



## Diplomarbeit

# WHEREVER IT RAINS, WE GO THERE

AFAR NOMADIC ARCHITECTURE: TRADITION AND CHALLENGES

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# ABSTRACT

Der Schwerpunkt dieser Arbeit liegt bei einer anthropologischen und architektonischen Aufnahme des Lebensstiles der Afar-Hirten in Äthiopien, aus der die Siedlungsstrukturen und Wohntypologien resultieren, aber auch der gegenwärtigen Prozesse der Urbanisierung, die das Erhalten der traditionellen Lebensweise gefährden.

Dabei werden verschiedene sozioökonomische, ökologische und technische Aspekte der nomadischen Architektur erforscht: wie wird das Weiden der Herden organisiert, wie beeinflusst das die Siedlungsstrukturen und Hausformen, wer ist für das Bauen zuständig, wie passt sich das Afar Haus den Klima-Gegebenheiten an und wie wird die lokale Ökologie in Zusammenhang mit verfügbaren Ressourcen balanciert.

Anschließend werden die politisch-ökonomische und ökologische Veränderungen in der Region in den letzten Jahrzehnten untersucht, die dazu führten, dass der Zugang zu den der Afar zuvor frei zugänglichen Ressourcen wie Wasser, Weidegebiete und Waldbestand erschwert und im schlimmsten Fall komplett untersagt wird. Die lokalen Nachbarschaftskonflikte, die daraus resultieren, fordern konstante Anpassungen der Bewegungsrichtungen und Niederlassungsschemata. Diejenigen, die dadurch ohne Existenzmitteln bleiben sind gezwungen ihr Lebensstil auf ein sesshaftes anzupassen und siedeln sich in urbanen Gebieten an.

# ABSTRACT

The main focus of this paper is gaining an anthropological and architectural insight into the lifestyle of Afar pastoralists in Ethiopia, from which habitation forms and housing typologies are derived, as well as into the current processes of urbanization that endanger the preservation of the traditional way of life.

Various socio-economic, ecological and technical aspects of nomadic architecture are explored here: how is the pasture of the herds managed, how does it affect the structure of the settlements and choice of dwelling forms, who is responsible for building, how is the Afar House adapted to environmental conditions and how is the local ecology balanced in connection with available resources.

Finally, the political, economical and ecological changes in the region over the past decades are investigated, which have made access to the previously much more easily attainable for Afar resources such as water, pasture land and forest very difficult and, in the worst case, completely restricted. The local conflicts with neighbors resulting from these, call for constant adjustments to the migration patterns and settling schemes. Those who are left without means are forced to adapt their lifestyle to a sedentary one and settle in urban areas.

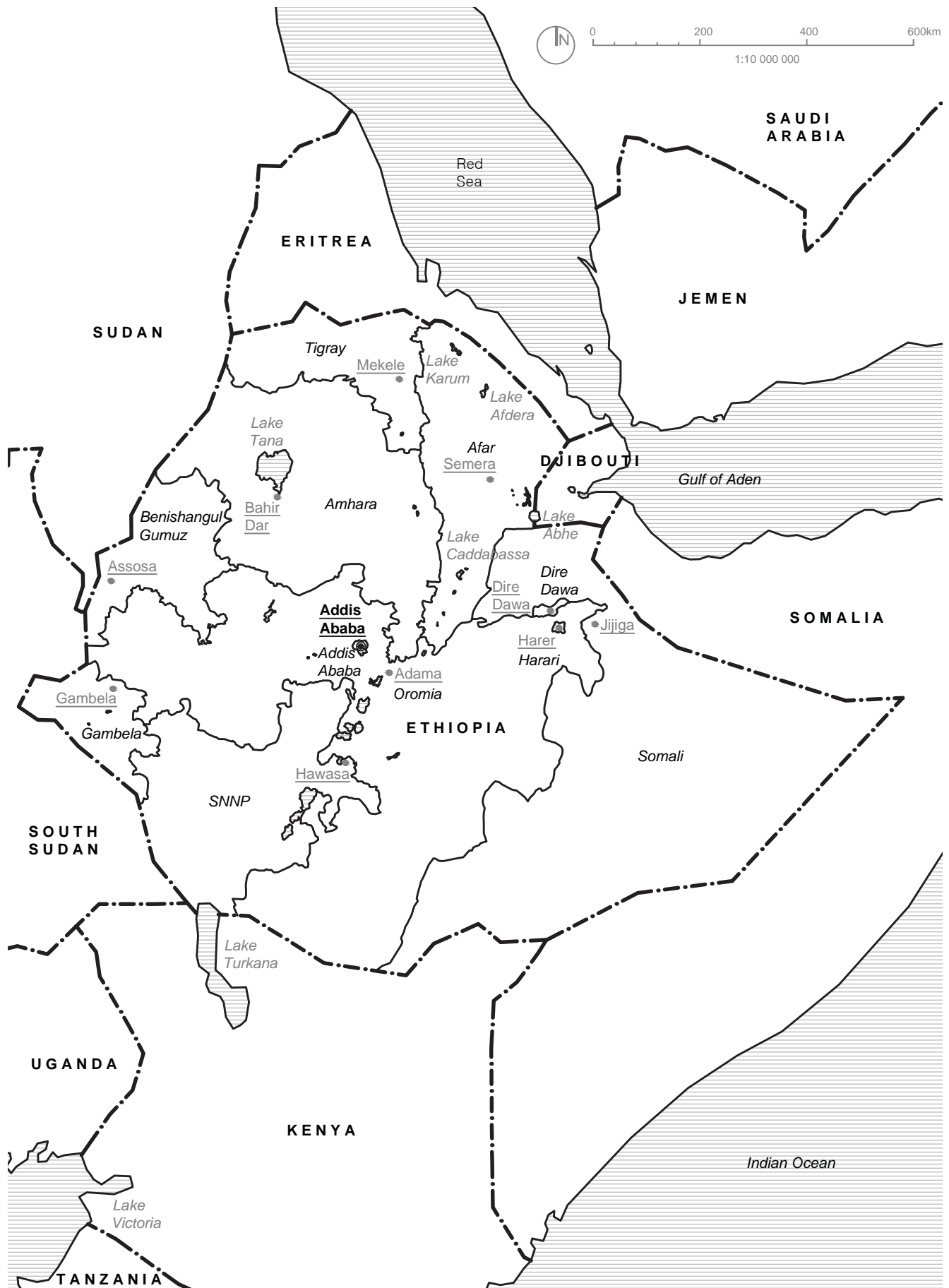


Fig. 01: Map of Ethiopia (2015): Regions, major urban centres



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I am also grateful to Alice Eigner, my field study partner and friend for keeping me great company and carrying for smooth and productive cooperation. The possibility to exchange insights on ethnological and architectural matters broadened my perception of nomadic architecture on all levels.

And last, but not least, I would like to thank the International Office of the Technical University Vienna for granting me scholarship. Without this financial support my journey to the Afar Region would not have been possible.

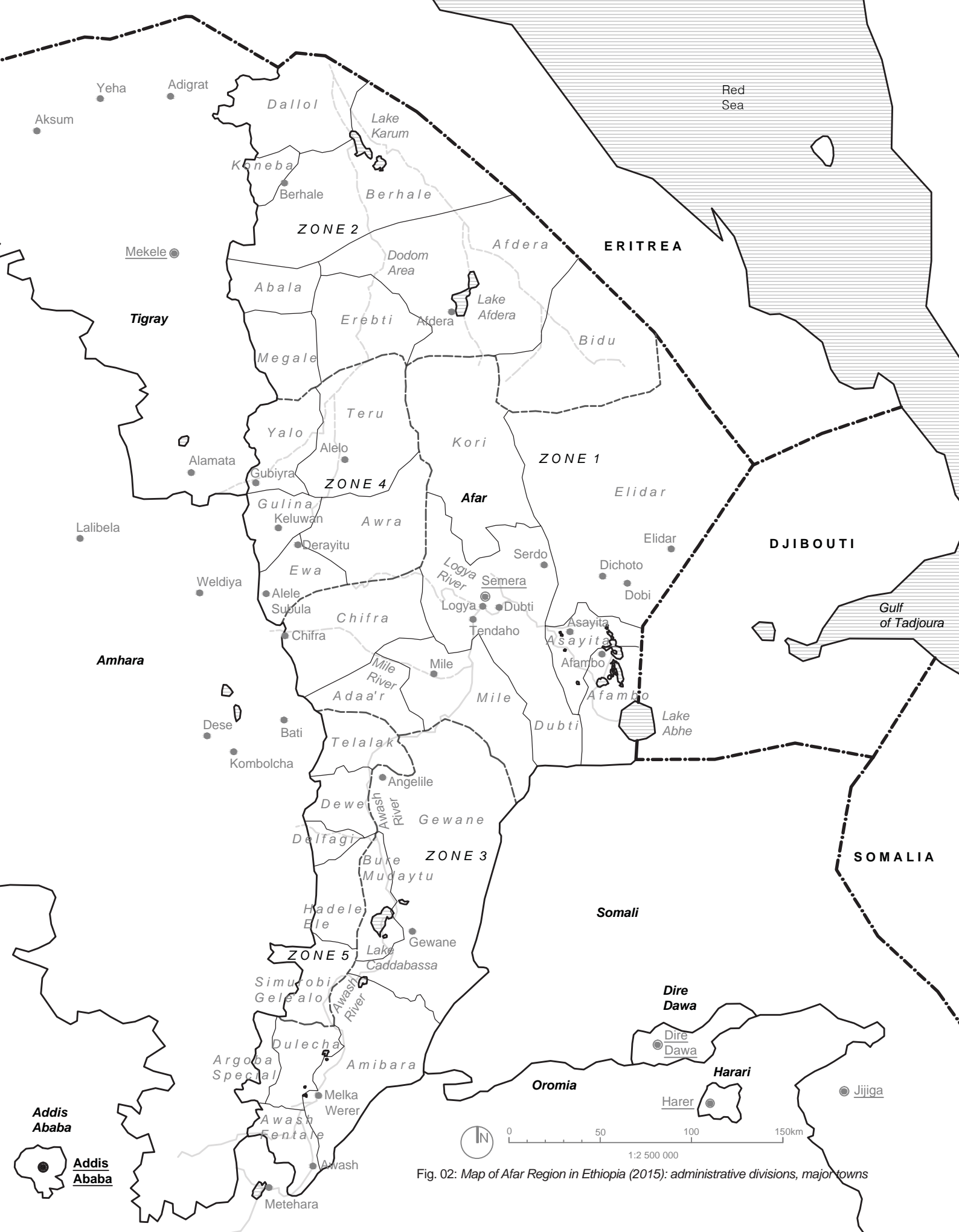


Fig. 02: Map of Afar Region in Ethiopia (2015): administrative divisions, major towns

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# INTRODUCTION

## AFAR REGION: SOCIO-ECONOMICAL CONTEXT; METHODS

It is early morning in February 2012 and Mr Mohammed is preparing for school. He wears short hair, a modern tailored shirt and a traditional long male *sarong*. Sitting on a stool in front of the house, he finishes his modest breakfast consisting of bread and yoghurt, while his young wife lights fire for tea in their traditional, round house *daboyta* and entertains their new born baby. In their compound there are two other traditional houses, occupied by close relatives, and plenty of free space between them so that the animals can stay safe at night. They live on the outskirts of the town, so it takes about a quarter hour to reach the school on foot. The old concrete building, former military camp remembering the times when Italians entered Ethiopia more than half a century ago, stands in the oldest part of Logya, a medium-sized transit town in the Lower Awash, in the central part of the Afar Region.

Mr Mohammed is an Afar, a descendant from an ethnic group cultivating pastoralist traditions since time immemorial. Afar are nomadic people who occupy parts of Ethiopia, Djibouti and Eritrea, where they utilize pastures of the one of the most hostile and vulnerable environments in the world (Browning, Little 2008). Afar Region, where Logya is located, lies in the north-eastern part of Ethiopia, bordering Djibouti to the east and Eritrea to the north (Fig. 02). It covers nearly 100,000 km<sup>2</sup> and is inhabited by population of around 1.4 million (87% living in rural areas) (Eriksen, Marin 2011:17). Around 90% of them are the Afar – ethnic group of Cushitic origin following nomadic, pastoralist lifestyle (Piguet 2001: 5) (Fig. 04), (Fig. 08), (Fig. 12).

Nowadays about 10-20 per cent of Afar people live in towns, where they engage in local wage economy to diversify livelihoods of their family, often additionally supporting communities based in the rural areas (Getachew 2001:35). Mr Mohammed's family is one of them. Because they have suspended their seasonal movements and settled on the town outskirts, they do not regard themselves as traditional pastoralists anymore. But unlike many other Afar who live in the towns, they still possess a considerable

herd of camels and goats: *"In the morning I am studying in the school, in the afternoon I am following my goats around here"* says Mr Mohammed. He keeps the camels for his sons, for the future, while for the time being his family can make a living by selling camels' milk to the town. The milk of the goats is for their own use.

They used to live closer to the river bed of Awash to the southeast of Logya, but everything changed dramatically in August 2010, when the Logya and Mile Rivers, both Awash tributaries, flooded heavily: *"Two years ago, in 2010 there was a severe flood: Logya, Dubti, Semera and the whole area around went under water"* says Mr Mohammed. Valerie Browning from the local NGO remembers that it swept away the houses of people north of the Tendaho dam overnight: *"I remember it was touch and go if people were going to be able to re-enforce the embankments around the town of Dubti to prevent to water flowing into the town – many people were marooned and in the entire flood, around 54,000 households lost their homes and many animals drowned"* (Browning 30.11.0212). The reason for the disaster was that the dam constructed on the Awash River and the canal directing its waters to the sugarcane plantation - a new project of the Federal Government replacing former cotton plant, was then still under construction and not able to channel the water through, which built up in the lake and split over the area and people's homesteads (Bureau of Works and Urban Development, Regional Government Semera, 23.03.2012). *"They told me to leave, there was no control over this water"* recalls Mr Mohammed.

Right after the flood the local government distributed dry food rations and the NGO's helped rebuilding houses and restocking animals (Browning 30.11.2012), but ever since all the families were gradually moved closer to the town and settling around the embankments of the canal was strictly forbidden for security reasons (Mr Mohammed 22.02.2012). It remains an open issue whether or not only the security of people and their animals was



here at stake. The past and present activities of the authorities concerning appropriation of pasture land for the commercial farming purposes along main rivers in Ethiopia allow supposing that the 2010 flood was used as merely an excuse to displace further pastoralists from their land. The natural course of flooding of rivers in a predictable seasonal cycle revives the pastures each year, providing abundant fodder for the animals. Traditional herd management strategies take these occurrences into account, which is why people migrate with their animals to dryer areas in the raining season - also without the government's intervention. The 2010 events may have been used as just another justification for what had been silently going on in Ethiopia for decades – the gradual, forced sedentarization of Afar-, Somali-, Borana- and all other small groups of pastoralists utilizing the economically crucial parts of land, which could be otherwise used for commercial purpose. This includes also undermining their rights to participate in the decision-making process (Brockelsby et al.

2009, Vellinga et al. 2007, Galaty 2011, Bini 2010-2012). The family of Mr Mohammed has eventually managed to adjust their lifestyle to the new conditions, but at high cost. Now, that the canal regulates the flooding capacity of river and gathers the water for the sugar cane plantation, area of available pastures shrunk considerably. *"We were living close to the river because there was grass. There was a lot of fodder for animals and so it was also easy to get milk. Now the camels can't get to these areas, because of the canal"*. People are allowed to drink the water from the canal, but it is difficult to get the water for the livestock. River banks are too steep for animals to descend; there are only some places where they can safely go down to the water surface. The only alternative would be to take the water from the municipal pipe system, which would cost plenty, if such a great number of animals were to be watered regularly (Mr Mohammed 22.02.2012).



Fig. 04: Afar girls

# THE BACKGROUND

Afar Region has never been a friendly place to live, due to natural conditions – heat, scarce rainfall, seismic activity. The story of Mr M. shows how, nowadays, the Afar people face also challenges caused by economic transformation of this land. Limited access to reliable data and lack of proper researchers' attention hamper comprehensive analysis of this region and its major characteristics. Scarcity of information, however, does not change the fact that the recent history of Afar region and its current situation serve as a good illustration of major political, economic, social and environmental megatrends and challenges affecting the developing countries. This includes prioritization of economic growth over the social and environmental sustainability, tension between neoliberal policies promoting the interests of big business and new agrarian colonialism at the expense of the community rights, conflict between state and customary institutions, as well as risks associated with climate change<sup>1</sup>

*1 Paving the road to the Red Sea coast in 1994 began the era of accelerated development and urbanization of the Afar Region (Bureau of Works and Urban Development, 23.03.2012). Facilitated access offered new opportunities for economic development, including granting access to international investors, but also drastically affected the local population, their environment and economy. The large-scale exploitation*

(Liberti 2012, Galaty 2011, Langbein 2015).

However, Afar Region is not only a laboratory of those large-scale processes, but also an area characterized by distinctive environmental, social and political conditions.

