Research

1. Front page

2. The immense growth of cities due to rural urban migration has been a global issue for a long time, and will only increase in the future. Presumably, in 2050 two thirds of the population will live in cities, while in 1950 this was only one third. The effects on the urban environment are great, and a lot of big cities struggle to accommodate the great influx of rural migrants (Saunders, 2010). So does Addis Ababa.

3. While on most continents urbanization already reached high levels, Africa is still on its way.

4. At the moment 85% of the population of Ethiopia still lives in the countryside, but more and more people move towards the cities, in search for a better future.

5. In Ethiopia, there are many reasons for migrating, such as job opportunities, education, or escaping an arranged marriage. Most migrants come in search for work, a better future for them and their children.

6. The change from rural to urban is often a great one. What most migrants have in common is that they have contacts in the city, somewhere they can go to at arrival. Most migrants first go to relatives or people from their village of origin who have migrated earlier, for a place to stay and to learn about the urban way of life. Having a social network for most people is crucial for taking the decision to migrate. Those who have nobody to go to have a very hard time and often go back or end up on the streets. Consequently, most migrants end up in transitional spaces, ‘or arrival cities’, often slums or illegal settlements. The living conditions of these spaces are generally bad, but in return they have a base where they can live cheaply, find a job, build up a network and learn how to survive in the city. Earning and saving money for their future, their children, and people left in the village is more important than a comfortable place to stay.

7. “These transitional spaces - arrival cities - are the places where the next great economic and cultural boom will be born, or where the next great explosion of violence will occur. The difference depends on our ability to notice, and our willingness to engage.” (Saunders, 2011, p. 3) These ‘arrival cities’ are crucial for the success of the migrants, but also for the future of the city, because soon they will become the city.

8. What is interesting in Addis Ababa, is that in general groups from different parts of the country settle in the part of the city where they arrive at the bus station, so close to the main roads leading from their region. This way enclaves of people from different ethnic groups are found within the city, where people are adapting to city life, but keep contact with their rural traditions and habits.

9. The result of migration in Addis Ababa is clearly visible in the horizontal expansion of the city. Migrants bring their rural building skills in practice in the city and construct simple houses of earth and wood or whatever is available. The result is an intricate network of one-storied houses, small shops and production areas along courtyards, larger streets or alleys, and small squares.

10. Like many cities in third world countries, the urban fabric of Addis Ababa sometimes seems more like a collection of villages than a modern city.

11. Another important contributor to this village-like atmosphere is the practice of urban agriculture. During our visit it surprised me how green the city was.

12. Urban agriculture is practised all over the city, firstly along the shores of the Akaki river, where since the early times of the city crops were grown on grounds that were not suitable for building. But in fact everywhere along the streets and in courtyards vegetables, trees and plants are grown. In western countries urban agriculture is a new hype of the last few years, but in Addis Ababa it has been practiced since the very beginning of the city’s existence.
13. Urban agriculture on private compounds of hotels, schools, churches, etc.

14. Urban agriculture on the street

15. Urban agriculture on the street

16. Urban agriculture in the slums, when there is no space.

17. However, at the moment urban agriculture in the city is generally not practised by migrants or the poorest, but rather by citizens that already have access to the means and information to get hold of a piece of land and other necessities (Kebbede, 2010). This is a shame, because access to enough food and a varied diet is one of the biggest problems for the poorest inhabitants of the city. Most of them simply don’t have the money to buy food.

18. What surprised me even more, was the fact that not only did people grow plants for food or other practical purposes, but even in the poorest neighbourhoods there were trees, pots or bags with flowers and plants that enlivened the space and made it much more inviting.

19. This need for having plants around seems also reflected in cultural practices like covering the floor with fresh green grass during the daily coffee ceremony or in the entrance of shops and restaurants as to create a more natural and inviting environment.

20. Another aspect that reminds of a village, is the hierarchical street pattern, leading you from the large traffic roads deeper and deeper into the neighbourhood. This creates a smooth transition from the private sphere and the shared or private courtyard onto the streets and towards the city centre.

