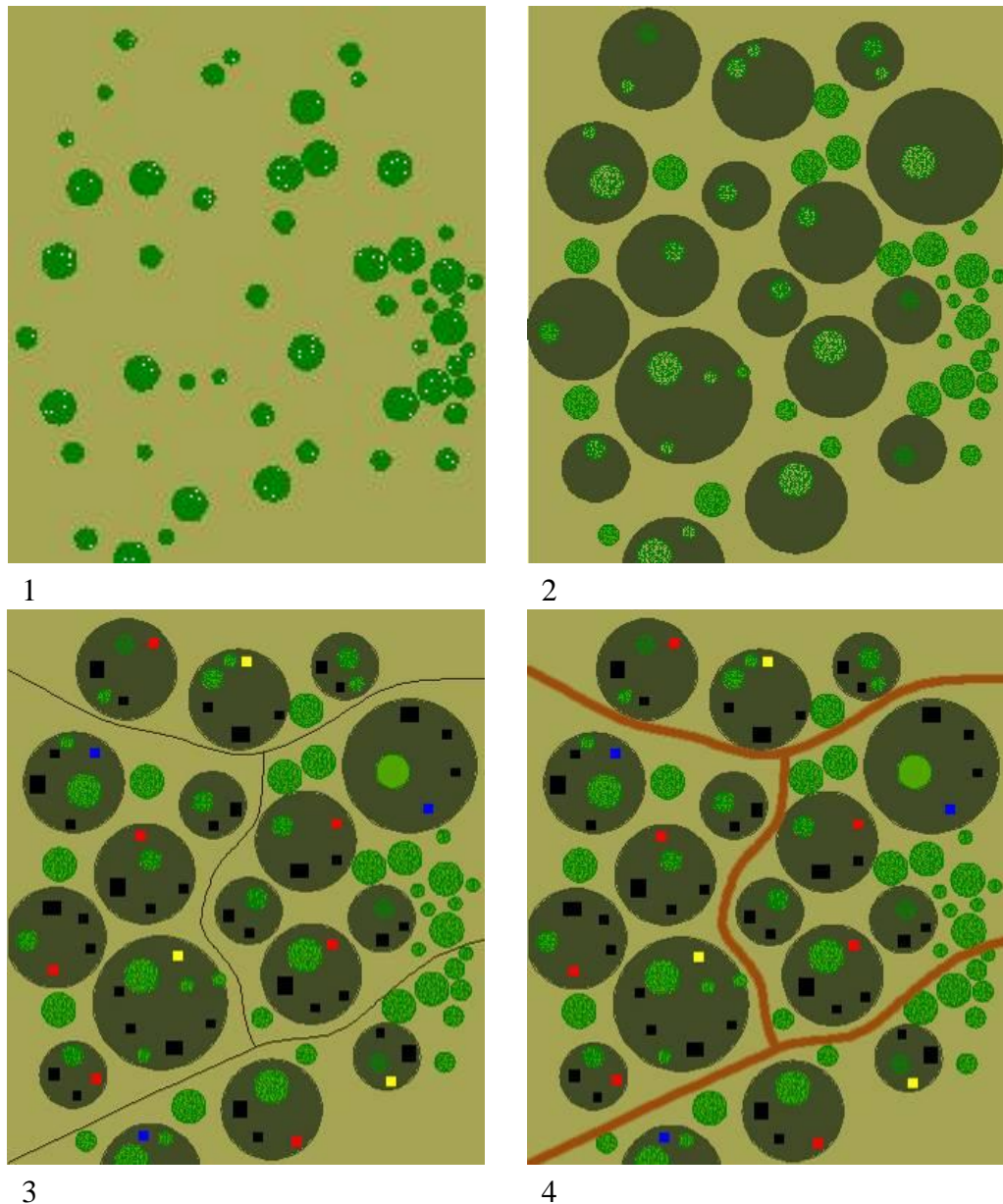


Figure 8.9. Simulation of the housing process in a new urban expansion area:
 1) non-urbanized area; 2) assignment of the housing plots; 3) progressive construction of the plots and spontaneous treading of the paths; 4) secondary roads provided with drainage systems.

Once the household has received its plot, the assisted self-construction process can take place, as will be explained in Section 8.3.4. Particular attention should be given in leaving space among the housing plots for the movement of the people without

invading the private areas and for letting vegetation grow up spontaneously. Secondary roads within these small communities should not be planned, and paths should rather be spontaneously defined by people walking among the housing plots and only then should drainage systems be realized and their ordinary management organized. This could avoid the regular, orthogonal grids that are generally used to design secondary roads. The idea of the whole housing process is to give legal, financial and technical support to the spontaneous settlement activity of the population.

- *Election of representatives for the Conselho da Vila Rural.* Each *assembléia do poço* should elect two representatives to participate in the “*assembléia da vila rural*”. Bottom-up participatory mechanisms aim not only at guaranteeing a direct participation of the small communities at the higher-level of the decision-making process, they should also allow the “well community” to ask for special financial and technical support from the “*assembléia da vila rural*”. This could happen, for example, when a community is not able to satisfy its demand for basic urban infrastructures and services and settlements require particular upgrading programs.

8.3.4 The housing compound

Objectives. The objective is to promote housing typologies appropriate to local contexts, those that are inspired by local material culture (planning principle 4). At this scale of intervention we are better off discussing suggestions and facilitations rather than prescriptions.

Actions:

- *Permitting mixité.* There should be no prescriptions related to the exclusive residential use of the housing compound. The use of the housing plot for cultivating, cattle breeding, domestic selling, handicraft production and so on should be allowed. Any survival strategy should be allowed and quarrels between neighbors should be solved within the assembly.
- *Assisted self-construction.* The self-construction process of the housing compounds is proposed. However, the technicians of the “well community” should assist this process in order to guarantee the quality of the buildings. This “assisted self-construction” should be strengthened through the participation of the householders in workshops on housing construction, upgrading and management. In this way, a large-scale improvement of the housing conditions could be achieved, with a low financial investment from the administration’s side²⁹.

²⁹ The introduction of assisted self-construction processes in Mozambique has been described in Section 7.2.3.

- *Promotion of local construction materials and improvement of traditional building technologies.* This action could be achieved by the simultaneous implementation of different mechanisms. First of all, the use of construction materials available *in loco* and the improvement of traditional technologies should be one central topic of the workshops organized by the technicians of the “well community”. Secondly, public institutions and representatives of the community should be encouraged to set good examples, since “emulation” is one of the most important mechanisms through which housing models spread throughout the *vilas rurales*. Moreover, the production of building elements *in loco* by craftsmen, individually or in cooperatives, should be supported³⁰. The development of a local market in the construction sector would ensure more workplaces, the use of local skills, regional materials and resources, and could put money in circulation with internal rather than trans-global expenditures³¹. Finally, upgrading programmes in already-built areas should not lead to the substitution of traditional housing typologies with “conventional” ones but focus instead on their improvement.
- *Improvement of sanitary conditions.* Another issue that could be treated within the workshops is the improvement of the sanitary conditions of the housing compound. In particular, most of the compounds are not provided with a latrine. Sewage and waste systems that are appropriate to the local contexts should be proposed to the households³² and the assistance of local technicians should be offered.
- *Valorisation of vernacular settlements as cultural heritage.* The valorisation of local material culture could be pursued also by individuating vernacular settlements or compounds that have a particular value due to their history or the quality of the architecture. These settlements and compounds could be declared “conservation

³⁰ A useful reference could be the investigation led in recent years by the *Ministério das Obras Pùblicas e Habitação* (Ministry of Public Works and Housing) and by the German cooperation (GTZ) on “alternative materials and building techniques” and their possible applications. “Alternative materials” include straw (the study of which has been developed in Chimoio and Manica), bamboo (Gorongosa), wood (Palmeira Brava and Marromeu), and earth (Caia). This investigation has produced some guidelines that are intended to be diffused in the districts through workshops. Moreover, the government intends to support this investigation by adopting the use of “alternative building techniques” in public buildings as well. Furthermore, the support of the development of cooperatives that produce “alternative building elements” is planned.