One of the key environmental characteristics of Afar Region is its unique tectonic location (Foulger 2011). The Region lies in the depressed area of the East African Rift system, where three huge rifts meet: Red Sea-, Gulf of Aden- and East African Rift (Afar Triple Junction) (Williams 2016) (Fig. 05). 25-million-year-long history of rifting and other tectonic processes resulted in volcanic rocks covering wide areas of the Afar depression (Abbate, Bruni & Sagri 2015) (Fig. 07). What is more important to the population of Afar Region, these specific conditions imply high seismic risk. In Ethiopia, 90 per cent of the seismicity and volcanic activity is related to the East African rift system and Afar Triple Junction is classified as a zone of major seismic weakness (Herbert 2013).

Extremely demanding climate conditions resulting also from these tectonic conditions are another distinctive feature of the

*of natural resources without their participation proved to be disastrous for their lifestyle, especially as the produce does not supply local market but rather the richer countries of the Red Sea or even Europe (Liberti 2012).*



Fig. 05: Awash Valley in the Awash National Park, Awash Fentale woreda, East African Rift





Fig. 06: Afdera woreda: natural salt lake in the Danakil depression; in front large scale salt extraction for commercial purpose



Fig. 07: volcanic landscape near active Erta Ale volcano

Afar Region. According to Köppen–Geiger climate classification, there are different climates across the region, with hot desert climate and hot semi-arid climate, as the prevalent ones<sup>2</sup>. Dallol Depression in the northern part of the region is known as the hottest inhabited place on earth with temperatures reaching over 46°C in the hottest month. Average rainfall differs across the region – from approximately 600 mm in the south and along the Rift Valley escarpment in the western part of the region, to less than 200 mm in the Dallol (Helland 2015). What is more, the rainfall is subject to high year-to-year fluctuations. High temperatures also lead to high rates of evapotranspiration reducing the access to surface water needed mainly for pastoralist and agriculture (Kebbede 2016). Taking these conditions into consideration, the whole area appears to be extremely vulnerable to the impact of climate change and its capacity for adaptation to it is particularly limited. As Eriksen and Marin noted: “*The horn of Africa and Ethiopia in particular is often cited as an extreme case where the impacts of present and future climate changes could lead to disasters similar to the famines of the 1980s*” (Eriksen & Marin 2011:13).

The administrative division of Ethiopia determines politico-administrative status of the Afar Region. The country consists of nine administrative regions *kililoch*: Afar, Amhara, Benishangul-Gumuz, Gambella, Harar, Oromia, Somali, Southern Nations Nationalities and People’s Region, and Tigray<sup>3</sup> (Fig. 01). Federal structure of the country introduced in 1991 ensures extensive formal autonomy of regions, yet decentralization is hampered in practice by lack of resources and limited capacity of the regions (Kloos & Legesse 2013). Like other regions, Afar Region is

<sup>2</sup> Online: <https://en.climate-data.org/region/1504/> (access: 8 July 2017)

<sup>3</sup> International Development Partnerships, 2015: *Administrative regions of Ethiopia*, online: <http://www.idp-uk.org/CountryProfile/Ethiopia%20Administrative%20Regions.pdf>, access 07.03.2017





Fig. 08: family herds consist mainly of sheep, goats and camels; cattle may survive only in the less arid areas

divided into administrative *zones* (here named 1 to 5) and these are further divided into *woredas* (administrative districts) (Fig. 02), towns, and rural and urban *kebeles*.

As for socio-economic status, Afar Region - together with regions of Benishangul- Gumuz, Gambella and Somali – is regarded as marginalized in terms of economic capacity, political influence on the policies introduced at the state level, infrastructure and accessibility of basic public services (Vaughan & Tronvoll 2003). The roads network is the least developed in the country (TH Consulting 2009). Only 45 per cent of population has access to primary education and 70 per cent is provided with some health services (Shinn & Ofcansky 2013). Health indicators are well below the national average (Vaughan & Tronvoll 2003). The adult literacy rates are also among the lowest in the country: 27 per cent for men and 16 per cent for women (Eriksen & Marin 2011). Despite some initiatives undertaken in recent decades in order to improve access of the Afar population to basic public services, Afar Region's needs remain neglected by national development policies (Reda 2014). Activities of local and international NGOs compensate the state's inefficiency only to a limited extent.

As mentioned above, the large-scale economic and political processes influence current situation of the Afar Region. With low political and administrative capacity and lack of actual impact of the Afar people on the central government's policies, is particularly vulnerable to changes negatively affecting the status of the population and creating new challenges to their institutions. First of all, the state authorities and other institutions, e.g. banks, do not recognize the clan-based, customary land tenure regime characteristic to pastoral communities (like Afar people) (Ambaye 2015). At the same time, the formal land tenure system is not fully established yet. Lack of strong regulatory framework for land management is one of the reasons for losing by the Afar large amount of land in an uncontrolled manner (Reda 2014). It also increases negative impacts of the investment projects launched in the region since the second half of the 20th century. For example, the extensive irrigation scheme for sugarcane or



Fig. 09: Afdera-Mekele road under construction (Chinese contractors)



cotton production in the Lower Awash reduced the access of population to the waters of the river and the pastures it seasonally fed (Tekle 2014) (Fig. 10), (Fig. 11). In the Middle Awash the access was restricted either by single agricultural enterprises enclosing parcels of fertile flooding planes along the Awash, or directly by the government who was expropriating people of pasture land traditionally belonging to the clan and lending it to enterprises for monetary gains (Getachew 2001, Rettberg 2009, Reda 2014). Besides the salt extraction sites in the Dallol-, Afdera- and Dobi- area (Browning 11.03.2012, Mr Youssef 21.03.2012 and 18.04.2012) (Fig. 06) Awash is potentially the biggest source of income in the region. It waters numerous vegetable plants, along with sugar cane used in the chemistry and reed sold on the market, but it is also a source of wood used for the building market and charcoal production. In this context pastoralist using land surrounding Awash extensively and not producing any goods to sell on markets seem for the government to be a waste of potential and money (Getachew 2001). Those large-scale projects reflect the dominant approach among government officials, perceiving pastoralism as “a primitive, unproductive way of life doomed to extinction” (Behnke & Kerven 2013: 6). The irrigation potential of the Awash Valley has not been fully used yet. Plans for its further expansion pose additional challenge to the Afar people. Afar population has been traditionally dependent on camels, cattle, sheep and goats (Rettberg 2010). Over 80 per

cent of the Afar people rely on livestock production as their main livelihood (Eriksen & Marin 2011) (Fig. 08). Further development of the irrigation projects will lead to removing dry-season grazing areas that support the region’s livestock (Helland 2015) and gradual impoverishment of these herders, who do not decide to settle (Rettberg 2009). Together with the impacts of the climate change, this will increase the economic pressure on the Afar population and risks for food security in the region (Rettberg 2009, Reda 2014).

It should be noted that the evolution towards model based on large-scale cotton and sugarcane production failed to deliver expected economic results. Paradoxically, in the Awash Valley the traditional pastoral livestock husbandry remains more profitable than modern cotton farming and sugar cane cultivation. Behnke & Kerven cleverly capture the actual outcomes of this centrally-forced transformation of regional agriculture: “Irrigation projects have not improved the economic returns from agriculture in the Awash valley, but they have transferred the control of valuable natural resources from Ethiopian pastoralists and farmers to government officials. Agricultural output that once belonged to Ethiopian citizens now belongs to the state” (Behnke & Kerven 2013: 33). This case could be presented as another example where the economic progress and modernization agenda serves as a smokescreen for marginalization of disadvantaged communities.



Fig. 10: Dubti *woreda*: Tendaho canal channeling water to the sugar cane plantation



Fig. 11: Dubti sugar cane plantation, Lower Basin of Awash River

# RESEARCH OBJECTIVES

Far from trying to provide a comprehensive illustration of the current problems faced by the Afar population, this study focuses on finding intersections between changing lifestyle of Afar pastoralists and their traditional habitation forms, which are directly bound to the availability of resources and migration regimens.

It provides an anthropological and architectural insight into factors that shaped the nomadic settling schemes and dwellings of the Afar over decades and centuries, but also explores the impact of recent socio-economic and political challenges on their form. In the descriptive part of the study, various aspects of nomadic architecture are presented in details, including the structure of the settlements, typologies of dwellings (and factors influencing their characteristics), along with construction process and use of space. In addition to this, the methods of adaptation

of architecture to environmental conditions and availability of resources are discussed.

All those aspects, which concern settling schemes, are also analyzed in the dynamic context of changes triggered by political, economic and social transformation of the region. It is clear that traditional way of life along with settling- and migration patterns are evolving due to new restrictions in access to water, climate change and urbanization. One of the major trends, from the architectural perspective, is forced sedentarization, undermining the traditional nomadic lifestyle of the Afar people.

The results of this study are relevant not only to the scholarship dealing with the Afar people and Afar Region. Regardless of the regional specificity, the problems and challenges present to Afar people are common to other nomadic people living across Africa and on other continents.



Fig. 12: traditionally the right to utilize clan land is granted to all clan members and all natural assets are used collectively; the key element of reliable pastoralist system is mutual support within communities, which helps building strong and independent social net, crucial in difficult times

# METHODS

Major part of this work concerning Afar settlements, dwellings and the current situation in the region is based on information gathered in the course of two field studies carried out in the Afar Region in 2011 (1 week) and in 2012 (3 months). Data collected on spot was accompanied with an extensive desk research, including review of academic literature, studies and reports prepared by various public, private, non-profit and academic organizations, as well as documentaries. Desk research particularly aimed at providing ethnographic, socio-economic or political background to information collected within the field studies.

The major part of the field research was conducted in the central part of the region, around the Lower Basin of Awash River, but also in some of the eastern-, western- and northern parts of the region, albeit to a limited extent (Fig. 02).

The area covered by the study was limited for a couple of reasons. In the past, the lands inhabited by the Afar nomads were difficult to access both for travelers and researchers not only because of the virtually non-existent road infrastructure and accommodation possibilities, but primarily because of the harsh climate of the Danakil Depression and the unfavorable “reputation of Afar as hostile to strangers”, as Getachew (2001:11) puts it. This reputation, fueled by mysterious tales spread by some travelers and writers, has clung to them to such an extent that although many of “outsiders” living and working nowadays in the Afar Region have long ago overturned this myth, many of today’s Highlanders, who have never met an Afar, continue to bear malice towards them and discourage any travelers from visiting their lands. Nowadays, it is rather the poor accessibility of remote parts of the area and complicated procedures when applying for official research permissions, as well as specific local customs to be followed when entering particular clan land that pose challenge to independent visitors. Also, the ongoing, armed conflicts on the borders with Eritrea and Djibouti, including the local ones with neighboring tribes like e.g. with Issa Somali in The Middle Basin of the Awash River, restrict the accessibility of these areas classified as dangerous to explore.

Our stay in the Afar Region and visits to remote parts of it were only possible due to the collaboration with the local nongovernmental organization APDA (Afar Pastoralists Development Association), which provided us with accommodation and support of all kinds throughout our whole stay in Ethiopia. Due to the vast operation area of the organization, their knowledge of the language, local customs and procedures, we were able to record many settlements otherwise difficult to reach for researchers (Fig. 13).

However, due to limited time of our stay in Ethiopia the number of the field trips we took part in and areas we could visit were restricted. However, the data gathered has allowed us to understand the impact of environmental factors, economic

pressures and local conflicts on the settlement patterns of the pastoralists. Instead of presenting a complete list of typologies of settlements and dwellings found in the region, this research aimed at identifying how pastoralists respond to particular challenges and how they adapt their settling schemes and forms of dwellings according to the given circumstances, which appears to be uniform throughout the region.

Both field studies were conducted at the end of the dry cold period *giilal* and following it short raining period in spring *sugum*. The preliminary 2011 survey was conducted in one week in February in selected locations in the Dubti and Ewa district, which was enough to acquaint us with the situation on the spot, identify problems and outline future research objectives. It allowed also visiting and recording exemplary settlements in Ewa *woreda*. The 2012 field study lasted three months, from February to April, during which we concentrated explicitly on collecting information and documenting settlements and housing typologies in the visited areas in Dubti-, Kori-, Elidar-, Afdera-, Yalo-, Ewa- and Chifra *woredas* (Fig. 02).

The classic set of ethnologic research tools of the field study, including formal- and informal interviews as well as participant observation (Fischer 1985), proved to be most useful for gathering the needed data. Depending on the situation and available time we alternated methods, sometimes applying all of them in parallel.

For the structured interviews carried out in the private households a questionnaire was developed on the basis of an exemplary form used by Andrea Rieger-Jandl in a similar study conducted in Ladakh in Northern India (Rieger-Jandl 2006). It included inquiries about the social background of the respondents and their families, their material status, information about houses and settlements, migration history and future prospects. These interviews were conducted both in the rural and urban areas of the region, mainly with Afar citizens, though non-Afar citizens were also included, so that we could obtain a complete picture of the current situation in the urban centers.

Structured surveys were carried out also with professionals like civil servants of the Regional Government, workers of the Nongovernmental Organization APDA, small private companies and workshop owners, which provided us with information about current challenges of urbanization, in particular around the Lower Awash. The gathered information was complemented by insights gained from informal interviews conducted both with professionals and private persons.

We managed to conduct about 35 formal interviews, 25 of which were carried out in private households, 7 with the so-called specialists like owners of workshops or private building companies and 3 with civil servants of the local Government. Together with the informal interviews they sum up to a total of





Fig. 13: Valerie Browning talking to a teacher of a community in the operation area in Ali Adayto, Ewa *woreda*

about 55.

Participant observation also played a significant role in the informal collection of sociological information about the environment, which we were studying. The fact that we were accommodated under the same roof with the Afar community, participated in daily rituals, used the available infrastructure and worked closely with the APDA organization, provided us with valuable observations on the habits and structure of the Afar society, as well as on the changes it undergone in urbanized environment. Casual meetings in cafes, spontaneous dinner invitations, ordinary daily discussions on the way to the APDA office and expeditions to operation areas of the organization complemented the somewhat formal picture of the situation, which we have gained during the interviews, with valuable informal nuances.

Apart from the above mentioned restrictions of the duration of the field study and the accessibility of some areas, also the thematic scope of single interviews needed to be limited. As the typical interview including collecting data and recording of the settlement and the house plan lasted between 2 to 2,5 hours, we were only able to investigate the most obvious components of the Afar dwelling culture including building enclosures for animals, construction of their houses and use of space. Further detailed study of various handcrafts in which Afar women engage, decorations they make, rituals they conduct concerning architecture like e.g. building temporary marriage hut for the newly wed couple during celebration time, would be of a great

value - not only from the ethnographic point of view, but also from the architectural one.

This book is divided into three main parts, which lead the reader from the broader context of the circumstances and factors influencing settling strategies, through forms of settlements chosen in particular setting, to the detailed study of the chosen dwelling types. The first part encapsulates all factors contributing to the shape of Afar settlements in general. It explains the rationale of the pastoralist economy and describes strategies of effective managing of animal and human wellbeing. Further, the social structure and traditional support systems of Afar nomads are investigated and the interactions with other local and regional players are outlined. Finally, it discusses the importance of natural surroundings as one influencing directly dwelling forms and providing resources of different kinds. The second part extracts specific environmental and socio-political circumstances in which Afar apply various settling strategies. It also shows the variety of adaptation techniques applied by nomads in specific situation, including managing the frequency of migrations, size of settlements, configuration of enclosures and choice of construction materials. The last chapter concentrates on the typological distinction, functionality and construction of the Afar dwellings chosen in the typical circumstances.

All Afar terms quoted in the text have been written according to their pronunciation. The original spelling, if known, can be found in the dictionary at the end of the book.



# ON THE MOVE

## IMPLICATIONS OF PASTORAL LIFESTYLE ON DWELLINGS OF AFAR

Vernacular architecture can be understood only in relation to its context. Being a physical representation of particular cultural bearing, it results from numerous social, economical, political and environmental factors and circumstances. The physical and behavioral responses to these factors are developed by successive generations over decades in order to support sustainable adjustment of the community to the specific surrounding conditions they live in, as well as to help maintain the continuity of their traditional values and economical aspirations.

Even the smallest settlement conceals the complexity of finely balanced solutions to the specific matters and cannot be judged only on the spatial layout or relations of built structures within it (Denyer 1978). In this regard the dwelling form represents an important component of the identity of the community concerned: it meets the need to accommodate particular living patterns in specific cultural and environmental milieu (Oliver 2003).

Not much different is the case of nomadic dwellings of the Afar people in the Horn of Africa - however impermanent or even provisional they may seem. In this particular context of almost constant mobility and change, the temporality of living structures becomes a natural consequence of the nomadic lifestyle. The economical aspect of seasonal grazing of animals moves to the front and dictates the habitation form. But on the whole it results directly from the scheme of managing the natural resources available in the surroundings and coping with extreme environment, which is exposed to cyclical natural disasters like flooding on the one hand and then drought on the other (Oliver 2003). Hence the transitory character of the dwelling, the ingenuity of structure resistant to various external impacts, true use of materials and climate considerations are all inseparably bound in the creation process.