21-22. First level in hierarchy

23-25. Second level in hierarchy

26-28. Third level in hierarchy

29-31. Fourth level in hierarchy

32-34. Fifth level in hierarchy: The collective courtyards came into existence by coincidence, when land was divided during the derg period, but have grown into an important space in modern city life. They are used for domestic activities like washing and drying laundry, for growing flowers and food, for coffee ceremonies and other social activities. Also from an economical perspective these open spaces are very important. They are used for businesses like preparing food, laundry service, business meetings, and allow people to use their home environment as an income source. They also make the city’s poorest parts much greener and liveable than would be expected from slums.

35-37. References hierarchy

38. While the existing fabric of Addis Ababa has a lot of qualities, not much of this is translated into the housing projects that the government initiated to house the growing population of Addis Ababa.

39. The local government has been trying to catch up with the city’s growth mainly by means of the grand housing scheme. A lot of slum settlements are being demolished with the intention to relocate the former inhabitants in newly built condominium flats. While the structural quality of these apartments is much better than of most houses, a lot of other qualities are lost.

40. Especially lacking are possibilities for home businesses, and outside space for domestic and social activities. All chances and possibilities of the arrival city are lost. Apart from this, for recent migrants and poor citizens these apartments are unaffordable.
Location

41. Abajale

42. The location that I have chosen, Abajale, is situated in kebele 07 of Kolfe-Keranio, one of the poorest sub-cities of Addis Ababa.

43. The neighbourhood is quite well connected to the city, but remains a bit detached.

44. Just as many river areas in Addis Ababa, the land around the river Akaki was cultivated by urban farmers. Urban farmers in Addis Ababa mainly originate from the Gurage region (Duressa, 2007). Most of them are second or third generation migrants, but new migrants are welcomed to work on the fields. Especially Gurage migrants are wanted, as they are familiar with irrigation based agriculture (Girma T. Kassie, 2008).

45. Over time a lot of new migrants illegally settled in the area. About ten years ago, the government decided to legalize the settlement. The main roads were paved, and collective water pumps were installed.

46. The neighbourhood has grown fast over the last decade, and became quite crammed.

47-52. Growth locally

53-54. Growth larger scale. Also around the neighbourhood population growth is visible. While ten years ago the land around Abajale consisted mostly of fields and some small villages, now new neighbourhoods are popping up everywhere. In 2002 there was hardly a paved road connecting Abajale to the city, and now the main road has been paved and widened. The city is getting closer very fast and soon this area will be swallowed by the city. To me this makes it even more important to protect these green places as oases in a city that is slowly turning into a modern metropolis.

55-56. On the higher part of the valley a police academy is situated. There are some concrete barracks, that have been built only in the last few years, and the rest of the ground is covered with a eucalyptus forest. Eucalyptus trees have been imported from Australia by emperor Menelik the 2nd, and have become an invasive species in a lot of areas. One of the biggest problems is that they tend to drain the soil, which is not very convenient around farms.

The area is bordered by a large road, which has been paved recently. This is the backbone of the settlement and the most lively area.

57-58. Then the urban village as I call it has become quite crammed over time. The alleys are completely closed off with corrugated iron sheets and walls.

59-60. Then of course the farms, the income source of a lot of inhabitants. Farmers have a hard time though. Farm sizes have shrunk a lot due to constant redistribution and sub renting of plots. The urban farmers get no subsidies from the government, and often have no money for fertilizer and seeds of good quality.

61-62. The Akaki river provides water for irrigation of the fields, but it is very polluted with industrial and human waste, causing health risks for the farmers as well as for the consumers of their products. In the dry season there are often conflicts about irrigation water. The Gurage farmers traditionally irrigate their crops through furrow irrigation, by building micro-dams in the river. When water levels are low a lot of farms have water shortages.
Strategy

63. Project goal:
Strengthening Abajale’s position as a place of transition between rural and urban:
Protecting the green character, the village-like qualities of the neighbourhood and rural skills such as agricultural production, while accommodating an amount of inhabitants and public and commercial functions fitting for a city.