³¹ As demonstrated by the surveys in Caia and Sena, small scales enterprises (which in some cases assume the form of a cooperative) were born in recent years to produce building materials and construction elements, and most *buscados* consist in recollecting and selling natural building materials (i.e. straw for the roofs) or in producing adobe (sun-dried mud bricks), bricks, wood posts and beams. Small-scale enterprises and handicraft activities in the housing construction sector represent an important part of the local economy, in particular for households belonging to the subsistence sector. For the support of Mozambique government to this strategy, see the document *Política de Habitação* and the national strategy *Sistema Nacional de Habitação* (discussed in Section 7.2.3).

³² The POTU of Caia contains some indications on this issue.

areas” and particular activities for their protection and valorisation could be pursued³³. This could raise the community self-esteem towards their own traditional housing models and reverse the ongoing trend of adopting western ones.

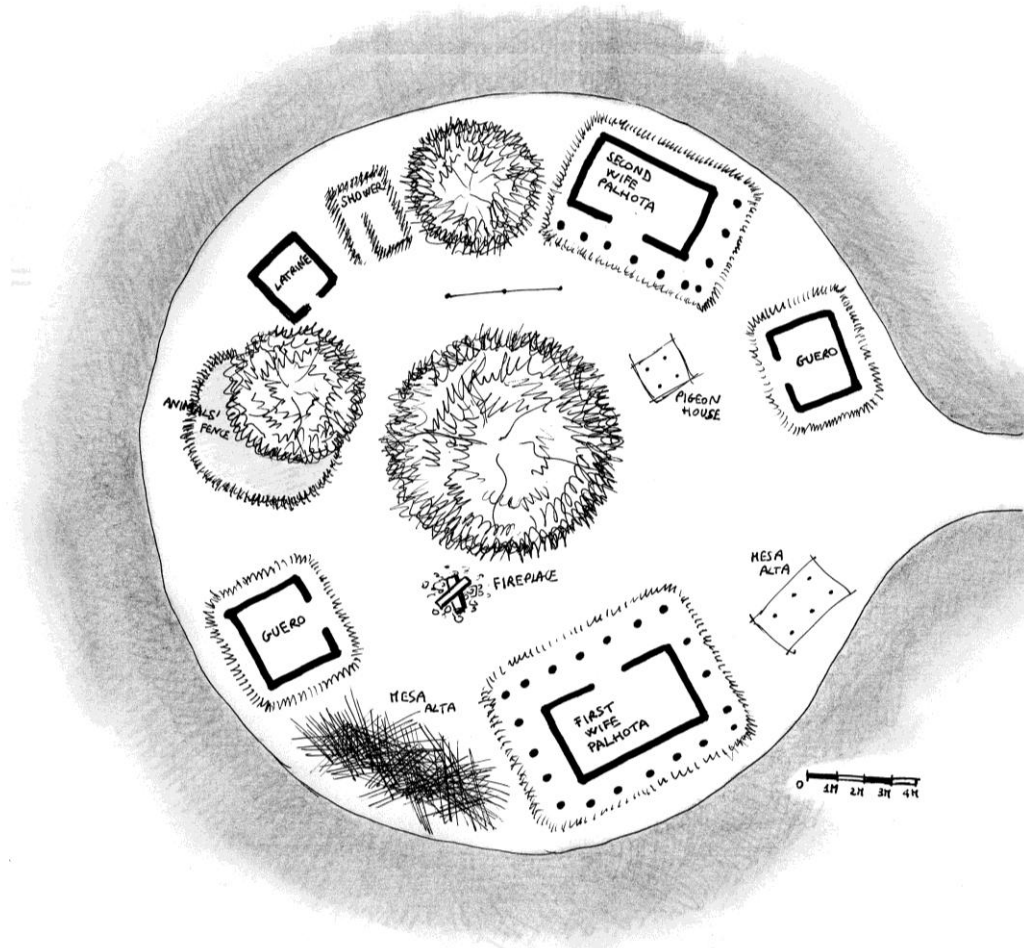


Figure 8.10. Example of housing compound

8.4 Final considerations

The conceptual and methodological frameworks proposed in previous sections outline a spatial planning process for the analyzed rural towns. These, as described in Chapters 6 and 7, are a particular typology of human settlement and their settlement pattern presents very peculiar features. Therefore, a reflection was required on what characteristics the spatial planning activity in the rural towns should have. The aim is to guarantee that planning

³³ With respect to this point, an interesting reference is the spatial plan for the Mozambique island of Ibo. Here, an old vernacular settlement made of traditional *mudzi* has been declared conservation area and specific actions for its valorization have been proposed.

principles and actions are appropriate to the socio-economic, environmental and institutional context; that the physical transformations respect the local material culture; and that decisions are effectively implemented.

After having described the conceptual and methodological frameworks, it is now possible to summarize the most important characteristics of the proposed spatial planning activity.

First of all, it is “multiscale”. This means that the spatial planning activity is articulated into different levels in order to deal with each urban planning and management issue at the appropriate scale of intervention.

Secondly, it is “holistic”. The proposed actions (policies, plans, programs and projects) should consider different aspects at the same time: socio-economic, cultural, environmental, and those related to local governance and to physical settlements.

Thirdly, the proposed spatial planning activity aims to be “equitable”. It pursues, in fact, an egalitarian land-ownership structure for both agriculture and housing, and an equitable socio-spatial organization and development of the whole urban system.

Moreover, a sustainable relationship between human activity and the environment is also pursued at each scale of intervention: from the environmental management at the “rural town” level up to the use of “environmental friendly” building materials at the scale of intervention of the “housing compound”.

Furthermore, the proposed typology of urban growth is rooted in the understanding of local traditions. The housing process described in Section 8.3.3 and 8.3.4, for example, is based on the study of vernacular settlement patterns, architectures, building technologies and construction processes. However, what is suggested is not the banal replication of tradition: innovations are introduced, such as legal security of tenure and cadastre, “assisted” self-construction processes, and “improved” or “alternative” building techniques.

Finally, the spatial planning activity aims to be inclusive, through the involvement of local communities in participatory decision-making processes and through the introduction of “bottom-up” mechanisms. Also in this case, however, attention is paid to the already existing local governance mechanisms. The “*assembléia do poço*”, for example, is an attempt of giving formal recognition and a more systematic organization to a traditional decision-making body at the small-community level.

Some considerations need to be further explored in relation to the effectiveness of the proposed spatial planning process.

First of all, as said, the training of local technicians in the rural towns in the sector of spatial planning and management is an important precondition for the implementation of the plans. Moreover, due to the meagre financial resources of the district administration, the spatial planning activity should be “low-cost”. The strategy proposed by this research is essentially based on: valorisation of local resources (human, natural, cultural); use of

“high-tech/low-cost” planning tools³⁴; professional training of local technicians; and participatory decision-making processes that include local administrations, technicians, economic actors and different social groups of the rural towns. All these actors should cooperate in finding the solutions which are the most economic and produce the best effects on local economies. Moreover, they should define financial and other implementation mechanisms that involve the different actors and social groups of the rural town in the most appropriate way. In this way, spatial planning acts on immaterial structures and processes by activating the cooperation of local communities rather than programming expensive physical constructions and other financial investments. A so-defined “low-cost” planning process could guarantee that urban programs and projects are developed at a large-scale and diffused throughout the whole urban territory rather than concentrated on small-scale interventions which address only a small part of the population³⁵.