The cultural frame consisting of traditional and religious beliefs, rituals, social hierarchy and expectations renders every undertaking of the nomadic society along with behavior of

individuals in each community (Oliver 2003). Kinship relations are oriented towards performing and receiving mutual help, in most cases within the small domestic units consisting of close and extended family, which very often develops to wider collaboration with neighboring compounds and further relatives. Various cooperation patterns have direct impact on the land tenure within and among the clans, but also on the organization and composition of each settlement, whose inhabitants are allied in living-, grazing- and movement ventures.

Both loyalty and reciprocity system strengthen pastoral ability, but appropriate management of herds and determining priorities may be even of a greater importance for sustaining the livelihoods and surviving in times of strain. In unfavorable circumstances, leaving the house behind and moving forward with animals only, may be the only reasonable solution. Although it suggests rather an extreme situation, it pictures a general attitude of the nomad towards the life occurrences, as well as towards the material possessions. Human values and social investment above material wealth, as well as pursuit of animal wellbeing, are of a biggest concern of a competent herder.

The static aspect of habitation stands often in opposition to the mobile character of herding activities, yet it is by no means of a lesser importance for the nomadic societies. Considering the remark of Paul Oliver about dwellings (2003:166), habitation form both represents and affects the social-, as well as the gender discourse in particular community: *“Every culture has its particular expectations of its dwellings, and arranges domestic spaces in ways that relate to its social structure, to its traditions and to the organization of the daily lives of its members”*. Thus the functional and symbolical arrangement of spaces shared by next of kin suggests and reinforces social interaction behaviors including performing traditional practices and fulfilling social role expectations. Whether it is on the domestic level or in the wider group of affiliates, the continuity and wellbeing of the household involves the effort of all members of the community.





Fig. 15: Ewa *woreda*: young men leading their cattle to pastures

On a micro scale, a single family unit contributes significantly to maintaining and conveying all the essential components of a particular cultural heritage. Its functioning reflects the traditional social structure, sanctions the traditional beliefs, supports and maintains them. These elements are implemented at domestic level, and from there are translated into broader interactions within the community. Men and women pass on gender-specific behavioral models to younger generations and communicate their position in the wider community.

Mutual relations between pastoralists and local authorities, as well as among close and distant neighbors, also affect the

process of developing effective coping strategies in given circumstances. Violation of land ownership or land tenure and in particular taking control of local resources that often disturb these relations, can undermine not only the traditional strategies for managing animal welfare in certain areas, but also affect people's settling strategies by promoting, for example, decisions to create habitation alliances with other Afar communities for defensive purposes.

The closer analysis of the above mentioned factors might allow better understanding of the background, in which the settling schemes and housing forms adopted by Afar people are rooted.



# MOBILITY

## *Subsistent economy and pastoral ability*

Nomadic societies, like the Afar people, are to the great extent dependent on the number and wellbeing of their animals. Harsh climate conditions and infertile semi-desert soils, covered in very thin vegetation and suitable for cultivation only in the riverine areas, make them rely their surviving strategy upon extensive use of land and require undertaking frequent migration ventures in search of fresh pastures and water (Oliver 2003). There is probably no other way to survive in this environment than to be completely self-sufficient. Most of the remote areas are very difficult to reach, unless on foot, so it is truly the matter of creating and maintaining an efficient and reliable system, which allows the communities sustain their livelihoods without any help from outside. Jeannette Van Bodegraven (2006:30) underlines in the paper *“the unique adaptation of pastoralists to their ecology”* and names it the *“viable - if not the only - way to make use of the scarce resources available”* (Fig. 15), (Fig. 26).

*“For a secure pastoralist livelihood, the size of the asset base – the herd size and access to grazing and water – is only a part of the story”* write Brocklesby, et al (2009:8). The other one lies in the so called competence, or pastoralist ability understood as an *“ability to manage risks and do well”* (Brocklesby, et al 2009:9). It requires accumulating knowledge and skills and involves solidarity and active participating in traditional stock redistribution networks, which secure livelihood in difficult times (Getachew 2001).

This involves also the confidence to make smart, well informed choices in times of strain. The pastoral ability is extremely important in times of severe drought and shrinking grazing areas, when appropriate handling strategies have to be implemented immediately. Some of such traditional procedures involve reasonable herd management practices with herd splitting and

division of herding duties. Others require frequent movement of animal camps and sometimes even recomposing of herd as adjustment to the availability of the fodder.

Traditional approach still relies upon the mutual help within the clan, *kedo*, and taking collective decisions in terms of seasonal movements. In most cases the size and wellbeing of the domestic herd is a measure of its prosperity. It is said, that the stronger, economically independent clans or families are to be found rather in the depth of the rural areas, where they rely entirely upon their animals (Brocklesby, et al 2009). Their herds are very large and composed of different kinds of browsers of different age, so that they are not as much threatened by the risk of losing all of them at once in case of restricted fodder accessibility or occurrence of diseases. The weaker or smaller families, or these of the lesser pastoral ability, tend to stay closer to the urban settlements. Only recently selling some animals and moving closer to the towns in search of additional income sources became a way of coping with economical pressure. Needless to say, it leads very often towards gradual loosing of the pastoral ability and to becoming more dependent on the urban centers and local support institutions (Brocklesby, et al 2009) (Fig. 16).

Simone Rettberg (2009:165) calls the mobility and flexibility the two most important skills, which allow pastoralists to survive in the unreliable climate circumstances: *“Only by means of these two competencies they are able to sustainably utilize the existing pasture and water resources and by doing so to avoid the over- and under-grazing of the land”*. The frequency of the movement requires careful planning and making decisions on splitting the herd. Dividing the family camps and distributing grazing responsibilities among the members in each camp often follow these. Thus livestock management strategies almost always



Fig. 16: Logya, Dubti woreda: livestock market



Fig. 17: Ali Adayto, Ewa *woreda*: sheep and goats on their way to pastures

directly influence and shape the character of the settlements, just as they determine the assignment of the duties among its members.

### *Herd management units*

The composition and size of the household livestock can vary according to the region, the size of the family, as well as the availability of preferred fodder and water in the surroundings (Getachew 2001). There are more demanding grazers like camels, donkeys and cattle, as well as less demanding browsers like goats and sheep to be found among them. As far as goats, sheep, donkeys and camels, they can be encountered almost in the entire region; the cattle can only survive in the areas, which border with the highlands and permanent river basins.

Camels, especially the female camels and cattle, but also any

other female animals, are considered very valuable, which is reflected in the prices they fetch on the local markets (Mr Mohammed, 22.02.2012). Hence the composition of each stock unit depends also on how wealthy the family is, allowing some households to have in their possession from only a few, up to even more than a hundred of these highly valued animals.

The importance of effective stock management for the subsistent wellbeing of each family makes both the nuclear family unit, *buda*, and extended family, *daala*, responsible for supervising, reproducing and redistributing animals in accordance to the time of the year and accessible resources (Getachew 2001). The smaller family units may form bigger compounds of a bigger number of houses, *gantas*, which cooperate in grazing ventures (see „Family compounds, cooperation“ page 46).

The system of stock management is complex and requires



Fig. 18: Ewa *woreda*: camel *magida* grazing in acacia forest

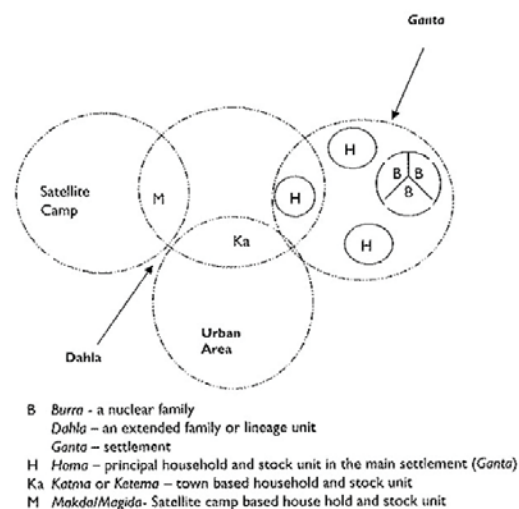


Fig. 19: sketch diagram of distribution of assets : the *ganta* settlement and the dispersed family *daala*; source: Getachew 2001:21





Fig. 20: Ali Adayto, Ewa *woreda*: domestic stock *homa* grazes in the vicinity of settlement *ganta*

splitting animals according to their kind, their sex and age, as well as their lactation status. For there is most of the time not enough grass in the surroundings of the family compound to feed the big herd of animals, at the root of such classification lies the need to determine their capability to move within longer distances, to the remoter pastures, sometimes with insufficient water and grass on the way. This forces Afar to rethink also their settling strategies and makes them split their compounds to permanent and temporary residences, which house particular animals and give shelter to members of *daala*.

The *homa*, the permanent settlement herd, contains mainly small stock and lactating cows grazing in the vicinity of the compound - animals, which would otherwise not make it without water on the remote grazing planes. The remaining ones, so-called dry herd, are assigned to *magida*, the mobile camp, and follow their herders further away from home according to the availability of fodder on remoter pastures (Getachew 2001). If a

family has some relatives in the town, they may have a number of animals to their disposal as well, but their herds mainly consist of lactating stock, easier to provide for in the urban centers (Fig. 19).

Main settlements are home for the women, younger children and older people of both sexes. They may be located close to the permanent water sources, which do not dry out in the cold/ dry period of the year (Fig. 21). Such settlements contain, varying according to the region, combinations of permanent and portable housing structures, which may later be transported during the wet period in case the whole settlements *ganta* migrates to satellite camps and fresh pastures (Fig. 14). Compounds consist not only of human dwellings, but there are also fenced enclosures *gaso* for various animals (Getachew 2001). All the milking, pregnant and young animals stay with the nuclear family, so that they can be taken care of and watered every few days: "A younger son



Fig. 21: Chifra *woreda*: settlement *ganta* comprising a couple of dozens of nuclear *buda* families, who share compounds with their relatives forming extended compounds of *daala* - relatives





Fig. 22: Dubti *woreda*: materials for corrals are collected in the surroundings; men and boys sleep on blankets next to the animal enclosures

looks after the home-based lactating livestock. Young girls, small boys and wives tend the small stock and calves” (Getachew 2001:57). The young animals stay in the compound the whole day, while the rest grazes in the surroundings and spends only the night in enclosed pens (Van Bodegraven 2006). There may be also two or more camels kept in the main settlement, in case the family would have to move on or transport some goods (Fig. 20).

The highly mobile herding camp, *magida*, is a completely independent herding entity, which moves almost constantly along the grazing planes. It is difficult to spot, unless it is grazing in the vicinity of own settlement or nearby one of the main pastoral tracks. Otherwise it wanders to the remotest parts of the clan area, where no other settlements have recently been set, in search of the untouched pastures for the animals to forage. The only traces it leaves behind are enclosures for animals on the

planes, close to natural water sources and sheltered by bushes (Fig. 22). The distance between this camp and main settlement may be from several hours to even up to two days walk, but it is preferably on the clan land, and still possible to reach within reasonable time.

Temporary camps are set while on the way: extended corrals of thorn-bushes of medium height and size big enough to house all the dry stock are constructed for the animals to stay overnight, but no shelters are constructed for men. They sleep in the open, next to animal pens, but need to stay vigilant to ward hyenas off, if they sneak to close to the camp (Faegre 1979). Yet animal losses are frequent and almost impossible to avoid. Mostly relative small, or weaker animals are an easy goal for the predators, but also these, which wander off at night, not spotted or not driven to the common enclosure by the inexperienced pastoralists (Browning, Little 2008).



Fig. 23: Ewa *woreda*: young men following their camels



Fig. 24: Ewa *woreda*: camel *magida* grazing in acacia forest

The herd of *magida* camp is further divided into camel, cattle, goat and sheep units of a smaller size (Getachew 2001), so that they are easier to manage. Along with the stock division, also herding activities are distributed among the boys and men, who are responsible for a mobile camp: “To manage the available labor, the large stock are herded separately from the small stock, which are herded as a mixed flock of sheep and goats. Ideally an elder son will look after the dry-herds in the satellite herding-camp ... The household head (*burra-abba*) is responsible for the care of camels. This task includes herding and milking” (Getachew 2001:57).

While on the move, herds of mixed dry stock are driven by a group of young boys accompanied by men, who are more experienced in animal husbandry. Long pastoral sticks are what they use to bring back the animals on the way in case they wander off. Cows, goats and camels may graze now and then somewhere in the acacia forest, gladly taking advantage of shade cast by trees. During the day boys and men come to milk them into traditional handmade grass bowls, smoked, so that they are sealed - the only food, apart for the one purchased in exchange for animals, they have to their disposal while on the move (Van Bodegraven 2006)(Fig. 15), (Fig. 17), (Fig. 18), (Fig. 23), (Fig. 24).

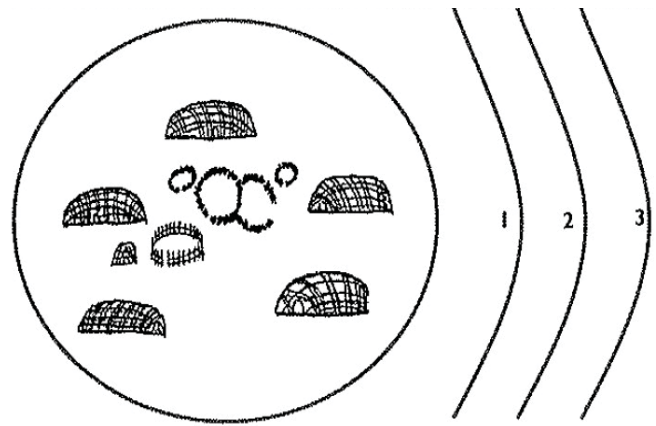
The idea of separate animal management units is to protect weaker animals and these, which are pregnant or in lactating stage from strenuous marches in search for fresh pastures and staying away from water source for longer time. At the same time the dry-herds browse freely in further surroundings, where they can find greater amounts of fresh fodder.

Minimizing various risks is another reason for dividing livestock into two separate camps. Avoiding concentration of the stock in one area, especially close to the crowded towns, prevents expansion of animal illnesses. Especially camels are prone to contracting water-related illnesses spread by mosquitoes, so they shall stay as short as possible in the vicinity of the rivers and swampy areas and only for the watering purposes. Otherwise they reside further from the water sources (Rettberg 2009) and live on ground water found on pastures after raining.

Also in case of being raided by neighboring tribes, risk of losing whole herd at once is reduced if it is spitted to smaller groups (Rettberg 2009).

### Seasonal migrations: stationary and satellite camps

Dividing stock into main settlement-based camp and mobile camp is not the only measure taken towards effective management of animal wellbeing. Clear seasonal movement ventures of whole families between summer and winter camps, including all their animals, may be even as important as the herd-splitting itself (Van Bodegraven 2006). It is not only a matter of providing stock with enough fodder, but also managing natural resources in a way, which assures their availability in the future. Being aware



1. Local grazing area and farms (*Gawra*), *Lao* or *Lau*
2. Clan land (*Kado*) *badho*
3. The land beyond (*Bahrī*) or *Goda*

Fig. 25: sketch diagram of a settlement: the *ganta* and the concept of space; source: Getachew 2001:22

of serious consequences of overgrazing of dry period pastures, pastoralists move with their herds towards other plains, allowing the former browse recover after dry season, so that they have what to return to afterwards (Vellinga, et al 2007).

Migration patterns vary in different areas and depend to the great extent on the specific local situation with its overall water and fodder availability, land tenure within and beyond ones clan, but also proximity of unwelcome neighbors. So is the distribution and arrangement of the dry- and wet-period settlements (Getachew 2001) (Fig. 25).

Traditional cyclical migration undertakings of the Afar usually take place during two main seasonal shifts of the year: between the big dry-period *gīlal* starting from October/November and ending in January/ February, and the big raining-period *karma* from July to August/September. During this shifts Afar move their residence and animals between dry period pastures of *kalo* and raining period pastures of *duka'a*, or *alta* (Mrs Moomina 12.04.2012, Mr Tibo 12.04.2012, Mrs Zahara 12.04.2012, Rettberg 2009) (Fig. 14).

*Kalo* comprising flooding planes along perennial rivers are these areas, which Afar choose for their main, permanent settlements, because there is almost always enough water available during the dry season (Fig. 40). Both pastoralists and agro-pastoralists reside in this areas and it is where agricultural enterprises of private investors and state are concentrated (Eriksen, Marin 2011). The domestic herd, *hooma*, grazes in the surroundings on the pastures or flooding plains of the river, while the highly mobile camp, *magida*, migrates further from the homestead, but always in a reasonable distance from the water source. It may be a few hours walk away from the stationary compound, or even up to a day or two, but the animals have to be watered every couple of days, so it is rather kept shorter (Van Bodegraven 2006).