64. Themes: Income generation, the environment, hierarchy of spaces, communal building

65. Production/income generation
The largely rural population of Abajale is skilled in farming, vernacular building and rural crafts that can create a basis for productive and commercial activities, with the whole city as a consumer market. A good part of the inhabitants can find employment on the farms, or in the processing of food products, but an urban environment needs to offer a larger diversity of productive and commercial activities. On different scales income generation has become a driving force for my project.

Farms – crops on a larger scale, for city market

River

Bamboo forest – construction

Public green - The strips of green running down the mountain from the large road to the agricultural fields, are for public use. On it are public functions, such as a small school, a clinic or sports field, but also small factories and food processing plants, where local inhabitants can find employment in the packaging and processing of food.
The communal grounds are planted with plants for public use, such as fruit trees, coffee, bamboo, and decorative plants, and can also be used as grazing grounds for cattle. Furthermore, markets can be held and small shops will cater for the inhabitants and visitors.

The courtyard in Addis Ababa is used for many activities. Apart from domestic activities, a lot of social and commercial activities take place here. It is also a place for business meetings and work, as many women earn their income by doing laundry and cooking food for wealthier people. Plants that are grown are mainly for home consumption, such as crops, fruit trees, coffee, enset (main staple food for many Ethiopians, and especially the Gurage), but also flowers and other decorative plants.

On the scale of the home the dwellings are flexible enough to turn an apartment, or part of an apartment into a shop, or if no space can be sacrificed inside the home, the platform in front of the house can be used to display and sell produce. The rooftops are mostly suitable for leafy and smaller vegetables and fruits, herbs, medicinal plants, and small livestock, mainly goats, sheep, and chickens. On the higher parts of the roofs, that dry out more quickly, drought resistant plants such as aloe vera and prickly pear can be grown. Products can cover a great part of the food consumed at home, and surpluses can be traded with neighbours, or sold on the market to supplement the family’s income.

Care for the environment – smart use of natural resources
As mentioned before, the way the environment is handled can be improved. This will not only set an example and make the area more liveable, but can also increase productivity and efficiency of the farms and improve the quality of the produce. On the urban scale working together as a community can improve the way in which natural resources are used.

Deforestation and pavement of large parts of the ground have a large impact on water management. In the wet season rainwater runoff flows very fast to the rivers, with as a result greater flood risks and erosion of the riverbed and borderland. In the dry season drought becomes a problem, especially more uphill. By introducing more green the ground can absorb more water and release it slowly into the ground water. Green roofs can also slow down rainwater runoff.
- water diagram -
Another issue the farmers have is lack of fertilizer. With a more efficient food and waste cycle part of this can be solved. The largest part of the waste produced at home is organic, and normally simply thrown away.

- food and waste cycle -

On the scale of the building care of the environment is visible mostly in the use of materials. Apart from the concrete foundation and plinth, that are needed to withstand the two to three story high building and the heavy green roof, the buildings mainly consist of materials that can be locally found or grown, and have a low impact on the environment.

With a protective roof and a protective lime or gypsum render on more exposed parts of the walls, cob buildings in for example England have lasted for centuries, but if the building needs to be demolished, the material can be easily reused. The floor and roof structure are made of bamboo, which grows much faster than most trees, and does not drain the soil like eucalyptus.

Hierarchy of spaces - Security vs. collectivity

Addis Ababa is a relatively safe city, but especially at night security becomes an issue. As I mentioned before, the city fabric knows a clear hierarchic pattern from the public to the collective to the private sphere. On top of that, large fences, walls, barbed wire, cut of the protected atmosphere of the private and collective space from what is happening on the streets. To create a secure neighbourhood, but keep the sense of community I tried to create a smooth transition from the more public places to the private sphere.