Furthermore, it is also important that the planning activity focuses only on those aspects and actions that are recognized as essential for promoting the sustainable growth of the rural towns. It is true that one main objective is that programs related to the improvement of the living conditions of the population should be diffused throughout the whole urban area and should include as many households as possible. Nevertheless this does not mean that the spatial plan should pretend to design the whole territory of the rural-town. On the contrary, it should be based rather on a “base plan”³⁶ that focuses at each scale of intervention just on

³⁴ Even when planning actions require the employment of “high-tech” spatial planning tools, these are absolutely “low-cost”. Actually, today it is possible to find hardware with good performance that is cheap even if compared to the poor budget of the district of Caia and almost any computer programme (i.e. GIS, softwares for multicriteria spatial analysis, and so on) has a “free software” version available.

³⁵ For example, Resettlement Programmes invest a large amount of money to buy “conventional”, industrialized building materials and for the salary of skilled bricklayers, who generally belong to a construction company seated in Beira. In this way, the local community does not receive any economic advantage from the construction process and, moreover, only a few family can be included in the programme, as it is too expensive to be realized at a large-scale. On the other hand, in the housing process outlined in Section 8.3.3 and 8.3.4, households, technicians, local administrators and small-scale enterprises cooperate in order to solve the issue on a large scale and in the most economic and adequate way. In particular, the administration should provide security of land tenure, a plot of an adequate size, basic services and infrastructures, and two local technicians for each “well community”. These must assist the households, who are in charge of the self-construction of their housing plots according to “alternative construction techniques” disseminated through workshops. These techniques are based on materials available *in loco* that can be freely recollected in nature or processed into construction elements by local small-scale enterprises. Small-scale enterprises and handicraft activities in the construction sector represent an important part of the local economy, in particular for households belonging to the subsistence sector. In this way, most of the households enjoy the benefits of the large-scale housing improvement, and new qualified workplaces are created in the administrative (local technicians) and handicraft sectors (production of “alternative” building elements).

³⁶ About this topic, an interesting investigation is being carried out by the University of Lleida (CIMES—UNESCO Chair on “Intermediate Cities—Urbanization and Development”) and the International Union of Architects (UIA-CIMES, Work Program on “Intermediate Cities—Urbanization and Development”). “Focusing on the study of intermediate cities, the UIA-CIMES Program underlines the fewer economic and technical resources available for the urban development of this type of city. However, in the same way as other cities that have these resources, they require planning instruments to direct their sustainable and strategic development” (Llop, 2010). This investigation led to the redaction of the “Base Plan, a tool for sustainable

some essential physical elements: management of the interactions between natural systems and urban areas, main viability, basic urban infrastructures and services, indication of urban expansion areas, and a few “key projects” that could represent strategic urban “nodes”. It is widely demonstrated that in Third World contexts (whether large cities, or medium or small towns), in fact, pretending to plan each single surface of the urban territory does not work. Not only is the lack of resources a big problem for such an extensive and meticulous planning design, but also the spontaneous dynamics that transform the urban context are often too fast and powerful to be governed in detail through the plan. Therefore, the spatial plan—the “base plan”—should better provide the rural town with a coherent and homogeneous urban structure. It is within this structure and according to some general principles that spontaneous dynamics and activities should take place.

Fourthly, particular attention should be paid to planning starting from the intervention. It is, in fact, important to invert the way planners are used to think (“reverse planning”): how the plan and the single actions will be implemented should be considered from the beginning of the planning activity. This means thinking at the same time about the technical aspects (the “project”, as it is generally intended) and all other aspects which will influence the practical implementation of the plan: who will participate in the implementation phase; which role will he or she have; how much financial resources will be invested in each specific action; where do these resources come from; and the timing of the activities. In particular, technical and financial planning should go hand in hand. A guarantee that this is realized, could be to intend spatial planning as an inclusive decision-making process, in which all actors of the rural towns are involved in planning and implementing the actions.

Finally, actions related to the scales of intervention of the “well community” and “housing compound” should be absolutely simple to draw up and to manage. In this way, they could be led also by low-skilled local technicians.

Supporting the sustainable growth of the rural towns is a pressing issue, the positive effects of which could involve the majority of the population of Sub-Saharan Africa. Moreover, promoting the leading role of local administrations, technicians and communities in the spatial planning process and providing them with adequate instruments represents an important step towards their autonomy from international aid organizations, from which they strictly depend on in terms of financial and technical support.

development in intermediate cities”. The Base Plan is an urban and/or physical planning document that tries to combine urbanization and development. It is also a practical tool that proposes a flexible methodology (general guidelines) to carry out urban territorial and physical planning in intermediate urban centers based on criteria of sustainable and strategic development.

8.5 Possible applications of the research

The spatial planning process here proposed results from the review of literature and from the analysis of two case studies, the rural towns of Caia and Sena. It was developed to be appropriate to the specific nature of the analysed rural towns and to the relevant processes that these are going through. The attempt was to propose for these contexts more sustainable patterns of urban growth than those experienced by major urban centers.

It would be interesting, then, if further research would experiment with the suitability of the proposed conceptual and methodological frameworks in other Mozambican rural towns as well, and in similar contexts of Sub-Saharan Africa. Similar contexts can be intended as the small towns, the main characteristics of which can be traced back to the “key topics” and “risks” individuated by the conceptual framework and described in Section 7.2.

Moreover, an opportunity for comparative studies on spatial planning in small and intermediate urban centers is provided by the investigation led by the CIMES-UNESCO Chair on “Intermediate Cities—Urbanization and Development” at the University of *Lleida* (see note 36 in this Chapter). Particularly interesting with respect to the present research seems to be the focus on the “Base Plan” as a tool for the sustainable development of small and intermediate towns. The UIA-CIMES Program is collecting experiences of “basic planning” in intermediate urban centers all over the world.

Furthermore, one important characteristic of the spatial planning process proposed by this research is that it is action-oriented. This choice depends on having recognized the training of local technicians as one crucial topic for an effective urban planning and management in the rural towns. In this perspective, the conceptual and methodological frameworks proposed by this research, aim to be tools that support local administrations of Mozambique and other Sub-Saharan African countries in planning the sustainable growth of the rural towns. Therefore it would be desirable that these administrations would experiment the adoption, implementation and adaptation of the proposed spatial planning process.

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Appendices

Appendix 1. Structured qualitative interview for the household survey

Appendix 2. Matrix of data of the household survey

Appendix 3. Codification of the variables of the matrix of data

Appendix 4. Landsat scene of *vila de Caia*

Appendix 5. Landsat scene of *vila de Sena*

Appendix 6. Resettlement Project (from: *Direcção Provincial das Obras Públicas e Habitação* of Sofala Province)

Appendix 7. Conceptual framework for spatial planning in rural towns

3) Apresentação da família

- Para cada membro do núcleo familiar indicar:

Nome	Idade	Papel na família	Em que casa vive	Lugar de nascimento	Etnia	Línguas faladas	Nível de educação	Ano de transferência a Sena	Assentamento anterior	Primeira ocupação	Segunda ocupação	Buscadas

- Você poderia contar a história da sua família?
- Você poderia descrever um dia típico em sua família, as atividades desenvolvidas por cada membro da família?