*Duka'a* describes vast semi-dry grazing lands, further to the west of the Awash River and towards the border with the Amhara and





Fig. 26: Awash Fentale woreda: Awash National Park; pastoralists are allowed to utilize these pastures (*duka'a* ecology) as long as they do not disturb wild animals living in the park (Getachew 2001)

Tigray Regions (Rettberg 2009). Beginning with planes covered in shrubs and acacia trees and with intermittent rivers, it gradually elevates towards the Highlands. It offers better pasture than *alta*, and where it is possible, herds migrate to these planes during raining period (Fig. 26), (Fig. 39).

Pastoralists of the northeastern part of the region, who have no access to these areas, utilize *alta* pastures, which are drier, stony and generally more demanding. Elidar and some parts of Afdera woreda are examples of such topography (Morin 2012). Balancing the forage needs of animals, and at the same time the local ecology, requires bigger flexibility and more frequent movement of herds (Eriksen, Marin 2011) (Fig. 42).

As soon as the short spring-rains period, *sugum*, ends (March to April), some pastoralists move their residence along with their herds to the wet-period pastures: to the *alta* or *duka'a* areas, where they expect fresh browse and seasonal water sources to be provided for their stock (Van Bodegraven 2006). The dry-season stationary family settlements around the *kalo* areas are temporarily abandoned for the satellite camps in raining areas. These are pitched along the migration routes nearby intermittent rivers, which may be bearing water during raining time, so that the domestic herd can be still provided for (Rettberg 2009). To the beginning of the dry season of *giilal*, the majority of the pastoralists may proceed back to their main family compounds in the *kalo* (Rettberg 2009), allowing the remaining pastures to

restore.

Main family settlement of a migrating family may consist of a large number of permanent and portable living units, which are organized in compounds of different sizes. The portable lightweight structures of wooden frames and mats are the ones, which will be disassembled and transported on the camels to the remote areas, where they will provide shelter in satellite camps. The satellite settlements may consist of single portable dwellings, or be organized in smaller compounds, but of a rather provisional character. Due to the higher mobility demand and in order to minimize the transport weight, these shelters may be of a smaller size in comparison to these in the main settlement.

Pastoralists in the satellite camps are not constantly on the move, like are the herding units of *magida*. They may be lucky enough to stay on one spot during the whole raining time, with enough water and fresh grass for domestic lactating livestock around the satellite settlement.

The actual frequency of migrations is dictated by the basic herding needs of the animals (Prussin, et al 1997), so if they run out of water or forage, the satellite camp might move on to search for a new place to pitch new camp: "They set up camp near a water source, graze their animals until the fodder runs out, then move on" (Browning, Little 2008:xii).

The decision to move is often supported by valuable information

obtained from the other herders, *daagu*<sup>1</sup>, about the situation in the remote areas and whether the rain has been seen there or not. This allows them to revise their plans and, if necessary, to divert migration into other direction.

Some families may choose not to leave their dry-season permanent settlement and so their shelters do not need to be demountable. If this is the case, only the mobile herding camps undertake grazing circuits of up to several hundred kilometers length and return to the homestead at the beginning of the dry season (Van Bodegraven 2006). The inhabitants of the Village close to Gubiya in Yalo woreda during our visit in 2012, for example, had been staying in their dry season encampment since already two years without migrating. Because they had a permanent water source, mosque and a school to their disposal in the area, as well as access to the local market, only their animals guided by the young men had been out on the raining pastures (Browning 11.03.2012).

The other communities may move even up to five and six times a year and so their compounds consist of only portable *daboytas* (Valerie Browning, FM4, 15.10.2010).

But there are also such areas in the Middle Awash, where very close proximity of the hostile neighbor tribe of Issa excludes vast parts of so called border-land from being utilized by both tribes out of fear of animals being raided. In this case camels, sheep and goats graze almost the whole year on the drier *alta* pastures, mostly to the west of Awash and are led to the river to drink only every several days or weeks (Rettberg 2009). In these areas also settling strategies are accordingly adapted to the given situation. Some settlements may comprise a great number of compounds of extended families grouped in one area - arrangement clearly demonstrating defensive character (see „Adapted settling strategies due to violation of traditional land tenure; environmental changes and conflicts on resources with neighbors“ page 98).

Mr Mohammed's family migration history is an example of how the differences in mobility patterns can be recognized even in

*1 /daagu/ xaagu (Afar) – “The Afar have system of communication daagu, which has evolved over centuries of nomadic existence. If Afar meet on a walking track, they will greet one another in the name of God. They will ask after each other's health and the health of their family, how the animals are, how is the weather situation where they have come from. One might ask, ‘Did you see anything unusual in your direction?’ The other may say he saw a camel. ‘He was not grazing, he was fretting. He didn't look like he knew this area. His head was high.’ ‘What marks did the camel have?’ ‘Oh, he had such and such a mark.’ They'll pass on the news that there is a fretting camel coming in this direction. This is how they'll find their lost camel. They use daagu to get help for sick people, or to pass on information about the spread of sickness; all sorts of information.” (Browning, Little 2008:119-120)*

context of neighboring areas. His Father's family comes from around Logya, within the *kalo* areas. Thank to sufficient amount of water and fodder for animals in the past decades, the family used to live almost sedentary life. Meanwhile, the family of the Mother lived further to the east, in the *alta* topography, which made them migrate very often so that they could sustain their livelihoods (Mr Mohammed, 22.02.2012).

The distance to travel in each move may vary considerably. It ranges from a dozen of kilometers, up to more than two hundred kilometers (Van Bodegraven 2006). Mrs Zahara's family (12.04.2012) has been migrating since some years between Dubti dry-season pastures, where they would stay for five months a year, and remote wet-season pastures. It takes five days to walk, but afterwards the animals may graze there for seven months.

Some intermediate stops may be necessary if the distance between the summer and winter camps is larger. In this case the mobile shelters have to be pitched more frequently along the way (Prussin, et al 1997).

During the migration periods, people follow specific routes, mostly on the land of their clan, *kedo baado*, and the neighboring- or partner-clan if the pastures on the native land are not sufficient (Getachew 2001). Chosen tracks may even repeat each season, like wandering routes of family of Mr. Sale, who has been covering the distance between Kori woreda, Dichio in Elidar woreda and Asayita, which is about 150-200 km, for twenty years of his life before he settled in the town (21.02.2012). The family of Mr. Dewud (24.03.2012) from Dodoble (close to Logya) on the other hand migrates only twice a year when the seasons change. They cover smaller distance, usually to the Asayita direction, but the destination may be adjusted according to the information, *daagu*, they obtain about the raining situation in the area: “We move according to the situation ... if there is no grass, no food for animals. We go anywhere it rains... if it rains, we know it from people and then we can go there ... but at the end we return to Dodoble” (Mr Dewud 24.03.2012).

Managing livestock through splitting it to smaller herding units, as well as migrating between the seasonal pastures is highly sustainable and considers environmental aspects. It prevents overgrazing of pastures and at the same time it allows the land to rest between the seasons (Van Bodegraven 2006). By letting the pastures restore after dry period and in the meantime moving towards the remote rural raining plains, pastoralists ensure the availability of the fodder for their animals when they return in the following dry season. Additionally migrating away from the permanent settlements protects them from the consequences of the flooding of the perennial rivers and their animals from contracting water-borne diseases (Getachew 2001).





Fig. 27: Ali Adayto, Ewa *woreda*: a settlement *ganta* may comprise many extended families, who cooperate on a daily basis and during migrations

## SOCIAL TIES AND MUTUAL HELP

### *Community settlements*

To manage periodical movements of herds, pastoralists have to cooperate with the members of their own lineage. Although it is most frequently the *buda* (nuclear family) and *daala* (extended family) which constitute the closest cooperating unit, the further lineages and sub-lineages of a clan may also be involved in joint migration ventures and daily life duties (Getachew 2001).

The clan, *kedo*, may consist of a considerable number of such lineages, which in turn include many extended household units, *daala*. They may live in concentration, in the neighboring cooperating compounds and form a settlement *ganta* or else be scattered around the territory claimed by their clan, *kedo baado*, or even on the land of the neighboring clan if they have a permission. Depending on the proximity in which these extended families reside, the number of commonly living and migrating people may differ and reach even up to a few dozens, if not more, pastoralists at a time (Getachew 2001). The consequence of forming various cooperating community constellations can be observed in a variety of compound patterns and accordingly the number of homesteads found within.

The smallest functioning unit, *buda*, is a single homestead in which the closest relatives live. It describes the basic family unit of a married couple and alternatively their small children (Fig. 28). The *daala* unit on the other hand is composed of a few related *buda* units, which form the extended family. Most universally it is composed of the grandparents and their married sons, who may also have already their own children; or other close related affiliates (Fig. 29). This *daala* settlement is composed of a couple of independent homesteads, which are grouped in a fenced compound and share common space in its center, along with the pastures around it (Getachew 2001).

When at least two such compounds share everyday duties, they may be called *ganta* - a settlement of cooperating compounds (Getachew 2001). This situation occurs when e.g. two brothers and their families reside next to each other in neighboring compounds (Villager, Ali Adayto, 10.02.2011) (Fig. 21).

Further on several extended family compounds *daala* living in the same area form a bigger lineage settlement *ganta*, but they do not have to move or settle together all the time (Getachew 2001). Although scattered, these people often have a representative elder (Browning, 10.02.2011).

The same situation occurs, if several intermarrying lineages of the same clan share one land. They form a clan settlement and have





Fig. 28: Ali Adayto, Ewa woreda: a nuclear family *buda*

a political leadership, as well as internal sanction institution, *finaa*, whose function is to put into practice and enforce customary law, *mad'a* (Getachew 2001).

Getachew (2001:58) names also a fourth form of a settlement when lineages of two different clans live in one neighborhood: *"It comprises households from other clans, which have conjugal ties with the host clan. Each settlement has its autonomous ritual and political authority. Apart from this, a clan neighborhood comprises clan member based in pastoral camp settlements and those in town"*.

Establishing various types of compounds and cooperating settlements results from numerous socio-economic factors. To these count the level of kinship inside of particular group, institution of traditional marriage, *absuma*, with livestock transfer attributed to it, affiliation to a particular territory, as well as relations with the outsiders (Getachew 2001). Getachew (2001:58) points out, that inside each group common law, *mad'a*, and traditional institutions are respected, along with the authority of clan elders, *idoola*. All members utilize the land resources, including pastures and water, collectively. They also share graveyard, which is situated in the vicinity of the common settlement. *"In addition, cooperation between members is demonstrated in herding, holding communal rituals and sacrifices and a shared prayer place..."* (Getachew 2001:58).

Animals however, are not common wealth and they belong to



Fig. 29: Ali Adayto, Ewa woreda: two brothers sharing one compound

particular families. Yet, they may be herded together and stay during the night in common compound. Also in case the herd owner or his children are not present, or able to take care of their animals, other relatives take over all responsibilities for their stock.

How important such support is, and what mutual responsibility means for these communities, was declared in most of conversations we held with the Afar. One of the members of ganta settlement in Ali Adayto in Ewa woreda put it simple: *"Me and my brothers live with our families in these three houses ... Because we are brothers, we do all things together ... Therefore we will build the houses within reach of each other, in close proximity, so that we can work together, protect [our families and animals] together. We take interest in each of our animals. So if we have camels and we have cattle, and also other animals, we will make the animal houses between ours. And we will all take - I will take - responsibility for my brothers' animals. So, we will be together. We will not be separable. And it is the same with looking after children and women - it's together. The men will work together. So, if one man leaves, or two men leave, the remaining man is responsible for all the wives and the children. And that's how it works"* (Villager, Ali Adayto, 10.02.2011) (Fig. 27), (Fig. 29).

This and other similar statements explain the strategy behind

forming common living units, which is to maintain a strong web of mutual support, where families not only share natural resources on a particular land, but foremost unite in striving for the economical and physical security of their own people, as well as defending common assets like animals and land (Getachew 2001). In case any serious difficulties occur, there are also some specific expectations towards both mother- and father-lineage. The maternal family should help individual in life-supporting and material matters, whereas paternal relatives are reckoned upon in various conflicts - whether armed or in court, as well as in case of taking revenge (Getachew 2001:54). Being in possession of own herd and large family, helps building

subsistent households (Denyer 1978). But strengthening social ties provides an additional solid framework for dealing with difficult life occurrences. This informal cooperation system within the families and clans lays emphasis on social investment and strengthening pastoral ability (Denyer 1978, Brocklesby, et al 2009, Getachew 2001). Social investment means creating strong family units with many children around, who may later help in everyday housework and support elder parents at their old age (Ahmed Ali, Ali Adayto, 10.02.2011). It also involves the concept of mutual help and sharing land and fodder resources, as well as being reliable and respectful human (Fig. 27).

## TRADITIONAL ROLES AND DOMAINS, GENDER INTERACTION

Relations between members of an Afar community and above all between various age groups and sexes, as well as their interactions on daily basis are rendered by socially, religiously and traditionally rooted set of values, beliefs and expectations (Getachew 2001). The importance of social investment and respecting human values, but also respecting religion, old age and social hierarchy, are among these of a greatest importance. They assume fulfilling traditionally assigned roles, performing various social rituals, as well as specific daily activities.

### *Division of activities*

As a result of above factors, both women and men are separated in various matters of everyday life, so that they perform most daily tasks and rituals accompanied by the representatives of their own gender. Strict as it seems, this division rests on a silent

agreement of both groups resulting from practical distribution of responsibilities and domains, rather than on some formal dictate or belief.

Prussin et al (1997:59) describe thoroughly the division of productive labor in broader context of rural societies, which relates to the Afar as well: *“The work is carried out separately, and skills are transmitted within the tightly defined gender-discrete social interaction. The division of labor by sex and the nature of gender-discrete labor, productivity, and creativity in nomadic society are somehow far more evident and obvious than in sedentary agricultural societies. The responsibilities are more specifically defined along gender lines: who does what, who is responsible for providing what, who speaks to whom, and which gender occupies which space in the course of the day”*.

Age is an additional factor, by which distribution of these tasks and positions comes about. It evolves with time from an unproductive early childhood, through productive youth and adulthood, to an



Fig. 30: Ali Adayto, Ewa woreda: a boy following a flock of sheep in the vicinity of his compound



old age, in which actual productivity declines, but the status in the matters of decision-making and position in the community, or in case of leadership increases.

Clear gender role expectations play the most important role in assigning activities and allocating material domains within a household or a community. Prussin et al (1997:196-197) write, that in many nomadic societies traditional custom makes women responsible for most household-related routines performed in the vicinity of the family compound and men representatives of it to the outside, including the “long distance affairs”. The same applies to the Afar pastoralists.

During the day, main dwellers of the compounds are women, children and elder people. Hence the outweighing share in activities traditionally assigned to housekeeping and caring for the family is under women’s province. These range from fetching water and collecting firewood, washing dishes and clothes, grinding grain, churning butter, baking bread or preparing food, to taking care of infants and lactating stock *hooma*, educating children, as well as setting up camp, moving, erecting and maintaining the family house, producing furniture and various utensils of everyday use (Browning, Little 2008) (Fig. 34).

Adult men and adolescent boys are mostly absent from compounds, being busy herding animals, or else on the move to the remote areas in search of fresh pastures. If such need occurs, they may also take on any job, which entails moving away from the camp, even if it means leaving it for a longer time and proceeding to towns and markets on the borders with other regions, like Tigray, or Amhara. They may sell there their animals and produce, purchase supplies and goods and handle necessary arrangements with local authorities (Browning, Little 2008). Men also visit relatives in other camps and regions to discuss community matters. These discussions are insofar important for the pastoral ability of each family, for it is the only way to exchange information on the local matters and pasture conditions (*daagu*). They also risk their lives when it comes to



Fig. 31: Ali Adayto, Ewa woreda: Afar girl at school



Fig. 32: Ali Adayto, Ewa woreda: community attending local school in the afternoon



Fig. 33: Ali Adayto, Ewa *woreda*: men's responsibility includes caring for the animals, defending the family and handling various matters in the town and in the wider community

armed conflicts with the neighboring tribes (Fig. 33). Small children are nowadays encouraged to go to schools, yet they still often follow smaller stock around the settlements and help out with daily activities (Browning, Little 2008). It is not always possible for some communities to find public schools around and the informal education system promoted by local NGO's has not been fully introduced yet in all remotest areas. It is nothing uncommon that there, where living conditions are more difficult, only some children may be sent off to schools, while the oldest child, mostly female, may stay at home to help e.g. fetching water and collecting fire wood (Mr Dewud, 24.03.2012). If communities have better access to the natural water sources or built wells, such as it is the case of the community in Ali Adayto in Ewa, which falls under direct patronage of an international NGO, also mothers may attend the schools together with their children, because they are spared the most time-consuming and exhausting task, which is taking care of proper water supply for the whole family (Fig. 30) to (Fig. 32).

Productivity of men and women decreases over time, so that also their presence in the life of the community changes. Elder men do not go with the camels anymore, but they stay in a compound with women, children, taking care of milking animals, spending their time on discussions and paying visits to the neighbors or family. The spectrum of the work of women is also gradually

reduced, but they are still around helping with smaller children and animals, plaiting mats and baskets or cooking.