Main road
This large street is the backbone of the neighbourhood. It is the main connection to the large road leading to the city centre, and also functions as a border between the settlement and the terrain of the police academy. The road has been paved only last year, and there is no real traffic at the moment, except for pedestrians. To strengthen the connection between the neighbourhood and the city, and make it easier for inhabitants to find jobs and education in the centre, this road should be connected to the public transport system.

Public green
Strips of green and roads or pathways run down the hill, connecting the large road with the agricultural fields. The green open spaces function as small public parks and house public functions such as schools, clinics, sports fields, and commercial functions such as shops and small marketplaces.

Street
Parallel to the main road are smaller streets to which most dwellings are faced. The streets are accessible to cars, but are mainly meant for the inhabitants. At the moment practically nobody in the neighbourhood owns a car, but in the future part of the sidewalks might be converted into parking spaces.

Alley
In between the clusters are alleys that connect the streets with each other. The alleys are part of the pedestrian network, and not accessible to cars. They will be used mainly by inhabitants who want to take a short route to their home or the shared courtyard.

Shared courtyard
The shared courtyard is the most intimate of open spaces. It is never entered directly, but through the home or through the network of streets and alleys. The courtyard is mainly meant for the people living around it. During daytime the courtyards might be opened up, forming a sequence of green spaces, and at night they can be locked of.

Home
To negotiate between the secure space of the home, and the unpredictable situation of the street, the sequence of spaces leading to the inside offer a smooth transition from public to private. The ground floor apartments have their main entrance on a platform that lifts the house slightly from the street, so that the inhabitants are in close contact with the street, but can pull back easily, and if necessary, close the it off at night. The space can be used for recreational purposes, as well as for selling things and doing business. As in a traditional Ethiopian home, the home is entered in the living room. In the middle of the house
are small rooms or alcoves for sleeping, and in the back the kitchen and bathroom are located. On the back side of the house another platform negotiates between the home and the collective courtyard. This platform can be used as an extension of the kitchen, for washing, for drying food, etcetera. For the upper apartments there is another transitional space, because they enter their private terrace through the shared staircase. Four to six apartments share a staircase, that discloses the upper apartments, but also leads to the roof. This circulation space can be closed off for safety reasons, but has an open bamboo structure and is open on both facades on the higher levels, because it also supplies the adjoining kitchens and bedrooms with extra ventilation and daylight.

Vernacular building techniques in a modern urban environment
Kolfe Keranyo is one of the poorest sub cities of Addis Ababa. If new and better dwellings are going to be built, they need to be constructed in a way that makes them affordable even for the poorest citizens of Addis. By using locally available materials, such as earth and bamboo a great part of the costs can be cut already. Another strategy is to let the community participate in the building process. This saves costs, but also offers opportunities for people to bring their vernacular building skills to use and to improve their skills with new construction methods, so that they can find employment in maintenance and construction after the houses have been built. Apart from this, building together strengthens bonds within the community and gives people the opportunity to participate in the process.

The foundation and infrastructure will be built mainly by professional builders, as this is the most complicated part of the building process. The foundation needs to be secure, as the two to three story buildings with a green roof will mean a heavy load.

Using cob has a lot of advantages: it is cheap, environmentally friendly and the material can be sourced locally. It is similar to traditional building techniques in Ethiopia, making it easier to integrate in local building tradition.

There are obviously also some restraints. The walls need to be very thick, especially at the bottom, Apart from this, building with cob makes it possible for everybody who is interested to be involved. The cob walls require simple skills. Practically anyone can participate in the building process. A short training and regular supervision of an experienced cob builder will ensure qualitative walls. Apart from the actual cobbing, people are needed for the mixing of the cob, making well-proportioned pieces of cob, and throwing them to the builders that are working on the walls. A modern method practised in Oregon, is to mould loaves of cob that are passed over from person to person and thrown up to the builders. This makes it easier to build higher buildings than with the traditional method of using a pitchfork to lift the cob onto the wall.

Bamboo – some further education needed, but simple construction, especially for people who already have rural building skills. Bamboo as a construction material is getting more and more popular, so improving these skills can be useful in the future.

Green roof – simple and cheap materials