4) Fontes de renda provenientes da:

Produção agrícola comercial (MTn/ano)	Ocupações extra agrícolas (MTn/ano)	Buscadas (MTn/ano)	Outras rendas (MTn/ano)	Total (MTn/ano)

5) Despesas

- Quanto vocês gastam em alimentação (MTn/dia)? O que vocês geralmente compram?
- Quanto vocês gastam para a manutenção/construção das casas (MTn/ano)? Em que são os gastos?
- Quanto vocês gastam em água (MTn/mês)?
- Qual material vocês utilizam como fonte energética para cozinhar: carvão ou lenha? Qual é o gasto (MTn/semana)?
- Quanto vocês gastam em taxas fixas (MTn/?) Que tipo de taxa é?
- Quanto vocês gastam em roupas (MTn/ano)? Que tipo de roupa é? E para quem?
- Quanto vocês gastam em transporte? Que tipo de transporte? Com que frequência o utilizam? Qual é a motivação?
- Quanto vocês gastam em educação(escola)? Qual o custo anual? E quanto vocês gastam em material escolar (MTn/ano)?
- Vocês tem outros gastos/despesas? Quais? Com que frequência?
- Vocês guardam dinheiro? Quanto (MTn/ano)?

- Vocês utilizam ou já utilizaram de fundos de micro credito? Em quais atividades?
Qual foi o valor do empréstimo?

6) Serviços

- Qual escola frequentam os membros da família atualmente? Onde è localizada? é um serviço gratuito? Na sua opiniao, é importante a frequência as aulas? Quais são perspectivas futuras dos seus filhos?
- Em caso de doença, quem vocês procuram? Hospital ou curandeiro? Porquê? Onde esta localizado o serviço? Onde as mulheres geralmente realizam o parto?
Aconteceram mortes em sua familia no ano passado? Qual foi a causa da morte?
- Onde vocês fazem as compras? Com que frequência vocês vão ao mercado central?
- Vocês costumam frequentar lugares de entretenimento? Quais? Quem vai? Com que frequência? Onde estao localizados? Quanto vocês gastam (MTn/semana)?
- Qual é religião de sua familia? Onde voces se encontram para os cultos religiosos?

7) Administração

- Vocês tem cargo público?
- Quem resolve os problemas do bairro? Quais são os problemas mais frequentes?
- Em que modo vocês participam da vida comunitária? Quais são os encontros em que vocês participam? Quem da família participa?
- Quem na sua família vota nas eleições?

8) Ambiente

- Que fonte energética utiliza para cozinhar? Quem vai apanhar o material? Onde procura ou de quem compra? Quanto paga?
- Qual è o consumo diário de água da familia? Onde vão buscar a água? Quem vai?
Quantas vezes? Qual é a distancia do lugar de abastecimento?
- Qual è a modalidade de eliminação do lixo? Qual é a razão?

9) Percepção das condições de vida

- As condição de vida melhoraram, pioraram ou sao iguais nos últimos anos? Qual é a razão?

- (No caso de novos moradores). Quais as vantagens e as desvantagens na vida em *Sena* comparando com a lugar em que voce vivia antes?
- Voce acredita que em futuro as condiçãõ de vida melhoraraõ, pioraraõ ou serao iguais?
- Quais sao as coisas boas e os problemas do bairro?
- Que falta principalmente no bairro?