### *Domains*

Separation of activities and their distinct character result in specific allocation of material domains within members of Afar communities. The main occupation of men is herding and taking care of wellbeing of animals, so that most of these, apart from some lactating home-stock, belong to them. This makes them entitled to dispose of the stock in the name of their family including selling it, exchanging for other goods, or using it as valuable currency in conflict matters (Getachew 2001).

*"When men's herding responsibilities dictate an absence from camp, women become, in effect, heads of household"* writes Prussin et al (1997:148). For women this has both material and social implications and it sets their position not only in their own compounds, but also in the broader community. The house is clearly woman domain, it belongs to her including all the artifacts she produces, and it is in her power to decide about it. Its erecting occurs in the context of marriage: women receive the house and traditional mat for bed *olloyta* as a dowry from their mothers (Mrs Hawa, 22.03.2012) and it ultimately becomes a symbol of status of a female in her society - the status of a married and respected



woman.

Afar women create traditional house *daboyta*, as well as all artifacts related to it. All the furniture such as bed frame and additional mats, containers, baskets and house decoration, if not included in dowry, are made by future house owner or her closest female affiliates (Mrs Moomina, 12.04.2012). Women build and own everything they create for the purpose of the house' (Oliver 1998), and these, as well as many other activities

*1 Traditional marriage practices have direct implications on property relations within the nomadic family. Absuma marriage is one of the most common customs practiced between paired lineages of a clan or two clans, and it assumes marrying the cross cousin: a man, for instance, marries his Absuma - one of the daughters of his father's, or mother's sister (Mr Tibo 11.04.2012). This marriage form involves livestock transfer within groom's family, as well as payments for bride's family in form of 'bride wealth' (e.g. cloth, consumer goods, food for wedding ceremony). Thanks to the distribution of the animal assets among linked families, wealth may stay concentrated within one social group: "Most wedding expenditures are contributed to a groom by his close paternal and maternal kin as well as close friends. No livestock is transferred to the bride's family" (Getachew 2001:73). This marriage practice makes the head of the household own all family wealth, which includes also any lactating stock given by the bride's lineage. The husband's property does not encompass the house and any utensils produced by the women for its purpose, as well as the small stock, which belongs to the bride. (Getachew 2001)*

including maintaining or transporting house, are performed collectively. The wisdom on preparing materials and erecting dwellings is passed on to the younger generation.

Yet the effort to maintain compounds is shared between both male and female members of the community, though they perform different task within it. While women are mainly engaged in constructing the house itself, including collecting materials or producing all components (e.g. palm mats, sisal ropes, furniture), or moving it to another area if such need occurs, men take responsibility in fencing the compound and organizing enclosures for animals or other functions within it, as well as moving with animals if compound needs to be resettled: *"The man's work is building fences for the animals and bringing grass for the animals - if they bring grass. Apart from that, all the other work is done by women"* (Valerie Browning, 11th March 2012).

Prussin et al (1997:59) make additional distinction between the way raw materials are obtained and then processed, consequently assigning these practices to specific genders. In this regard "non-invasive" techniques, requiring precision or knowledge of the natural characteristics of the materials, are associated with female way of processing, leaving other techniques, which require use of tools or physical strength, in male's hands. Hence harvesting resin, collecting wooden branches, underground roots and tree-bark, followed by bending, weaving or tying elements together, as well as constructing traditional Afar house,



Fig. 34: Ali Adayto, Ewa *woreda*: all activities related to home and family maintenance like food preparation, fetching water and wood and looking after children belong to the duties of women; these include also building and maintenance of the houses and handcrafts of various kinds



Fig. 35: Ali Adayto, Ewa *woreda*: there is only very little interaction going on between men and women on a daily basis

lies in the feminine realm, whereas cutting tree stems for roof or branches for a fence, working with tools and stones, as well as building enclosures and applying other than traditional Afar building techniques, is assigned to masculine realm.

### *Space occupation and interactions*

The informal separation of male and female members echoes the division of responsibilities and social positions, and it can be traced also in the way the everyday interactions occur and the common spaces are used. Not only work, but also other everyday activities are carried out separately, including meals, preying, or social meetings (Getachew 2001). But unlike dwellings of other communities in the Sahara Belt, formal division of spaces according to their use by male or female within Afar dwellings, or direct assigning it to specific gender generally does not visually exist. There are rather some unspoken rules of behavior, which are to be related to and respected, if interaction occurs: they assume e.g. avoiding staying in common room at the same time,

and for this reason some additional spaces outside the main house may be provided. For instance a woman is expected to leave the house when her husband receives his male guests and there is no separate guest-house they can stay in. Same rules concern men, whose wives give birth: they are not allowed in until the woman completely recovers after giving birth.

In some areas of the Region, where houses of bigger size are constructed, divider curtains or walls may be erected to separate basic functions of the house and it may as well be a case that they serve at the same time as formal separation of users. The same concerns the so-called guest-houses, very common in the areas near the border with Amhara Region: these additional huts are meant for the visiting family members, but in everyday use they may as well become a "living room" for the family, or if any other visitors arrive. It is when for example only men may use it. Other informal space divisions, which occur, concern rather privacy levels of use to be respected by the visitor, rather than occupation by specific gender (Fig. 35), (Fig. 36), (see „Space differentiation“ page 190).





Fig. 36: Ali Adayto, Ewa *woreda*: Afar girls sharing an extended compound *daala*

## INTERACTIONS WITH NEIGHBORS

### *Land tenure, cooperation with other clans*

Afar land, *Afar baado*, is shared by various clans, which can utilize its resources according to the traditional land tenure rules: each clan member may freely settle on his clan land and benefit from common rangelands. Due to diminishing pasture resources also some inter-clan arrangements on mutual pasture leasing are recently becoming more frequent. In case the animals run out of fodder, a concession on settling and grazing on the neighboring clan land may be granted. This involves clan elders' agreement on leasing own land in exchange for payment in animals or expecting help on the same matter in the future, in case the situation turns to be difficult on the own land (Getachew 2001). Such inter-clan alliances give more security both to the host- and the guest-clan members because everybody shares potentially same risk. Still, each clan may reserve some pastures for its exclusive use (*desso*) and the utilization of it may be forbidden to the foreigners.

### *Inter-clan or tribal conflicts*

Obviously access to grazing land is one of the most critical conditions for pastoralists to survive in their environment. Yet it became in the recent years the second, after water, most vulnerable resource, over which already many conflicts arouse. Particularly Middle Awash or Lower Awash *kalo* planes became a source of strain between local clans, especially since intensive agriculture has been introduced there in the recent decades and traditional land rights have been abused or ignored by some individuals or by state, which leases land for the purpose of "modern economy" and other political gains (Getachew 2001)<sup>1</sup>.

*1 Traditional communal land tenure has been violated in the first instance by the governmental policy on taking over rights to land and disposing of it for economical profits, but also by some individuals among the particular clan members who were in the higher social and political position. So these are not only the big international concerns, which lease the land from the government for their investments, who add to the conflict situation. Also individuals, who enclose some plots for their exclusive agricultural or grazing use, abuse the Afar common law of shared land resources (Getachew 2001).*





Fig. 37: Ali Adayto, Ewa *woreda*: Afar men are expected to defend their animals and families with any means both against wild animals like hyenas and hostile tribes, who attempt to kidnap herds of animals

Due to international investment undertakings, as well as internal clan conflicts on land access between agro-pastoralists and pastoralists, the total most fertile pasture area has shrunk to such an extent, that it became insufficient to sustain local pastoral communities (Getachew 2001). Even a short glance at the area view along the river, particularly around Gewane in the Middle Awash and Asayita or Dubti in the Lower Awash, reveals a dense pattern of cultivated plots, where direct access to the river is restricted to only few narrow stripes of land, which are not enclosed yet. Restricted access to pastures along the riverine *kalo* planes means also restricted access to water sources for animals. In consequence it forces local pastoralists either into armed clashes with the neighbors or to partly give up pastoral lifestyle and settle close to the local towns where they might take on casual jobs, or else even engage in the agriculture to earn their living (Getachew 2001) (see „Adapted settling strategies due to violation of traditional land tenure; environmental changes and conflicts on resources with neighbors“ page 98).

Pasture land has been additionally reduced due to the inflamed conflicts on the land-leftovers with the other neighboring pastoral tribes, which are in the similar situation of limited resources. The most serious clashes happen between Afar and Issa to the South-East and East of the Afar Region, which bring each year many human casualties and animal losses (Getachew 2001).

The pastures close to the borders of the enemy areas are very dangerous to access, however often they are the only ones providing proper fodder for animals. Even if their own lives and their animals are at stake, Afar and Issa pastoralists take on the risk of grazing their herds there, for there are often no alternatives left (Rettberg 2009).

Nowadays the sight of young armed Afar men riding on freight trucks and shouting in passion on the victory on Issa, is not uncommon anymore. Unfortunately these clashes became almost of daily occurrence, putting inhabitants of the border areas in constant fear of tomorrow and of their lives.

### *Adapting animal management strategies*

Frequent hostile interactions force local pastoral communities to take actions in order to increase own safety and safety of their animals. They adapt new herd management strategies, modify mobility patterns and revise settling strategies. *“These days the wandering as a survival strategy during the drought plays a secondary role, for the expansion of the Issa blocks the actual movement”* writes Rettberg (2009:167-168) about communities in the Middle Awash. The main parameter influencing decisions about changing migration patterns is the existence of potential risk of armed clash with other tribe in the



exposed area. The wet-period grazing planes of Afar along the eastern parts of the region are partly under control of the Issa and therefore are rather unwillingly visited. Movement ranges became smaller, less frequent and some pastoralists have even given up seasonal migrations to some extent, blocked by the presence of the neighbors and fear of conflict. The wandering perimeter shrunk from 50/100km to about 25km and is mainly concentrated around dry period pastures in the riverine areas. In the foreground of such changes lies protection of the herds from being stolen in the raids and this includes staying closer to the main settlement in case some additional armed support was needed (Rettberg 2009).

The herds are still being divided into mobile and home-based units, but often the number of the animals in the mobile camps is reduced and both units are reorganized, so that the composition of both of them involves bigger variety of animals than it used to be before. Many households in the *kalo* areas, for instance, comprise nowadays more cattle in the main compound than they used to have in the past and less in the mobile camp: in case the mobile herd is raided and taken over by the neighboring tribe, there is still camp-based stock unit left to supply the family (Rettberg 2009).

The camels and cattle graze rather in the proximity of the settlement and come back to the main compound before nightfall, where they can rest in the enclosed and protected pens next to the lactating stock *hooma*. This also minimizes the risk of losing all dry-pasture herds in the field, in case an assault is launched during the night (Rettberg 2009).

### *Adapting settling strategies*

These animal management strategies are aiming at minimizing the risks of losing them in armed collisions with the neighbors. However, due to the political background of the conflict with Issa, reaching since decades far beyond the borders of Djibouti and Ethiopia, also people are under threat and live in constant fear of their lives. The tension between these two tribes has already led to many casualties in the past. And this consequent enmity still influences formal choices concerning forming settlements in the area.

When pastoralists in the remote areas further to the north (like, for instance, the ones in the Danakil Depression or on the border with the Amhara and Tigray Regions) scatter to utilize as much land as possible and to avoid spreading animal illnesses, the Middle Awash communities stay together on the smaller parts of land and form rather bigger herding groups and family compounds. Previously, due the seasonal migration ventures of dry-herds to the raining pastures, the households were separated during the most of the year and dispersed compounds dominated also in these areas. Nowadays all of them live concentrated in the *kalo*, for the movement ranges became minimal (Rettberg 2009).

When forming new settlements, all new circumstances need to be taken into consideration to maximize the security of the

stock and people. Compounds form larger settlements of more cooperating households, which stay closer to each other in case support is needed. They may additionally take on defensive character when many houses gather forming a larger enclosed space in between. This is where animals spend the nights being sheltered from outside. Additionally men on posts may guard such settlement at night if needed (Rettberg 2009) (see „Adapted settling strategies due to violation of traditional land tenure; environmental changes and conflicts on resources with neighbors“ page 98).

### *Building typologies and exchange*

Choosing adequate dwelling typology involves considering multiple factors like degree of mobility of own community, local climate conditions, as well as availability of materials suitable for building purposes. For this reason ethnically different communities living in one neighborhood, leading similar lifestyles and having access to same resources, may implement same construction principles independently (see „Cultural context - environment - choice of dwelling form“ page 127).

Both tribes of Afar and Issa on the eastern border of the Afar Region, for example, subsist on pastoralism, which makes them and their shelters highly mobile. Around Middle Awash, where reed and its products are commonly sold on the local markets, both pastoralist groups erect similar elongated housing structures of a bigger size than the typical *daboyta* found to the northeast of the region, and cover it with reed mats, so only after speaking to the inhabitants, outsiders can recognize which tribe they represent. At the same time both Afar and Issa, who live in other parts of their lands, apply other typologies independently and adapt them to local circumstances and their needs (Mr Tibo, 12.04.2012).

On the other hand areas along the western border of the region are naturally prone to intensified exchange between Afar and Highlander culture, also on the architectural level. Here Afar may implement forms and building materials used by their neighbors if these work better for the given purpose and in the local context. Especially the ones, who partly abandoned their lifestyles as pastoralists and rely on local towns in terms of provision of goods, may turn to permanent dwelling typologies constructed of locally found building materials - typologies not included in traditional pastoralist building repertoire (Browning, 11.03.2012) (see „Housing typologies of the Afar - overview“ page 132). The beginnings of exchange reach back to the famine in the 1980', when pastoralists were struggling to survive along with Amhara and Tigray people without any governmental aid to support their lives. These nomads, who were migrating to the highlands because they had lost their animals and all other means to sustain their families, were settling along the borders in hope for improving their situation. Here they adapted local typologies, because traditional building materials for *daboytas* like palm mats were only obtainable far away to the east (Browning, 11.03.2012).



Fig. 38: Dubti *woreda*: arid planes around Logya in the Middle Awash

## ADAPTATION TO ENVIRONMENT AND DANGERS

Faegre (1979) remarks that nomad does not live as much in his dwelling, as in the surrounding itself. This sheds light on the attitude of pastoralists towards their shelters and deep connection to environment they inhabit. Traditional dwellings take root in their surroundings, take on dialog with it, so that they can function best within it (Oliver 2003). It is not about trying to control nature or to resist its occurrences, but rather to enhance connection and make it work in their favor (Prussin, et al 1997). Nomad seems to act in an even more humble way than his sedentary neighbor. He does not affect or alter surroundings, but rather takes it as it is and calculates each moving or settling decision, as well as the extent to which he will exploit local resources, so that they recover while he moves on to another area. *“The essence of the nomadic philosophy of nature lies in what could be characterized as a cultural ecology”* write further Prussin, et al (1997:188) and this notion refers to the attempt of nomad to build sustainable connection between his conscious actions and responses of environment, so that - despite constant exchange - natural balance may still be retained for future generations.

The need to defend group of close affiliates from various dangers, or to preserve privacy or ownership alone, become rather secondary factors justifying the need to build shelters (Vellinga, et al 2007). It is rather the necessity to respond to- and interact with the surroundings and climate conditions in a sustainable manner, which shape their dwellings in first place.

Climate in some parts of the Afar Region is harsh and demanding and dwellings have to be able to withstand all its occurrences and at the same time satisfy its inhabitants in terms of all their physical requirements: they must stand up strong winds, sand storms and short-, but horrendous rains; they must be resistant to excessive exposure to sun radiation and provide coolness and air flow in the extreme heat during the day (Mrs Moomina 12.04.2012), as well as keep the inhabitants warm during cold

nights (Mr's Mohammed's Wife, 22.02.2012). Design has to respond to seasonal weather shifts, the relief of the surface (Mr Ahmed 5.03.2012); take best advantage of the light and shadow, topography and the construction materials available on the site (Villagers Ali Adayto 9.02.2011). It needs to be resistant to vermin like insects (Mrs Fatuma 11.03.2012), but also protected from wild and domestic animals (Villagers Ali Adayto 9.02.2012) (Fig. 42).

### *Responding to specific physical environment*

The diverse geology and topography of the region influence probably most of the local climatic occurrences, making the highland planes along the borders of the region, the Danakil Depression and the riverine areas of the lowlands form distinct ecosystems supporting characteristic flora and fauna and providing different resources. Topography influences temperatures, winds and raining patterns, allowing richer vegetal cover in some areas and leaving other barren and hostile (Friis, et al 2010) (Fig. 38) to (Fig. 40).

The climate of the Afar Region can be characterized by seasonal changes and it tends to extremes allowing severe droughts and extreme temperature shifts at once. Although there are two main seasons being described in the literature: hot wet period and cold dry period (Getachew 2001, Rettberg 2009), the occurrence of rain in the hot time may be very tricky and unreliable, allowing years with very scarce rainfalls and leaving pastoralists and their animals in very difficult situation (Valerie Browning, 15th Oct. 2010).