- Outras observaçoẽs

Appendix 2

Matrix of data of the household survey

Nº	Bairro	Housing Typology	nº members	Household structure	Year of settlement	Origin Place	Educational level	Prevalent occupation	Second occupation	Buscadas	Machambas	Agricultural Income	Non-farm Income	Total Income	Items of Expenditures	Savings	Sanitary services	Educational services	Religion	Recreational services	Transportation means	Local Authority	Power Source	Electricity	Sanitary services	Water	Waste	Typology
32	CFM	Mudzi	4	monogama	1994	Malawi	1	agricultura		riscerze_nat	1	0		0	2	0	ospedale	secundaria	cattolica	bar	1	secretario	legna	0	latrina	0	combustione	1
13	September	Mudzi	8	monogama	1994	Malawi	1	agricultura		varie	1	0		0	1	0	ospedale_curandero	EP1	varie		1	secretario	legna	0	casa_banho	0		1
7	Tchela	Mudzi	4	monogama	1994	Malawi	1	agricultura		varie	1	0	1400	1400	1	0	ospedale				0	nfumo_secretari	legna	0	casa_banho	1		1
3	September	Mudzi	9	monogama	1994	Malawi	1	agricultura		riscerze_nat	1	0	1400	1440	1	0	ospedale	EP1_EP2			0	secretario	legna	0	casa_banho	0		1
5	Tchela	Mudzi	7	monogama		Sena	1	agricultura		varie	1	0	1500	1500	1	0	ospedale_curandero	EP1			1	nfumo_secretari	legna	0		0	interramento	1
28	Nhamoio	Mudzi	6	monogama		Sena	1	agricultura		riscerze_nat	1	0	1920	1920	1	0	ospedale	EP1	cattolica		0	secretario	legna	0	latrina	1	interramento	1
12	September	Mudzi	3	monogama	1994	Malawi	2	agricultura		riscerze_nat	1	0	2160	2160	1	0	ospedale_curandero	secundaria			1	secretario	legna	0	casa_banho	1		1
8	Tchela	Mudzi	5	monogama	2001	Malawi	1	agricultura	artigianato	riscerze_nat	1	0	2440	2440	1	0	ospedale_curandero		Malange		1	secretario	legna	0	casa_banho	1	interramento	1
22	Chupanga	Mudzi	13	poligama2	1994	Malawi	1	agricultura		varie	1	0	3750	3750	1	0	ospedale_curandero	EP1_EP2	cattolica		0	secretario	legna	0	casa_banho	0		1
14	September	Mudzi	8	poligama_sep	1994	Malawi	1	agricultura		varie	1	0	5680	5680	1	0	ospedale_curandero	nessuno	protestante		0	nfumo_secretari	legna	0	casa_banho	0	combustione	1
36	Nhamoio	Mudzi	5	monogama	1995	Malawi	1	agricultura		varie	1	0	7500	7500	2	0	ospedale	EP1	testi_geova		0	nfumo_secretari	legna	0		0	combustione	1
17	September	Mudzi	7	monogama	1998	Beira	2	coop_int	agricultura	riscerze_nat	1	0	7950	7950	2	1	ospedale	EP1	cattolica		1	secretario	legna	0		0		2
43	Nhamoio	Mudzi	5	monogama	1994	Malawi	3	street_comm	agricultura	varie	1	0	8000	8000	3	1	ospedale	EP1_secundaria	protestante	bar	1	nfumo_secretari	legna	0		0	combustione	2
6	Tchela	Mudzi	9	monogama	1994	Malawi	2	comm_agr_fam	agricultura		1	8192	0	8192	1	0	ospedale	EP2			1	secretario	legna	0	casa_banho	1		2
16	September	Mudzi	8	poligama2	1994	Distretto_Cua	1	street_comm	agricultura		1	0	8640	8640	4	1	ospedale_curandero	EP1		bar_cine	3	nfumo_secretari	legna	0	banho_latina	1	interramento	2
21	September	Mudzi	8	monogama		Sena	2	comm_agr_fam	agricultura	varie	1	4160	5840	10000	2	1	ospedale_curandero	EP1_EP2	cattolica		1	secretario	legna	0	latrina	0	interramento	2
15	September	Mudzi	13	poligama2	1988	Provincia_Sofala	1	comm_agr_fam	agricultura	varie	1	4800	6000	10800	1	0	ospedale	EP1	protestante		2	secretario	legna	0	casa_banho	0	combustione	2
39	Nhamoio	Mudzi	5	monogama	1994	Distretto_Cua	2	artigianato	agricultura	riscerze_nat	1	0	11000	11000	2	0	ospedale	EP2	Consolador	bar	1	nfumo_secretari	legna	0		0	combustione	2
41	Nhamoio	Mudzi	5	monogama	1994	Malawi	3	street_comm	agricultura	varie	1	0	12000	12000	3	0	ospedale				1	nfumo_secretari	legna	0		0	combustione	2
47	September	Mudzi	4	monogama	1994	Malawi	2	street_comm	agricultura		1	0	12000	12000	4	0	ospedale_curandero				1	secretario	carbone	0	banho_latina	1	interramento	2
29	Nhamoio	Mudzi	7	monogama		Sena	2	coop_int	artigianato		1	0	12960	12960	2	0	ospedale	EP2_secundaria	nazarena	radio	1	secretario	legna	0	latrina	0	interramento	2
18	September	Mudzi	7	poligama_sep	1993	Fuori_Provincia	1	comm_agr_fam	agricultura	riscerze_nat	1	8100	5160	13260	2	0	ospedale	EP1_EP2	cattolica		0	nfumo_secretari	legna	0		1		2
33	Nhamoio	Mudzi	9	poligama2	1994	Malawi	1	comm_agr_fam	agricultura	riscerze_nat	1	7500	7000	14500	3	0	ospedale	EP1		bar	1	secretario	legna	0		0	combustione	2
25	Nhamoio	Mudzi	7	monogama	1993	Malawi	2	street_comm	comm_agr	riscerze_nat	1	8750	7000	15750	5	1	ospedale	EP2	protestante		1	secretario	legna	0		1	interramento	2
2	September	Mudzi	5	monogama_ext	1995	Malawi	1	comm_agr_fam	agricultura		1	17500	0	17500	1	0	ospedale				0	secretario	legna	0		0		2
19	September	Mudzi	10	monogama	1990	Malawi	1	street_comm	agricultura		1	0	18000	18000	2	0	ospedale_curandero	EP1		bar	1	secretario	legna	0		0	interramento	2
37	Nhamoio	Mudzi	6	monogama	1995	Malawi	1	comm_agr_fam	agricultura	riscerze_nat	1	15000	3500	18500	1	0	ospedale	EP2			1	nfumo_secretari	legna	0		0	combustione	2
9	Tchela	Mudzi	9	monogama	1996	Malawi	2	infrastrutture	agricultura	riscerze_nat	1	0	23730	23730	1	0	ospedale	EP1_EP2	cattolica		1	nfumo_secretari	legna	0	banho_latina	1		2
44	Nhamoio	Mudzi	8	monogama	1995	Malawi	1	infrastrutture	agricultura	varie	1	0	24500	24500	4	0	ospedale	EP1_EP2	Consolador	bar	1	nfumo_secretari	legna	0		0	combustione	2
38	Nhamoio	Mudzi	5	monogama	1992	Distretto_Cua	2	comm_agr_fam	agricultura	varie	1	26500	0	26500	3	1	ospedale	EP1		bar	1	nfumo_secretari	legna	0		0	combustione	2
30	September	Mudzi	9	monogama	1994	Malawi	2	artigianato	agricultura	surplus_agr	1	3150	24000	27150	2	0	ospedale_curandero	EP1	protestante		1	secretario	legna	0	banho_latina	1	interramento	2
1	September	Mudzi	15	poligama3	1994	Malawi	1	infrastrutture	agricultura	surplus_agr	1	6150	21600	27750	3	0	ospedale_curandero	EP1		bar	1	secretario	legna	0	casa_banho	0		2
27	Nhamoio	Conventional2	4	monogama	2006	Beira	4	pubblico_imp			0	0	42000	42000	5	1	ospedale		As_aficana		1	secretario	carbone	1	latrina	1	interramento	3
41	CFM	Mudzi	3	monogama	1992	Provincia_Sofala	1	pubblico_imp	agricultura	surplus_agr	1	1500	42000	43500	5	0	ospedale	EP1_secundaria	protestante	bar	1	nfumo_secretari	legna	0		0	combustione	3
11	September	Mudzi	4	monogama	1994	Malawi	1	comm_agr	street_comm	riscerze_nat	1	41430	3000	44430	5	0	ospedale_curandero		cattolica		1	nfumo_secretari	legna	0	banho_latina	1		3
31	CFM	Mudzi	12	poligama2	1990	Provincia_Sofala	1	comm_agr_fam	agricultura	riscerze_nat	1	30000	24000	54000	5	0	nessuno	EP1_EP2	Malange		1	secretario	legna	0	latrina	0	combustione	3
26	Chupanga	Mudzi	8	poligama3	1986	Malawi	1	comm_agr_fam	agricultura		1	60000	0	60000	2	0	ospedale_curandero		As_aficana		0	secretario	legna	0		0	combustione	3
45	Nhamoio	Mudzi	9	monogama	2000	Provincia_Sofala	2	comm_trad	agricultura		1	0	60000	60000	4	1	ospedale	EP1		bar	4	nfumo	carbone	0		0	combustione	3
23	Chupanga	Mudzi	11	monogama	1976	Provincia_Sofala	2	comm_agr_fam	infrastrutture		1	16500	54000	70500	2	0	ospedale	EP1	cattolica		1	nfumo_secretari	legna	0	casa_banho	1	interramento	3
34	Nhamoio	Mudzi	12	poligama2	1998	Fuori_Provincia	2	comm_trad	comm_agr		1	50000	30000	80000	5	1	ospedale	EP1	protestante		4	nfumo_secretari	legna	0	latrina	0	combustione	3
20	September	Conventional2	9	monogama	2001	Provincia_Sofala	1	comm_agr	direz_industria		1	62100	36000	98100	5	1	ospedale	EP1_EP2	cattolica		1	secretario	carbone	1	banho_latina	1	interramento	3
30	Nhamoio	Conventional2	5	monogama	2006	Beira	3	pubblico_imp	street_comm	riscerze_nat	0	0	111400	111400	5	1	ospedale	EP2_secundaria		televisione	5	secretario	legna_carb	1	banho_latina	0	interramento	3
35	Nhamoio	Conventional2	6	poligama2	1994	Malawi	2	comm_trad	agricultura		1	0	160000	160000	5	1	ospedale	EP1	cattolica		4	nfumo_secretari	legna	1	banho_latina	0	combustione	3
4	September	Conventional1	16	poligama3	1994	Malawi	1	comm_moderno	infrastrutture		1	14000	942000	1181000	5	0	ospedale	EP1			4	secretario	legna	1	banho_latina	1		4
40	Chupanga	Conventional1	7	poligama2	1994	Malawi	2	comm_moderno	agricultura		1	0	2000000	3000000	5	1	ospedale	EP1	cattolica	bar	1	nfumo_secretari	legna	0		0	combustione	4
34	Chupanga	Conventional2	11	poligama2	1994	Fuori_Provincia	1	comm_moderno	agricultura		1	0	2000000	3000000	5	1	ospedale	EP1		televisione	4	nfumo	carbone	1	banho_latina	1		4
46	September	Conventional2	4	monogama_ext			2	comm_moderno			1	0	2000000	3000000	5	1	ospedale		cattolica	televisione	4	secretario	carbone	1	banho_latina	1		4

Appendix 3

Codification of the variables of the matrix of data

Research theme 1: housing

Bairro: Tchola (Tchola); 25 de Setembro (Setembro); Nhamioio (Nhamioio); Chupanga (Chupanga); CFM (CFM). *scale of measure: nominal*

Housing typology: Mudzi¹ (Mudzi); Hybrid Mudzi² (Mudzi2); Conventional House under construction³ (Conventional1), Conventional House (Conventional2). *scale of measure: nominal*

Research theme 2: composition of the household

Number of family members (n°_members): (actual cardinal value). *scale of measure: ratio*

Typology of household's structure (household structure): monogamous (monogama); monogamous + people with no kin relationship with the head of the household (monogama_ext); polygamous with two wives living in different housing compounds (poligama_sep); polygamous with two wives living in the same housing compound (poligama2); polygamous with more than two wives living in the same housing compound (poligama3). *scale of measure: nominal*

Year of settlement in the housing compound (year of settlement): (actual cardinal value). *scale of measure: ratio*

Place of origin (origin place)⁴: not available data (); Sena⁵ (Sena); Caia District (Distretto_caia); city of Beira (Beira); Sofala Province (Provincia_Sofala); other Provinces of Mozambique (Fuori_provincia); Malawi (Malawi). *scale of measure: nominal*

Educational level⁶ of the head of the household (educational level): none (); EP1 (1);

¹ Traditional housing compound

² Housing compound with a traditional spatial organization and a mixture of “traditional” *palhotas* and “conventional” constructions.