Housing structures of Afar pastoralists are made of lightweight porous materials forming many layers, so that they can stand diurnal variations of temperature and work well both in the cold of the night and in the heat of the day. Their performance does not





Fig. 39: Amibara *woreda*: *duka'a* - raining pastures of Afar living in the Middle Awash

base on temperature-damping effect like it is by materials, which have greater thermal mass, and so it is not possible to completely avoid heat transmission. However, the relatively good insulating properties of palm mats are enough to protect people from sun radiation providing shadow and relative coolness, making perceived temperature inside comfortable for house inhabitants. Additionally opening demountable mat elements allows air circulation, and closing them provides protection from sand storms (Mrs Moomina 12.04.2012) (see „Daboyta and environment: building physics“ page 168).

Especially there, where vegetal cover is modest, blinding reflectivity and heat radiation from the earth surface make it unbearable to stay in the sun during the day. Houses, pens and fences create patterns of shadow, which change during the day and are eagerly sought after by people and animals while their daily activities. Especially in the morning and in the evening

when dwellings and other elements cast deep shadows, to the west and east accordingly, some home tasks may be performed outside (Prussin, et al 1997). If the morning is too cold, the opposite, sunny side of the house may be chosen to do morning food and tea preparation, or even the inside of the main house, where small fireplace is lit.

During the day, as heat rises and shadows become minimal and difficult to find, shades of single acacia trees and shrubs with their wide spread branches may become an extension of the living spaces of the community, where meetings and daily house duties may be performed as well (Prussin, et al 1997).

Similarly to the other parts of Africa also in the Horn of Africa seasonally shifting pattern of prevailing winds can be observed (Prussin, et al 1997; Denyer 1978). Two main wind directions, with some local disturbances resulting from topography of the area and differences in distribution of air pressure, occur in



Fig. 40: Asayita *woreda*: *kalo* areas surrounding Awash River



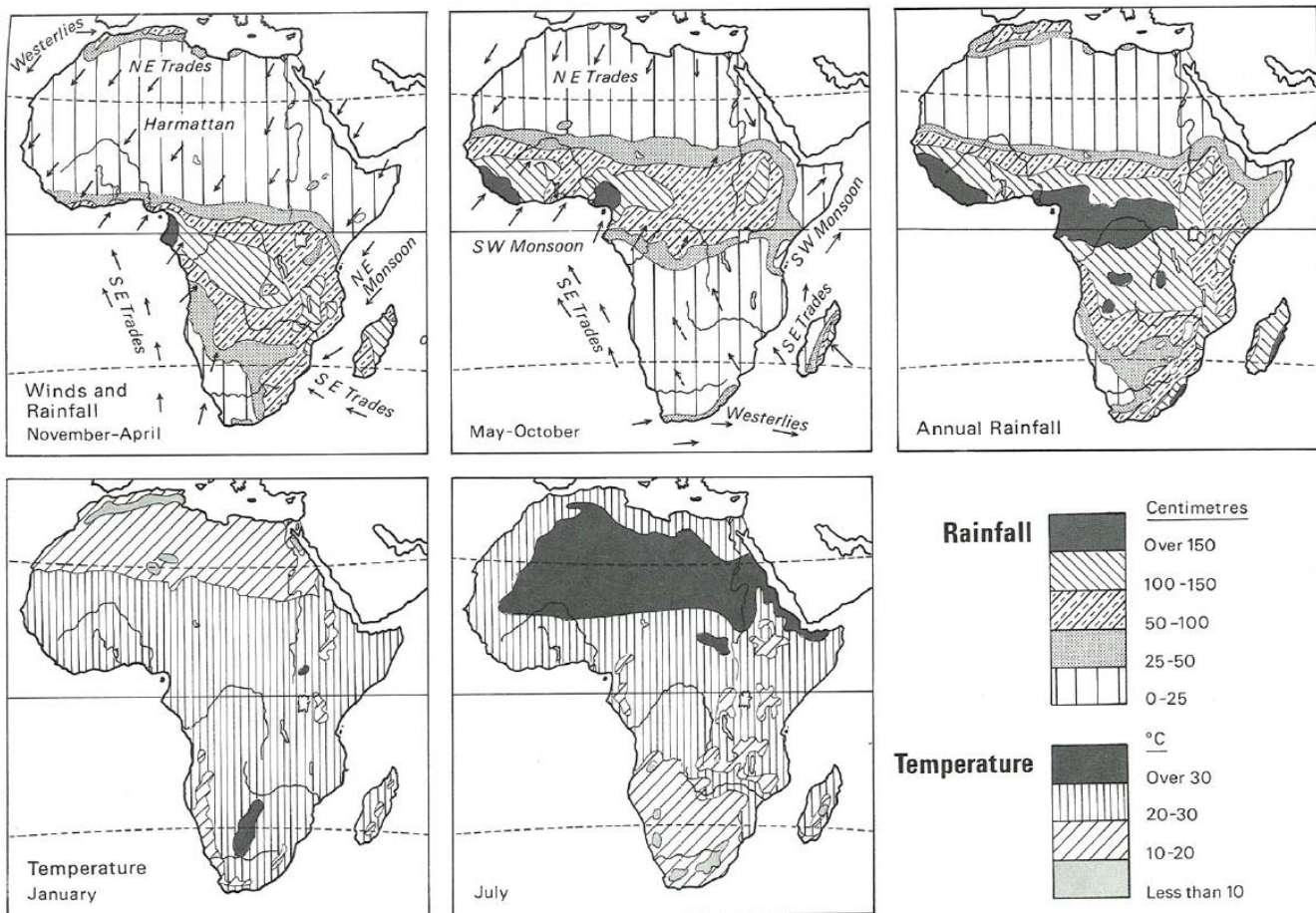


Fig. 41: wind patterns and annual rainfall in Africa; source: Denyer 1978:xiii

this part of the continent and they are highly influential in the Afar Region as well (Fig. 41). In the cold dry period *giilal*, from October/ November to January/ March, trade winds come from northeast direction, bringing masses of cold air to the region, so that the night temperatures can drop even to a couple degrees of Celsius below zero. This principle changes with the beginning of the *sugum*, short raining period from March to April (spring rains), through *hagay*, hot and dry period from May to June and towards the main hot raining period in summer, *karma*, from July to August / September. During these times of year the pattern of air movement shifts along with monsoon winds over Arabian Sea, bringing hot winds and also rains from the southwest direction (Prussin, et al 1997; Denyer 1978, Rettberg 2009).

Throughout the year, but especially in the wintertime and spring, sandstorms are nothing uncommon and unfortunately they can pose real threat to the domestic animals, but also to the dwellings (Prussin, et al 1997).

Perhaps the most ingenious adaptation of the dwelling forms of the Afar pastoralists to these circumstances is to be found in the shape and construction of their houses. The aerodynamic silhouette of a domical tent, as well as the armature structure made of acacia roots and branches, which are elastic enough to take on changing wind loads, make them the most logical structural solution to resist forceful winds and sand storms in

these surroundings.

Depending on the season and prevailing wind direction, houses are accordingly adjusted, so that e.g. the door or other openings, as well as adjacent spaces of importance for everyday routines, are always placed on the leeward side of a house. This prevents cold wind, rain, or sand from penetrating its inside and provides sheltered space to perform these routines. Also size and proportions of houses are adapted to the local wind conditions, so that e.g. they are built much smaller and lower where the winds are fiercer (see „Daboyta and environment: building physics“ page 168).

Just as fierce and intense the winds may happen also torrential rains come and go quickly. Yet they leave not much fresh water behind - the evaporation on the barren and dry land follows very quickly (Prussin, et al 1997). The amount of annual rainfall differs according to the distinct topography of particular parts of the region and is also seasonally dependent on the wind directions (Friis et al. 2010). Very low rainfall, especially in the desert areas, limit variety of plant sources used in the building process. Intermittent rivers bear waters only seasonally. It comes from rains in highland areas and is only sufficient to sustain some local species of trees and bushes. On the other hand, riverine planes along perennial rivers offer fresh pastures and fertile agricultural land, but also bring potential risk of flooding (Hughes 1992). The



Fig. 42: Kori woreda: sandstorms are very common on the barren planes and can be dangerous both for animals and human dwellings; *alta ecology*

paradox of the situation lies in the fact that as far as water is the scarcest resource of the region, its short abundance after rains may lead to other human catastrophes like the flooding of the Logya-Semera plain in the Lower Awash in 2010 did. At that time people were forced to leave their houses overnight and move further away from the river after heavy rains in the Highlands made Logya- and Awash Rivers overflow their banks. Not only loss of property and destruction of infrastructure were registered, but foremost casualties in people and animals (Mr Mohammed, 22.02.2012; Browning, 30.11.2012).

Pastoralists living in proximity of intermittent rivers may move their settlements to a higher point in terrain. In some parts of Afdera district, for example in Dodom area, some settlements are constructed on congealed lava flows, which are naturally elevated of the flood plain of the nearby rivers (see „Beneath Ertä Ale, Dodom area in Afdera; *Alta and Kalo ecology*“ page 92).

Apart from natural disasters, pastoralists deal also with wild animals, especially hyenas on the open planes, or crocodiles by the rivers, which needs to be taken into account while settlements are planned. Domestic animals have to be protected and kept together, especially at night; strong and high enough fencing may help avoid losses in livestock.

### *Available resources*

Sustainable land use in pastoralist understanding is not limited only to seasonal migrations, which allow avoiding overgrazing of pastures and maintaining grazing capacity for the following seasons. It concerns as well sensible utilizing of other locally found natural reserves of water, woody plant species and materials of geological origin. Minimizing risk of resources being overused is only then possible when pastoralists form smaller camps, which are distributed in a dispersed manner over bigger area (Faegre 1979).

In most cases local environment shapes the appearance of domestic structures predominantly, because the repertoire of building materials derives directly from specific vegetation cover and geological formations to be found locally (Prussin, et al 1997). However arid and empty the land may seem to the outside observer and however modest resources it offers, local people learned to take the most advantage of what is available, proving that surroundings contain all material components needed to erect best functioning shelters in the local context: *“It is a brilliant illustration of the economic use of limited resources and invention forced by the conditions of life...”* recapitulate Prussin et al (1997:170). There are multiple ways in which particular vegetal or mineral sources may be converted into useful construction material, which also shows deep traditional knowledge people





Fig. 43: Mile woreda: acacia bushes

gained over generations about their ecosystem.

#### WOOD AND ITS PRODUCTS

Especially vegetation pattern varies in the different parts of region, depending not only on the mentioned topography, but also on available groundwater. Wherever any woody plants can be obtained, especially these of acacia family - roots, branches, bark or even sap in form of gum Arabic are used in various crafting processes (Prussin, et al 1997).

In the Afar Region, being to vast extent desert and semi desert land, there are two potential timber sources available for nomadic use and these belong to the acacia- and palm-families (Prussin, et al 1997). Both of them are very crucial for nomadic dwelling culture and although they do not grow everywhere, they are utilized all over the region for several different purposes (Fig. 43), (Fig. 44).

Branches and long flexible roots of acacia-family are the most common construction timber source thank to the most widespread occurrence of this species and variety of possibilities in which it can be processed. Deep and wide root system of this tree, resulting from poor groundwater distribution, makes both its underground and over-ground parts of use for construction purposes (Prussin, et al 1997)<sup>1</sup>.

The thicker wooden parts may become structural frames of armature tents and traditional beds, as well as camel or donkey saddles. Fibers of tree bark are made to ropes and are used

to fix construction in knots (Browning 10.02.2011). Massive tree trunks become supporting posts of *grass huts* allowing bigger construction spans and comfortable room height. Bushes, twigs and thorns form fences and animal pens. Thinner twigs or bark are plaited to baskets and various house utensils. The products of acacia trees support in many other different ways all domestic economies: providing fodder for animals and fuel for cooking meals, but also for traditional medical practice (Prussin, et al 1997, Browning 10.02.2011).

Palm trees are rather rare to find, but the long, thin, fibrous leaves, which they grow are highly valuable for pastoralists, because the covers of their mobile mat tents are woven out of it.

Palms are typical rather for the lower desert parts of the region and riverine areas bordering with it. Only there, where permanent groundwater occurs, *Doum* palms may grow (Prussin, et al 1997). Some groups of these palms can be found e.g. on the edge of the desert in Nomogubi area in Afdera, but the main source of their leaves is found around Dobi depression in Elidar and may be purchased in the nearby Asayita (Browning 11.03.2012). From here both the raw material, as well as ready palm-mats are marketed to the remote areas of the region (Browning, 11.03.2012).

Although the *Doum* palm trunk is also a source of good quality building material, its processing requires professional tools, which is rather problematic for most pastoralist communities<sup>2</sup>. Nomadic societies utilize mainly palm fronds and leaves for mats

1 "Root and shoot system in all woody plants (including acacias) grow differently and serve different purposes in maintaining viable growth; as a consequence, their respective structural properties vary considerably. The cellular structure of roots is denser than the stems and branches that grow above ground, so that the grain more closely approximates that of hardwoods. However, roots are easier to bend than hardwoods because they have an elongated cellular structure and no appendages; roots do not develop the extensive outer cambium layers (i.e., bark) that characterize stems. Hence they are far more pliable." (Prussin et al 1997:29-30)

2 "The date palm, usually spared because of its nutritional value, has a reasonably straight trunk but is also unsuitable for most construction requirements: the trunk's cellular structure militates against flat sawing. Fibrous and soft, it cannot carry much weight. Although often used for roof construction in the oases, it cannot be bent, and carving the fibrous texture is well-nigh impossible. The trunk of the dum palm, in contrast, is compact, harder, and stronger, but, because of the same properties, specialized tools are required to cut it." (Prussin, et al 1997:28)





Fig. 44: *Afdera woreda*, Doum palm

and covering of the roofs (Prussin, et al 1997). They are much more accessible and do not require using any tools; the skills to process them are inherited by women from older generations (Wife of Mr. Mohammed, 22.02.2012).

There are also other species of trees found in the region, mainly in the riverine areas, but they are of no use for pastoralist, for they need to be processed with tools. They may only be utilized if some branches are found loose under trees and are mainly used for constructing fences.

But for pastoralists working with tools and cutting trees has also deeper moral implications. Referring to the traditional values, especially of the older Afar generation, cutting living trees is absolutely the last thing to do - these are part of the vulnerable environment and need to be preserved. Branches and twigs can be collected and if a house is to be constructed, people prefer to take dead trees: "...They [Afar] are conservers of the forest ... when they see a highland house, they cry. They don't think it's a good idea. When the whole stem, a trunk of a tree is taken, they cry ... they say that the soul of the land has gone" explains Valerie Browning (Ewa, 10.02.2011).

Most communities respect nature and are aware of their responsibility for their frugal environment, but these values gradually change - especially among younger generations. Cutting, as well as selling cut trees or even selling concessions to cut trees to the foreigners becomes more frequent. Alone in Logya some Afar admitted to selling wood officially from the nearby forests on the land of their clan (Afar wood seller 14.02.2012). Most traditional communities still collect firewood for cooking purposes, but in some parts of the region, especially where non-endemic and particularly invasive *Woyane* tree (*Prosopis Juliflora*) became already a plague, it is commonly accepted to cut it, burn it into charcoal and even sell it on the local markets (Browning 11.03.2012) (see „Ecological vulnerability“ page 103).

#### GRASSES AND VEGETAL PRODUCTS

In areas, where no palms grow, or where palm-mats are not

available on the market, grasses and other vegetable resources take over the role of main materials used for covering of huts (Faegre 1979). They are light, have good insulating properties and when smoked from inside, they become also waterproof.

Gewane in the Middle Awash, for instance, is known for the swampy areas around Lake Caddabassa (also known as Lake Yardi) overgrown with reed (Hughes 1992), which it is used locally for the same purpose, which palm mats fulfill to the north of the region, namely for house covering. Although reed mats have different quality and need to be processed by means of different techniques, still they are characterized by high durability and flexibility, which is needed for covering of a house, weaving mats or plaiting baskets (Mr. Tibo, 12.04.2012).

Wherever grass and hay is found, it can be used for thatching of the roofs; dry stalks of *dobera glabra*, may become material for fences, or animal pens; and where bigger variety of materials is available, like on the border with the Amhara and Tigray Regions, different construction techniques and coverings may be combined in one settlement (see „Choice of materials and construction“ page 69).