³ It is intended that the household lives in a *mudzi* at the moment, but is moving to a new “conventional house”.

⁴ It is not intended the place of birth, but the place the household was living in, before moving to Sena. The majority of the population, in fact, has experienced different relocations in the last twenty years.

⁵ It is intended that the family has always lived in Sena.

⁶ Educational level according to the Mozambican school system: *EP1* (primary school, up to the 5th grade); *EP2* (complete primary school, 6th and 7th grade); *secundaria* (secondary school, from 8th to 12th grade). There are

EP2 (2); secondary school (3); higher education (4). **scale of measure: ordinal**

Research theme 3: livelihood strategies

Sectors of household's prevalent occupation (prevalent occupation): subsistence agriculture (*agricoltura*); handicraft (*artigianato*); family agricultural trade ⁷ (*comm_agr_fam*), agricultural trade (*comm_agr*); domestic and street trade⁸ (*street_comm*); traditional trade⁹ (*comm_trad*); modern trade¹⁰ (*comm_moderno*); construction sector (*infrastrutture*); international cooperation (*coop_int*); public sector¹¹ (*pubblico_imp*). **scale of measure: nominal**

Sectors of household's second occupation (second occupation): none (); subsistence agriculture (*agricoltura*); handicraft (*artigianato*); agricultural trade (*comm_agr*); domestic and street trade (*street_comm*); construction sector (*infrastrutture*); industry management¹² (*direz_industria*). **scale of measure: nominal**

Buscados¹³: none (); recollection and selling of natural resources¹⁴ (*risorse_nat*); transformation and selling of natural resources¹⁵ (*risorse_nat_trasf*); selling of agricultural surplus and/or home-raised animals (*surplus_agr*); various (*varie*). **scale of measure: nominal**

Agriculture for self-consumption (*machamba*): yes (1); no (0). **scale of measure: binary.**

Monetary income deriving from agricultural trade (agricultural income): (*actual cardinal value expressed in Mt/year*¹⁶). **scale of measure: ratio**

also higher educational levels, such as university, postgraduate schools and courses. The survey registered just one case of higher educational level, consisting in a school teacher who finished the post-graduate school in Teacher Training.

⁷ Family agricultural trade is based on a “domestic mode of production”, in which family members cultivate land on their own and sell directly the surplus of agricultural production. It differs from “agricultural trade”, because in this case labor force is hired externally to the family.

⁸ Under this category have to be intended all traditional forms of commerce, which consist in the commercialization of goods in the street or in the housing compound of the trader. Goods can be self-produced by the trader (through the recollection and processing of natural resources) or can be also industrial manufactured goods which are bought wholesale in the central market of Sena and then retailed. This kind of trade is always family based.

⁹ This category comprehends all forms of traditional trade, which presents traditional modes of production (“domestic mode of production”; *banca movel* in the market of Sena) together with more modern characteristics and assets: motorcycles are bought and tracks are rent to transport goods, which are industrial manufacturing goods coming from Beira, other Provinces or even Countries (Malawi). Traders pay a tax to have their “banca movel” in the market. In this category has been also included a “cooperative of producers and traders of bricks (*tejolos*).

¹⁰ Modern trade consists in a commercial activity based on a shop in the central market of Sena, where industrial manufactured goods - bought in Beira – are sold. This category includes also a trader who commercializes oxen on a national scale and with neighbouring countries. To this kind of activity are associated some assets, such as transportation means (motorcycles and trucks), rented shops and waged employee.

¹¹ Among the interviewed households: 2 school teachers and the head of the police.

¹² Among the interviewed households: the director of the cotton factory.

¹³ Odd jobs, which produce monetary income to integrate other main activities (agricultural and non-farm).

¹⁴ Principally firewood.

¹⁵ Self-production of ice-creams, *refrescos*, *bolos* and *aguardiente*; production of building elements: *estacas*, *barrotes* and *adobe*; production and selling of smoked fish.

¹⁶ The change at the time of the survey was: 1 euro=38 MTn.

Monetary income deriving from non-agricultural activities (non-farm income): not quantifiable (); (actual cardinal value expressed in Mt/year). **scale of measure: ratio**

Total Income: not quantifiable (0); (actual cardinal value expressed in Mt/year). **scale of measure: ratio**

Items of expenditure: goods, not freely available in nature, to satisfy basic needs¹⁷ (1); goods, also freely available in nature, to satisfy basic needs¹⁸ (2); goods to satisfy psychological needs¹⁹ (3); complex expenditures²⁰ (4); improvement of the housing condition²¹ (5). **scale of measure: ordinal.**

Savings: no (0); yes (1). **scale of measure: binary.**

Research theme 4: access to socio-cultural resources

Access to sanitary services (sanitary services): none (*nessuno*); hospital (*ospedale*); hospital and *curandero* (*ospedale_curandero*). **scale of measure: nominal**

Access to educational services (educational services): none (); EP1 (*EP1*), EP2 (*EP2*), EP1 and EP2 (*EP1_EP2*), secondary school (*secundaria*); EP1, EP2 and secondary school (*EP1_EP2_secundaria*). **scale of measure: nominal**

Religion: no answer (); Catholic (*cattolica*); Anglican and Lutheran (*protestante*); *Igresia Nazarena* (*nazarena*); Jehovah's Witnesses (*test_geova*); *Assembleia Africana* (*As_africana*); *Johane Malange* worship (*Malange*); *Igresia do Consolador do Spirito Santo* (*Consolador*); various (*varie*). **scale of measure: nominal**

Access to recreational services (recreational services): none (); bar (*bar*); bar and cinema (*bar_cine*); battery powered radio (*radio*); television (*televisione*). **scale of measure: nominal**

¹⁷ It is intended all those basic needs, that cannot be satisfied only through the direct and free access to natural resources: water (there is a tax of 5MTn/month for using the hand water pump), clothes and food (in no case the interviewed households were able to satisfy the food supply with the production of their own *machambas*). Moreover, school material is another expenditure common to all families. Attending the primary school, in fact, is considered a basic need among the inhabitants of the small town of *Sena*.

¹⁸ It is intended that households, in addition to the expenditures of the previous category, have also others related to housing maintenance (changing the straw-roof and the *estacas*) and firewood. These expenditures aim to satisfy basic needs (housing and eating), which in the previous category were satisfied by the direct provision of resources freely available in nature. In this case, instead, firewood and building materials are bought in the market or from street traders.

¹⁹ It is intended that households, in addition to the expenditures of the previous categories, have also others related to entertainment (bar and cinema) and transportation (*chapa*).

²⁰ It is intended that households, in addition to the expenditures of the previous categories, have also others related to the management of small-scale activities (licenses, taxes, waged employees and so on) and to investments in the improvement of these activities (i.e. to increase the production of the next agricultural season or to buy more goods to commercialize).

²¹ It is intended that households, in addition to the expenditures of the previous categories, invest their money mainly in the improvement of the housing conditions, by substituting the *palhotas* of the *mudzi* - completely or in part - with conventional houses.

Transportation means²²: none (0); bicycle (1); bicycle and bici-taxi (2); bicycle and *chapa* (3); motorcycle, bicycle and *chapa*/track (4); auto, bicycle and *chapa*/track (5). **scale of measure: ordinal.**

Recognized local authority (local authority): no answer (); '*nfumo* (*nfumo*); '*nfumo* and *secretario do bairro* (*nfumo_secretario*); *secretario do bairro* (*secretario*). **scale of measure: nominal**

Research theme 5: use of environmental resources

Power source for cooking (power source): firewood (*legna*); firewood and coal (*legna_carb*); coal (*carbone*). **scale of measure: nominal**

Access to electricity (electricity): no (0); yes (1). **scale of measure: binary.**

Sanitary services: none (); latrine (*latrina*); *casa de banho* (*casa_banho*); latrine and *casa de banho* (*banho_latrina*). **scale of measure: nominal**

Water supply system (water): traditional well (0); hand water pump (1). **scale of measure: binary.**

Solid waste management (waste): none (); combustion²³ (*combustione*); dumping²⁴ (*interramento*). **scale of measure: nominal**

²² It is intended not only the transportation means that are owned by the household (bicycles, bici-taxi, motorcycles and autos), but also those commonly used to travel (generally a small bus, named *chapa*) or rented to transport goods to trade (trucks).

²³ Solid wastes are burned within the housing compound.

²⁴ Solid wastes are buried within the housing compound.

Appendix 4

Landsat scene of *vila de Caia*



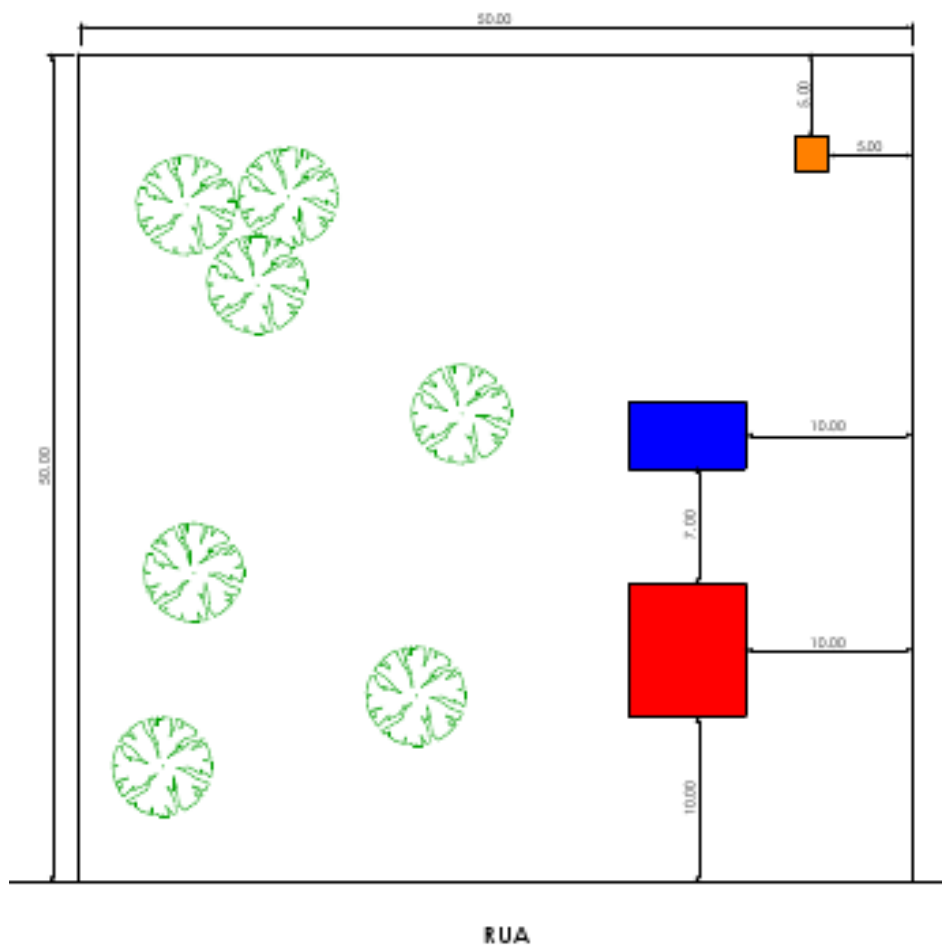
Appendix 5

Landsat scene of *vila de Sena*




Appendix 6

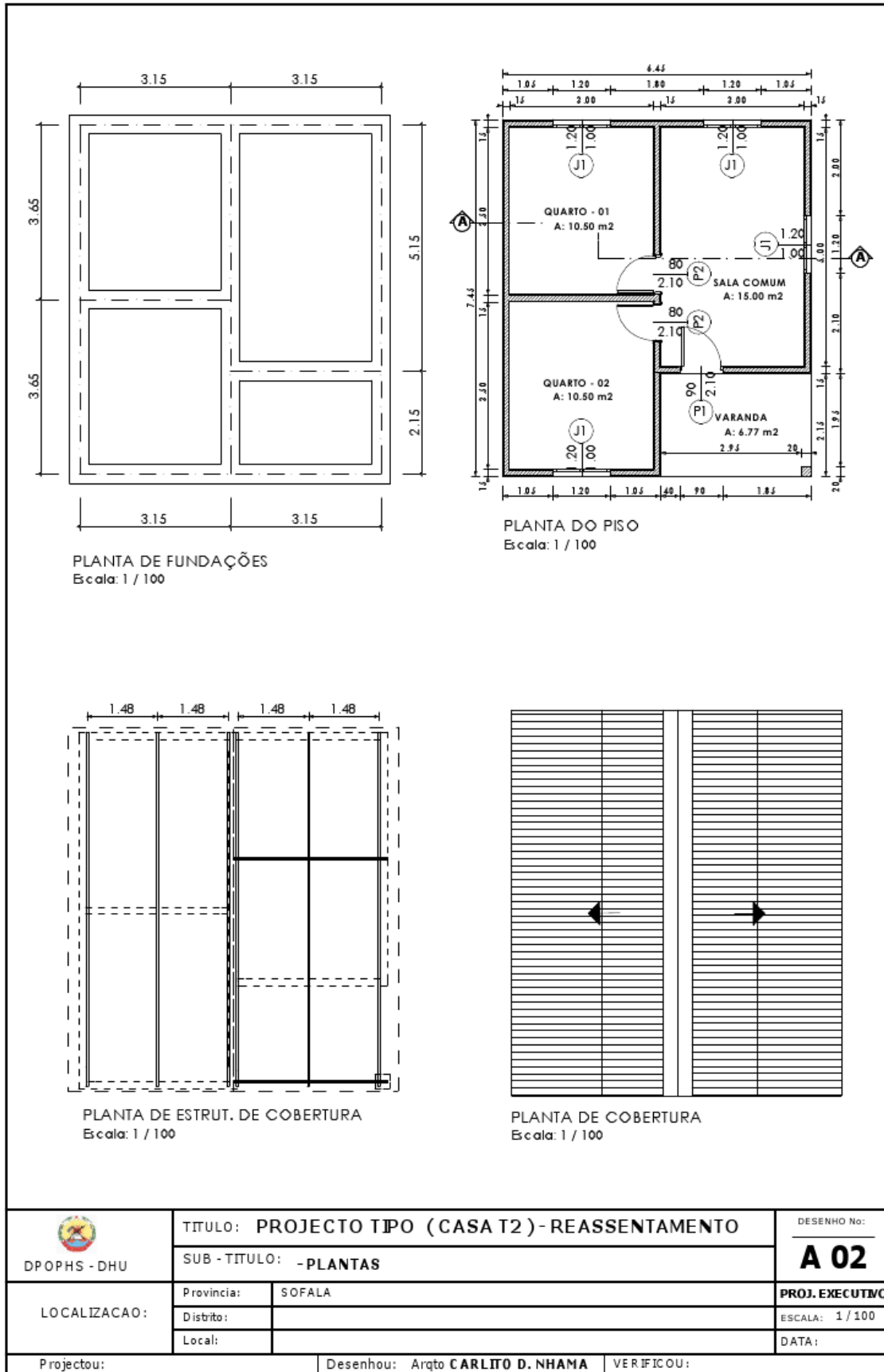
Resettlement project



LEGENDA:

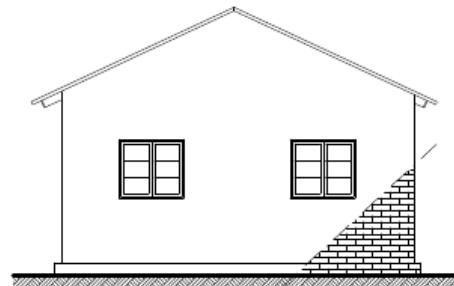
- CASA PRINCIPAL
- DEPENDÊNCIA
- LATRINA MELHORADA

 DPOPHS - DHU	TÍTULO: PROJECTO TIPO - REASSENTAMENTO		ORÇAMENTO Nº: A 01
	SUB-TÍTULO: - IMPLANTACAO GERAL		
LOCALIZACAO:	Província:	SOPALA	PROJ. EXECUTIVO
	Distrito:		FOLHA: 1 / 330
	Local:		DATA:
Projector:	Desenhador: Arqto CARLITO D. NIAMA	VERIFICOU:	

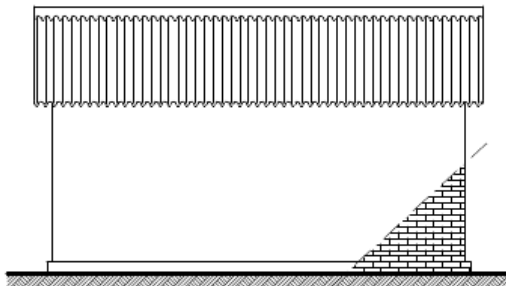




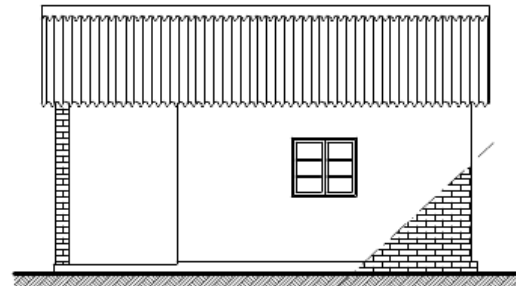
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Escala: 1 / 100



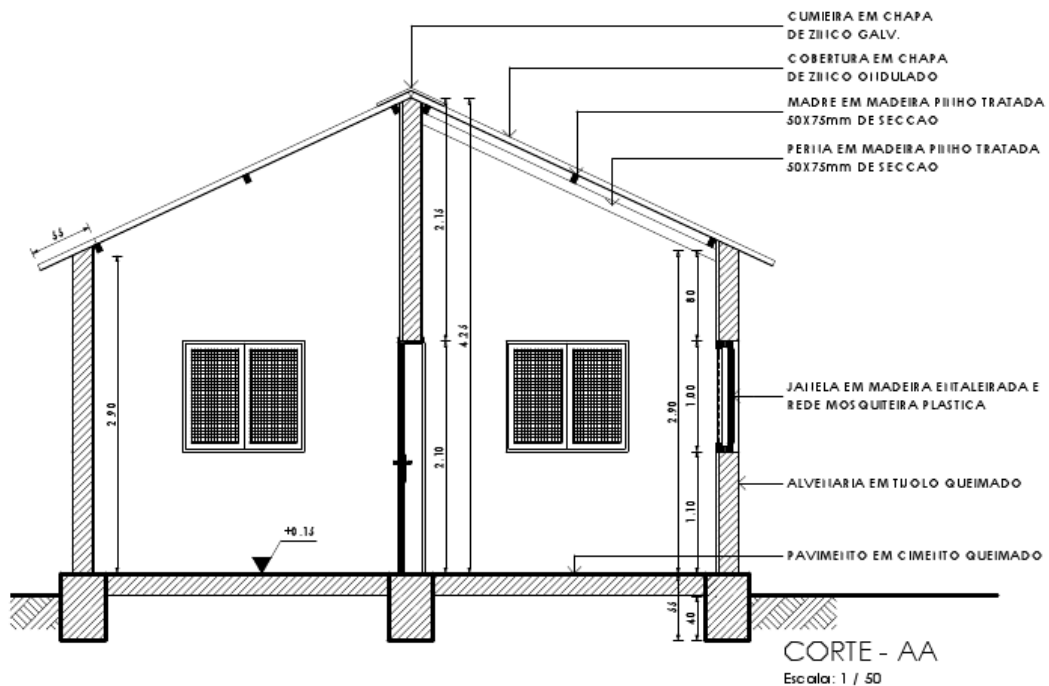
ALÇADO POSTERIOR
Escala: 1 / 100




ALÇ. LAT. ESQUERDO
Escala: 1 / 100



ALÇ. LAT. DIREITO
Escala: 1 / 100



 DPOPHS - DHU	TITULO: PROJECTO TIPO (CASA T2) - REASSENTAMENTO		DESENHO No: A 03
	SUB - TITULO: -ALCADOS, CORTE		PROJ. EXECUTIVO
LOCALIZACAO:	Provincia: SOFALA	ESCALA:	
	Distrito:	DATA:	
	Local:		
Projectou:	Desenhou: Arqto CARLITO D. NHAMA	VERIFICOU:	

Appendix 7

Conceptual framework for spatial planning in rural towns

KEY TOPICS	RISKS	PLANNING PRINCIPLES	ACTIONS
Coexistence of “traditional/subsistence” and “modern/capitalist” modes of production	Socio-spatial separation of the population	1. Protection of “subsistence” settlement patterns.	<ul style="list-style-type: none"> • Including agricultural land within spatial plans’ boundaries. • Security of agricultural land tenure for all households. • Free access to natural resources. • Appropriate size of housing plots.
		2. Integration of “traditional” and “modern” settlement patterns.	<ul style="list-style-type: none"> • Equal distribution of services and infrastructures within the urban system. • Design of main viability. • Strategic location of “Key projects”. • Upgrading of already existing built areas.
Dependence from natural resources	Over-exploitation of natural resources	3. Nature conservation and livelihood improvement	<ul style="list-style-type: none"> • Including natural systems within spatial plans’ boundaries. • Sustainable management of forests, agricultural land, water bodies. • Sustainable management of natural systems within built areas.
Persistence and transformation of vernacular housing culture	Housing models inappropriate to local contexts	4. Housing typologies inspired by local material culture.	<ul style="list-style-type: none"> • Security of land tenure for housing. • Localization of urban expansion areas. • Vernacular housing compound as basic unit for the design of urban expansion areas. • Constructing materials available <i>in loco</i> and improvement of traditional building technologies. • Building process: assisted self-construction. • Housing upgrading. • Conservation of vernacular settlements as cultural heritage.
Overlapping of formal institutions and traditional authorities	Exclusion of local communities and ineffective planning processes	5. Inclusive local <i>governance</i> strategies	<ul style="list-style-type: none"> • Involvement of both formal institutions and traditional authorities. • Participation of local communities. • Inclusion of women. • Two levels of the decision-making process: <i>Conselho da Vila Rural, Assembleias do poço.</i>
		6. Effective planning processes.	<ul style="list-style-type: none"> • Training of local technicians. • “Low-cost” planning. • “Basic” planning. • “Reverse” planning: starting from the implementation.