#### MATERIALS OF GEOLOGICAL ORIGIN, ROCKS

“The mosaic of soils in Ethiopia is highly complex and dependent on the complicated topography“, write Friis, et al (2010:20). Vast areas of the Afar Region are covered with soils of volcanic origin, partly revealing old lava deposits, salt planes and covers of withered rocks, sand, round gravel and flat volcanic stones (Friis, et al 2010 after Last, G., 2009: *The geology and soils of Ethiopia and Eritrea*. p. 25-26). Nomadic people do not have appropriate tools to work with these mineral materials, but they make use of them without processing as well. Rocks and stones may be piled up to form fencing walls of a compound or even small domes of corbelled stones to shelter small livestock at night in case some wild animals stray in (Mr Youssef, 18.03.2012). Out of stones a hearth inside of a house is composed or walls of an earth-oven for baking bread are rendered. When distributed around huts, whether in form of low walling or just as a ring of loose stones, they weight the mats down and prevent them from flying away during windstorms. They also preserve them from being destroyed, or eaten up by domestic animals. Graves are also formed of stones and water wells may be rendered with it as well. Flood plains may be found in the Afar Region along all perennial and intermittent rivers. They are rich in shallow deposits of sands and clays, which are of a very good quality for building purposes. These however have not been explored in the building context yet, apart from the urban centers, because they are not applicable in the mobile shelters conforming to the lifestyle of Afar. Local people know traditional techniques of making pottery out of clay, but this knowledge is not practical for pastoralists while they are on the move - woven baskets and light compartments fulfill the storage purpose on the move much better (Mr. Tibo 26.02.2012).

How all these complex socio-physical aspects contribute to the architecture of the dwellings of the Afar, it will be explored in the following chapters of this paper.



# WITHIN EACH OTHER'S REACH

## TRADITIONAL AND ADAPTED SETTLING STRATEGIES

As soon as we cross the border of the Afar Region, altitude decreases and temperature rises gradually. Landscape forms and accompanying flora change every hundred or couple of hundred of kilometers, displaying barren planes of thorn bushes, sand-, stone-, or salt deserts, followed by highlander hills, riverine flooding areas, savannah plains, or even lava fields. Not surprisingly is the level of abundance of particular flora the most important factor, which contributes to the lifestyle of the local people, including their settling habits, size, or form of their dwellings.

The attempt to classify settlements only by the location, size or spatial configuration, however, must result in misjudgment for at least three different reasons. One of them is the fact that even within small ecosystem pastoralists may apply more than one herding management strategy, which also influences their settling scheme. It is to no purpose to search here for a universal adaptation pattern to the inconstant surrounding, for such probably does not exist. On the contrary, for pastoralists it is rather the continuous adaptation to specific environment in various parts of the land, which brings more benefits in securing livelihoods.

The second reason is the difficulty in defining village size in nomadic context. Identifying formal boundaries of settlements or estimating their size may be questionable, for the literally understood physical nearness of households or compounds is not necessarily required to be affiliated with a particular settlement. It is a group of related people, rather than a group of physically near compounds, which makes an Afar settlement, *ganta*, just as it is a case in many other rural or nomadic societies (Denyer 1978). Certainly not without a point is here the argument Denyer (1978:19) makes about villages and houses, which are supposed to be built around people and their groupings. Not only does it physically apply to the Afar settlements, but it also clearly reflects in the terminology, which they use to describe their

habitation units: this refers to next of kin *buda* while meaning a basic compound unit, or to *daala* while meaning the extended family compound of very closely related people as well as other relatives of same lineage of a clan / tribe *kedo* (Getachew 2001). The elusiveness of the concept of defined settlement size becomes more apparent, when considering dynamic processes of growth, shrinkage, or displacement of settlements dependent on seasonal migrations, as well as on forming lineage - alliances within- or beyond a clan.

Also concentrating only on formal patterns or shape of settlements may cause difficulties, because they do not root in any universal or ideal notions implicated by traditional or religious beliefs, which would suggest clear forms and arrangements ready to apply. One formal classification is hence not possible and more flexible attitude proves to work better. Analyzing spatial dialog of the compounds with each local physical and social contingencies reveals influences these have on the form of the settlements. And it is perhaps possible only in light of these tangible factors to trace the occurrence of some similarities between them: the way particular problems are approached and how this knowledge is translated into spatial realization and utility.

Though each settlement is as unique as local situation, closer examination of various spatial forms reveals, that there is in fact something they all have in common and it is the functioning of basic living unit of *buda*, the nuclear family compound. It may differ in size, composition, or materials it is constructed of, but it combines all basic components of the pastoralist household, which is shelter for family members and enclosures for domestic animals.

Consequently, it is not the form of the basic unit, which distinguishes Afar habitation forms, but the way it is multiplied to form *daala* and *ganta* - a bigger compound of related lineage or settlement.



# BUDA AND DAALA COMPOUNDS: SPATIAL ARRANGEMENT AND FUNCTIONS

## Family compounds, cooperation

Since in Afar tradition and custom a new household unit is established in context of traditional marriage, the nuclear family unit *buda* consists either of newly married couple without small children (Mr Mohammed 22.02.2012), or a married couple with their small and adolescent children (Mrs Moomina 12.04.2012), but also widowed women, whose sons and daughters have already married. Each of these units has property rights over their animals, guaranteed by the *absuma* - marriage arrangements, but above all it develops with time responsibilities towards their own community - it is obliged to contribute to its wellbeing (Getachew 2001) (Fig. 46).

In a physical sense *buda* is composed of a single homestead of a nuclear family and enclosures of various size and arrangement for specific animals of home stock, *hooma* (Fig. 47) and (Fig. 48). If at least two of such closely related nuclear families live together in one compound, or in separate compounds, but close enough to cooperate with each other in everyday routines, they are considered an extended family compound *daala* (Getachew 2001) (Fig. 49) to (Fig. 52).

As it is very often the case, compounds of extended family may comprise from two to even more than twenty of *buda* units, and provide home to three or even four generations of members, while all men of the compound have one senior male ancestor. According to Getachew (2001:56-57) "*Afar residence is virilocal and patrilocal*", meaning that all men and children belong to the same *ganta* (settlement), whereas all married women are daughters of other *gantas* (Fig. 53). In practice a married couple is supposed to eventually move to the compound of the husband's parents, either after the first child was born, or shortly after marriage. Hence the more male offspring parents have, the



Fig. 46: Logya, Dubti woreda: *buda*: a young couple with their new born child at their *daboyta*

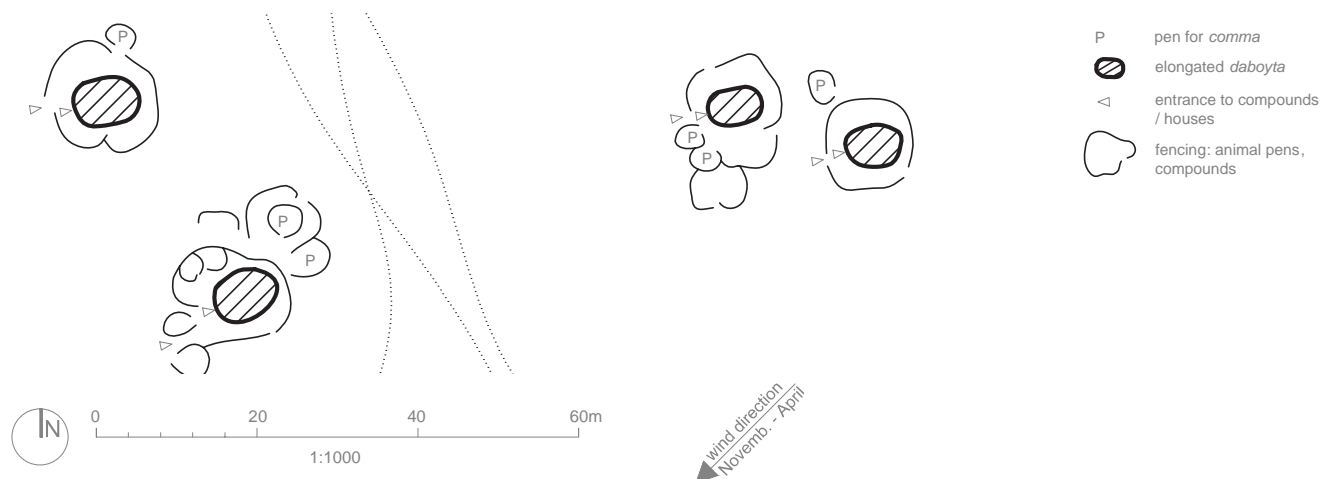


Fig. 47: Dodom area, Afdera woreda: single *buda* units separately enclosed, with pens for milking cows and calves adjoining the perimeter fence



Fig. 48: Dodom area, Afdera *woreda*: a single *buda* with pens for animals

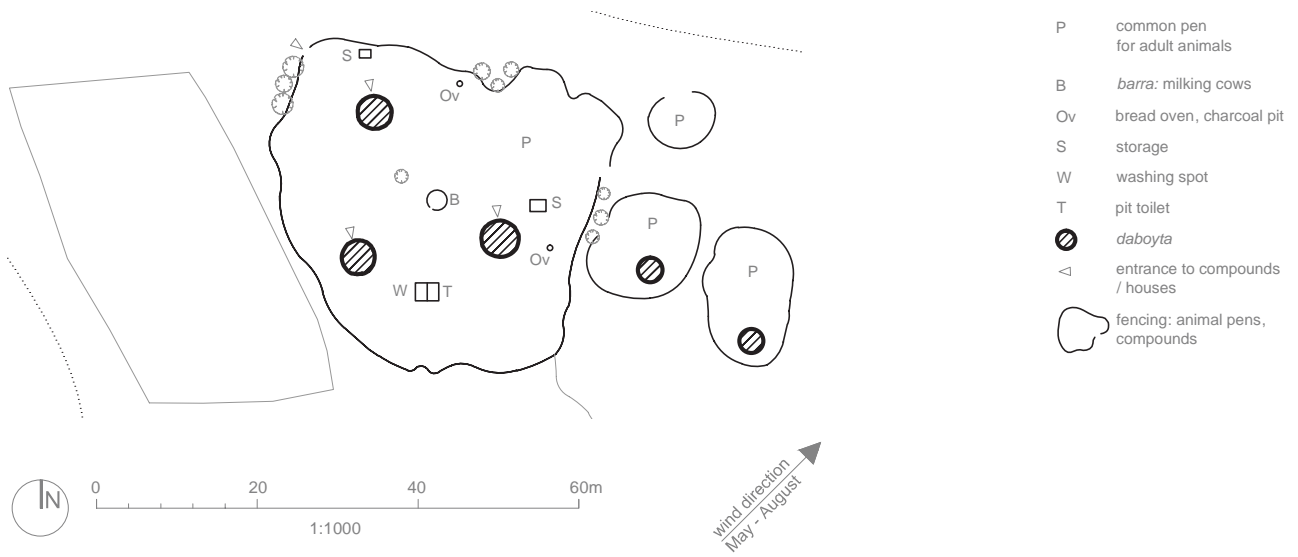


Fig. 49: Logya, Dubti *woreda*, town based *daala* of the house master's parents with single *daboytas* to disposal of each *buda*



Fig. 50: Logya, Dubti *woreda*, town based *daala*: three *buda* units belong to this compound: the one of the parents and two of their adult children with their young families





Fig. 51: Ewa woreda: compound of an extended family comprising permanent *grass huts* (front left) and mobile mat *daboytas* (front right)

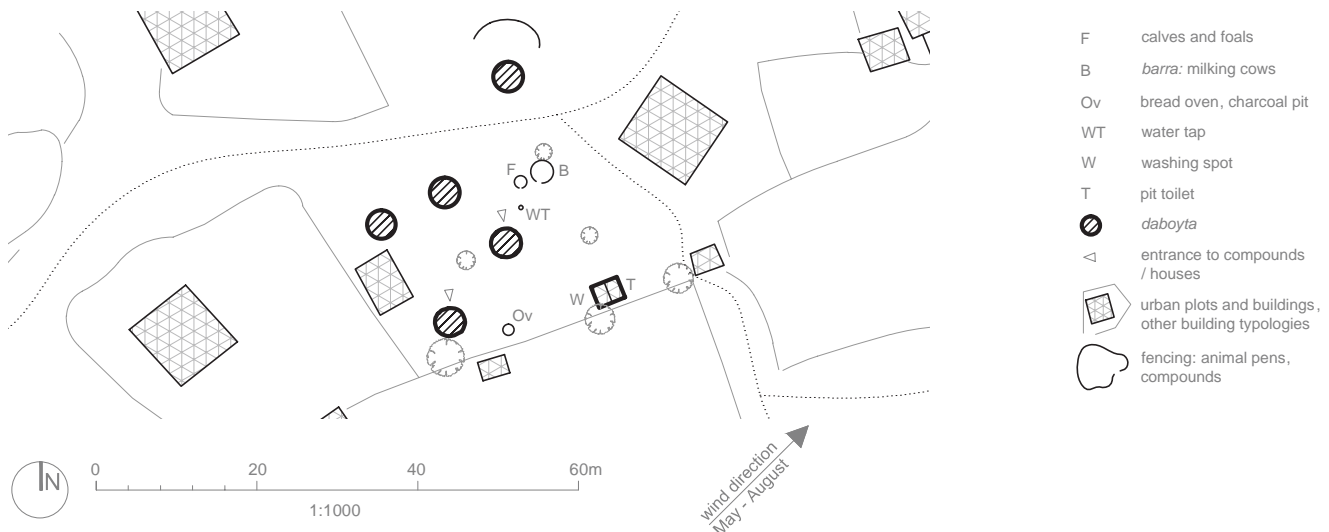


Fig. 52: Logya, Dubti woreda: town based *daala* comprising two *budas* of both wives of the house master, three of his other relatives, as well as a modern *ch'qa* house of his mother and sister

bigger may their compound become (Mr Dewud 24.03.2012). Term *daala* may apply as well to a compound of co-wives of one man, since Afar custom allows polygynous marriage. In such case *daala* compound may comprise from two, to even five *buda* units (Getachew 2001), depending on how wealthy a man is, but these households do not necessarily need to reside in one compound, allowing e.g. younger wives to stay in the compounds of their mothers, while the husband lives with the first wife at his parent's compound (Ahmed Ali 09.02.2011). They may as well establish separate *buda* units in common compound, which is very often a case (Fig. 52) (Mr. Sale 21.02.2012; Mrs. Aisha 08.03.2012).

Depending on the overall wealth of a family and personal situation or preference, a single house may be home for from two to even ten people at once. This is a case if a family counts many children, or a newly married couple stays together with mother of the bride and with siblings temporarily under one roof

till they establish their own *buda* (Mrs Zahara 12.04.2012, Mr Mohammed 22.02.2012). In some areas stroke by extreme drought and insufficient availability of life-supporting resources, like in Elidar, many families may be living together permanently under one roof - often not being able to afford even food, much less own house, and relying on support of local NGO's (APDA annual and field study reports, access on 05.01.2016)

The idea of forming *gantas* - settlements of related *daalas* - whether on a smaller, or a bigger scale, is directly related to the daily cooperation schemes taking their root in the coping strategies in particular surroundings. The closest cooperation, including taking care of children and animals, as well as performing everyday duties commonly, can be obviously observed between the members of one *daala*. Yet, it is nothing extraordinary, that even a greater number of *daalas* forming a bigger settlement *ganta*, may decide to undertake together migrations, as well as share various activities, take part in public festivals, or religious rituals (Getachew 2001).





Fig. 53: Ali Adayto, Ewa *woreda*: compounds of numerous daala units residing together are more livelier; at the front Afar girls, at the back Afar men discussing

In practice both the satellite wet-period settlements and dry-season permanent settlements are very often home only for small children, elder people of both sexes and women. Afar are not an exception among other nomadic societies, which Prussin, et al describe (1997) - also here is the separation of women and men in everyday life reinforced through distribution of specific responsibilities according to the gender. While women are supposed to take care of all domestic affairs including looking after remaining family and *hooma*, adolescent boys and men are most of their time on the move and busy herding remaining herds of non-lactating animals. If it is dry season and pastures are in remote areas, they may visit their compounds only while they return to water their animals, which is sometimes every couple of days or weeks. During the wet period, on the other hand, they are much frequent visitors to their homes, as the satellite family camp with *hooma* moves along with *magida*, which allows reducing distance and men may stay together with their families overnight most of the time.



Fig. 54: Ali Adayto, Ewa *woreda*: Afar man taking care of an infant in the morning before he heads to pastures with *hooma*



## Size of family compound and its compilation

Whether it is a dry period permanent settlement, or a wet period satellite settlement, the concept of functioning of the *buda* or *daala* compounds remains the same, the only distinctive feature being alternatively bigger size of houses and presence of permanent compound enclosures in the main encampment. Depending on how many households belong to a *daala* and consequently on the number of possessed animals, space enclosed in each compound is just as much as to comprise the houses, animal pens, burden camels and donkeys, as well as places for performing usual daily routines (Fig. 56), (Fig. 57) and (Fig. 58). Next to these more apparent tangible elements of nomadic settlements, to which housing structures and corrals belong, also other elements of space around and within an assemble enrich its spatial repertoire. To the more recognizable interventions



Fig. 55: Ewa worda: *daala* of numerous houses within one enclosure with additional internal enclosures for *budas* and corrals for *hooma*

count curtain walls of different kinds, or planted hedges to stop sandstorms. But also various adjacent spaces, which formally do not belong to the estate, like spaces under trees, bushes, natural shallow wells, piles of rocks and many other natural forms, which surroundings provide, become part of the nomadic settlement (Oliver 2003). This is perhaps more evident in the mobile satellite camps, where formal compound enclosures are not erected, but some spaces adjacent to the house definitely belong to it, for nomads make use of them in everyday routines (Fig. 59).

The shape of the compounds, though each time differing in size and arrangement, reveals naturally evolving circular forms of main enclosures comprising single or extended households, with adjacent pens for animals and enclosed spaces of other functions, but also subdivisions within the main enclosure (Fig. 55). This develops in consequence of the natural growth order of the compound structure while it is set up: when first arriving on a campsite, women put up houses and men build necessary enclosures for the most vulnerable animals. Only after this work is done, the main enclosure of the compound is erected (Browning 11.03.2012). Thus it all happens according to the rule: functions are not assigned to ready enclosed spaces, but the enclosures are built around functions and are adapted to them (Fig. 57).

The form may be perceived organic in a sense that it is flexible and extendable in each direction, according to the current needs of a family. It may grow through enclosing more adjacent spaces to the main structure if needed, or become denser if community grows and already available bigger spaces are divided to create new functions.



Fig. 56: Ewa worda: there is enough space in the compound - both for animal pens and living space for its inhabitants





Fig. 57: Ali Adayto, Ewa *woreda*: only after houses, animal pens and other functions in a compound are placed, a fence is erected



Fig. 58: Ali Adayto, Ewa *woreda*: compound comprises enough space for performing everyday duties and sheltering animals at night



Fig. 59: Ali Adayto, Ewa *woreda*: dry riverbeds, trees and bushes growing around are extension to the usable space of compounds and are keenly taken advantage of while community meetings, performing household duties, resting, or even playing



## Arrangement of houses within compound, use of space, hierarchy

The pragmatic attitude of the pastoralists towards functioning of their shelters rejects any preference of arrangement within a compound, which would have root in any symbolical notion. It can be fairly agreed upon the fact that no symbolical center can be found in these compounds; Afar house constitutes admittedly the center of the family life, but is definitely not of a central meaning to the functioning of a settlement.

The physical existence of a compound is in many cases justified by the need to shelter animals and if any of the functions receives special attention, these are precisely the corrals for very young animals and animals of special value like camel, goat and sheep foals and cows in lactating stage (Fig. 60).

In such cases the intention of pastoralists may be to place the enclosures closer towards the center of the main compound, just

opposite or next to the entrance to the family house, so that they can be within sight and easily guarded (Browning 9-10.02.2011) (Fig. 61). But it does not always have to be the case; as many examples show, depending on the local circumstances, animal pens are often found on the periphery of the main enclosure, but still close to the family house like in the settlements in rural Ewa (Fig. 55) and (Fig. 64), Gewane and Amibara (Fig. 66) and (Fig. 82), or just next to it, on a nearby rocky slope, where they are constructed out of stones or plant stalks, like it is the case of settlements in Kori *woreda*, around Serdo area in Dubti *woreda* and Dodom area in Afdera *woreda* (Fig. 48).

For one other reason is the location of houses within settlements beyond their central part of a practical importance. In the simple *buda* units dwelling huts tend to be situated rather on one side of



Fig. 60: Ali Adayto, Ewa *woreda*: camel cows are the most precious animals for pastoralist Afar, not only for the nutritious milk they provide families with, but also for their strength and incredible ability to adapt to harshness of climate; their number is an indicator of wealth and wellbeing of a family

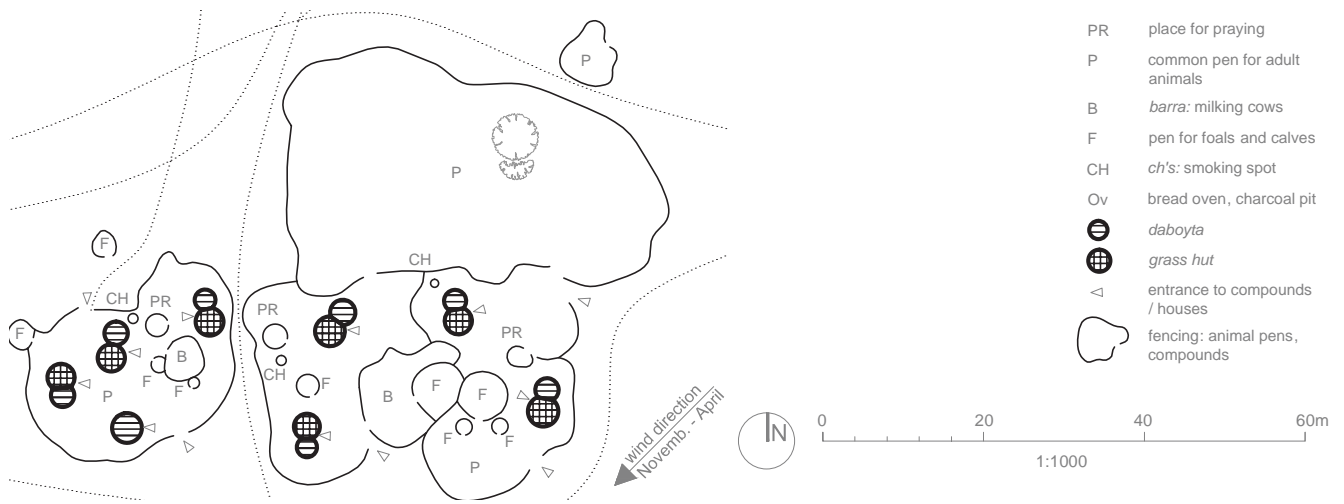


Fig. 61: Ali Adayto, Ewa woreda: *daala* to the right with adjoining common pens for *hooma*; *daala* to the left with no adjoining pens for *hooma*; both with centrally placed corrals for lactating stock and calves

the compound, with an entrance to the house preferably opposite to the wind direction - which changes depending on the time of the year - so that there is some space in front of the entrance to the house to perform everyday tasks or to receive guests (Fig. 58) and (Fig. 61). Such arrangement is especially important during the extremes of cold and hot seasons, preventing cold wind and sand storms penetrating the houses at night during dry season and sandy heat streams during the raining season (Browning 9-10.02.2011). This applies also if more houses belong to a *daala*, making mutual spatial relations between single households not as important, as the arrangement of space between the houses and the pens of small animals in the single *buda* sections.

Needles to say the same practical attitude precluding symbolical principles of space arrangement assumes no intended differentiation of dwelling structures according to hierarchy in specific Afar community: neither religious – though not in all cases

- nor political, nor social. Although hierarchy shapes everyday interactions between communities on the global and local level, it seems to have very little influence on the habitation forms of people within their communities. Their villages and compounds, writes Denyer (1978:20), are “an arrangement of more or less equal buildings”. As a result of this, community elders, teachers, or ordinary family members live in similar houses, not to be distinguished one from another in terms of used materials, size, or decorations (Fig. 45) and (Fig. 62). Religious leaders – sheikhs - in regions with closer relations to town, live rather in more “modern” typologies, but they settle rather next to communities and not within traditional compounds, which is perhaps one of this examples of demonstration of their position in the hierarchy of community and it is a rather recent development.

In fact, in remaining cases huts meant for dwelling purposes may differ conforming to their practical use, but it amounts to the



Fig. 62: Chifra woreda: there is no differentiation of built structures within one *daala* or *ganta*, which would reflect social hierarchy within community, building effort is a joint undertaking of female community





Fig. 63: Chifra *woreda*: the difference in size of the structures within one settlement, particularly in settlements in the western part of the Afar Region, may be attributed to the level of mobility intended for them: the mobile mat *daboyta* is smaller than the permanent *grass-hut* for a practical reason, so that it can be easily dismantled and transported on a camel as soon as seasons shift

range of mobility, which is intended for them and consequently to the choice of materials they are constructed of. Depending on the part of the region, local custom or specific needs of the family, physically a *buda* unit can have one- or a combination of a couple of residential structures to its disposal (Fig. 55), (Fig. 61), (Fig. 63) and (Fig. 88). In some areas, where mobility is much higher, like in the Middle- and Lower Awash *woredas*, or in Elidar, Dubti and Kori *woredas* in the eastern part of the region, only single Afar houses, typical dome-shaped (simple or elongated) mobile *daboytas* are encountered (Fig. 48) and (Fig. 50), whereas in the regions of more abundant flora, like it is in Chifra, Ewa, Gulina and some parts of Yalo *woredas* in western part of the region, occurrence of an additional so-called *guest-house* or permanent *grass hut* is widespread (Fig. 51), (Fig. 63) and (Fig. 64). Regardless of the number of huts belonging to a family, and how many *buda* and *daala* units form a *ganta*, settlement, there is no formal hierarchy or difference to be recognized between structures of similar function within one settlement, whether it is in their size or their arrangement in relation to one another (Fig. 45).

*Daboytas*, which are intended to be taken on a camel whenever family moves to a new destination, need to be smaller, lighter and made of durable prefabricated materials allowing quick dismantling and rebuilding in a new place; whereas *grass houses*, which are designated for additional residential functions and are not transported to satellite camps, tend to be much bigger in size, heavier and of more elaborate construction allowing to some degree decorations within structure (Fig. 51).

Practical reasons dictated by mobility allow only residential functions have their built representations. If any exemplary storage buildings or additional huts sheltering cooking places are to be found, it is so rather within more sedentary communities closer to the urban centers throughout the region. Alternatively provisional elevated platforms for storing hay for animals next to the house are erected, leaving the remaining functions integrated in the existing residential buildings (Fig. 88) and (Fig. 190).

All the buildings in one *ganta* are formally equal, also due to the fact that they are erected in a joint effort of all female community members. If notable differences in size of particular house types occur, they are observed between different *gantas* and not within one same compound and they may be attributed to the greater number of inhabitants of *buda*, better availability of building materials in the surroundings, but also to the higher skills of the builders and better financial situation of a family (Browning 11.03.2012, Mr Mohammed 22.02.2012).

Yet the substantial differences in size of dwellings are then easy to recognize, when comparing between different parts of the region representing various ecosystems. Here again such factors as local availability of specific building materials, degree of mobility of particular family and its relative wealth are decisive in first place allowing some communities afford simple or elongated mobile structures, and the others additional permanent residential huts of more elaborated construction and size (see „Ganta - lineage settlement“ page 76).

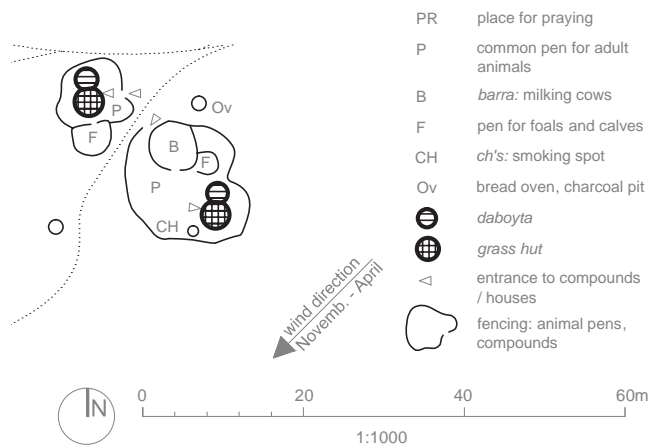


Fig. 64: Ali Adayto, Ewa *woreda*: two separate *budas* enclosed with own fences and with additional pens for calves and milking cows next to the houses; each household comprising *daboyta* and *grass hut*

## Size and form of animal pens, their arrangement, division of animals

The role of an enclosure is to protect domesticated animals, especially during the night, from wandering off and being attacked by wild animals living in the same area, but also from being stolen by neighboring tribes for their own use. *Hooma* comprises mostly very vulnerable animal cows in lactating stage and their offspring, which is still too small to follow the dry herds *magida*, so it is an easy target for hyenas in most parts of region (Browning 10.02.2011) and exceptionally also for wild cats close to the Awash National Park savannas (Mr. Johannes Apr. 2012). Enclosures provide also shelters when sand storms strike, so that the animals do not get lost when visibility is restricted.

*Hooma* consists of cows, pack camels and donkeys, sheep and goats, yet the composition of each household stock varies according to the region and fodder accessibility, on which these

animals feed. They facilitate everyday needs of the inhabitants of each particular compound, whose diet consists mostly of milk and its products, supplemented by meals prepared of sorghum. For this reason also domestic animals need to be managed: lactating cows are separated from their calves to provide also family members with milk. Maturity is hence one of the most important criterion, according to which animals are split (Getachew 2001), but not the only one. In most compounds separate corrals are assigned according to the type of animal: these particularly important to pastoralists like sheep and goat calves are put together in common pens, others like camel foals have their own enclosures (Browning Feb. 2011) (Fig. 65) and (Fig. 66).

In many compounds a following assignment to pens can be observed: lactating sheep and goats are kept together in bigger



Fig. 65: Ali Adayto, Ewa *woreda*: age is one of main criterion according to which animals are assigned to pens; here camel foals in a separate pen

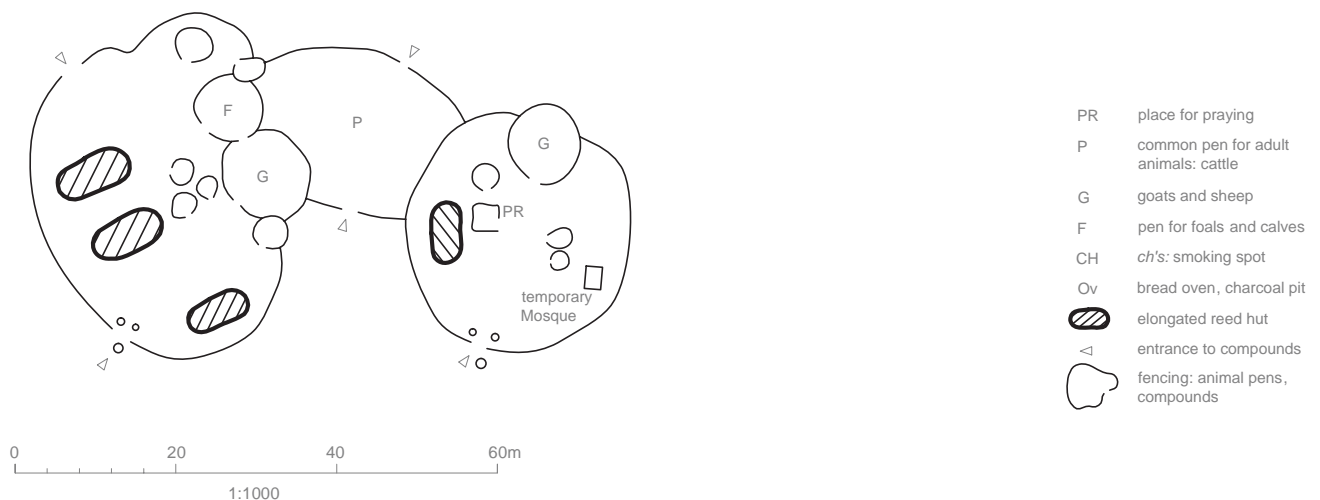


Fig. 66: Amibara, *daala* of numerous households with common pen for cattle (after Oliver 1997:2016)





Fig. 67: Ali Adayto, Ewa woreda: sheep and goats are released at dawn from their pens and are led to nearby pastures by young pastoralists

enclosures, sheep and goat calves together in small pens close to the main family house, camel foals and cattle calves also close to the family house, but in a separate corrals, whereas pack camels and donkeys either in a bigger enclosure on the periphery of a compound, or directly in the main compound without special corral foreseen for them (between the houses) (Fig. 61) and (Fig. 70). These divisions may as well be reduced only to the maturity factor, if number of animals in possession is rather small, and it is not worth the effort to erect additional corrals for them.

At the same time the relation between the houses and animal enclosures belonging to them is of a great importance. Especially location of corrals of animal calves is crucial, for they should stay within sight of the household members in case they would try to wander off. To achieve this, pens for immature animals are erected in either adjacent space to the house, opposite, or just next to the main entrance to it (Fig. 61), (Fig. 64), (Fig. 70), (Fig. 74) and (Fig. 76).

Most of settlements in these regions where wild animals hunt decide to erect additional fencing around the complex of the houses and animal enclosures, while pens for the smallest animals tend to be located closer to the center of it. As one of the villagers of Alele Subula in Ewa woreda explained it: “We protect them by putting our houses in the periphery and the animal pens in the middle” (Villager Alele Subula 09.02.2011). Also on the periphery, but on the opposite side of a compound, enclosures for the remaining animals are erected, as a result of which, calves and foals are protected from all sides (Fig. 66). By means of arranging the compounds of *daala* in a circular manner, an additional space between the enclosures is formed for cattle or camels to rest (Fig. 70).

In much bigger *ganta* complexes found in Amibara and Gewane, where local tensions of both tribes of Afar and Issa-Somali have enormous impact on animal management and settling schemes,



Fig. 68: Ali Adayto, Ewa woreda: cattle grazing in the surroundings



Fig. 69: Ali Adayto, Ewa *woreda*: cattle stays at night in a central space between compounds resulting from the circular arrangement of the *ganta*

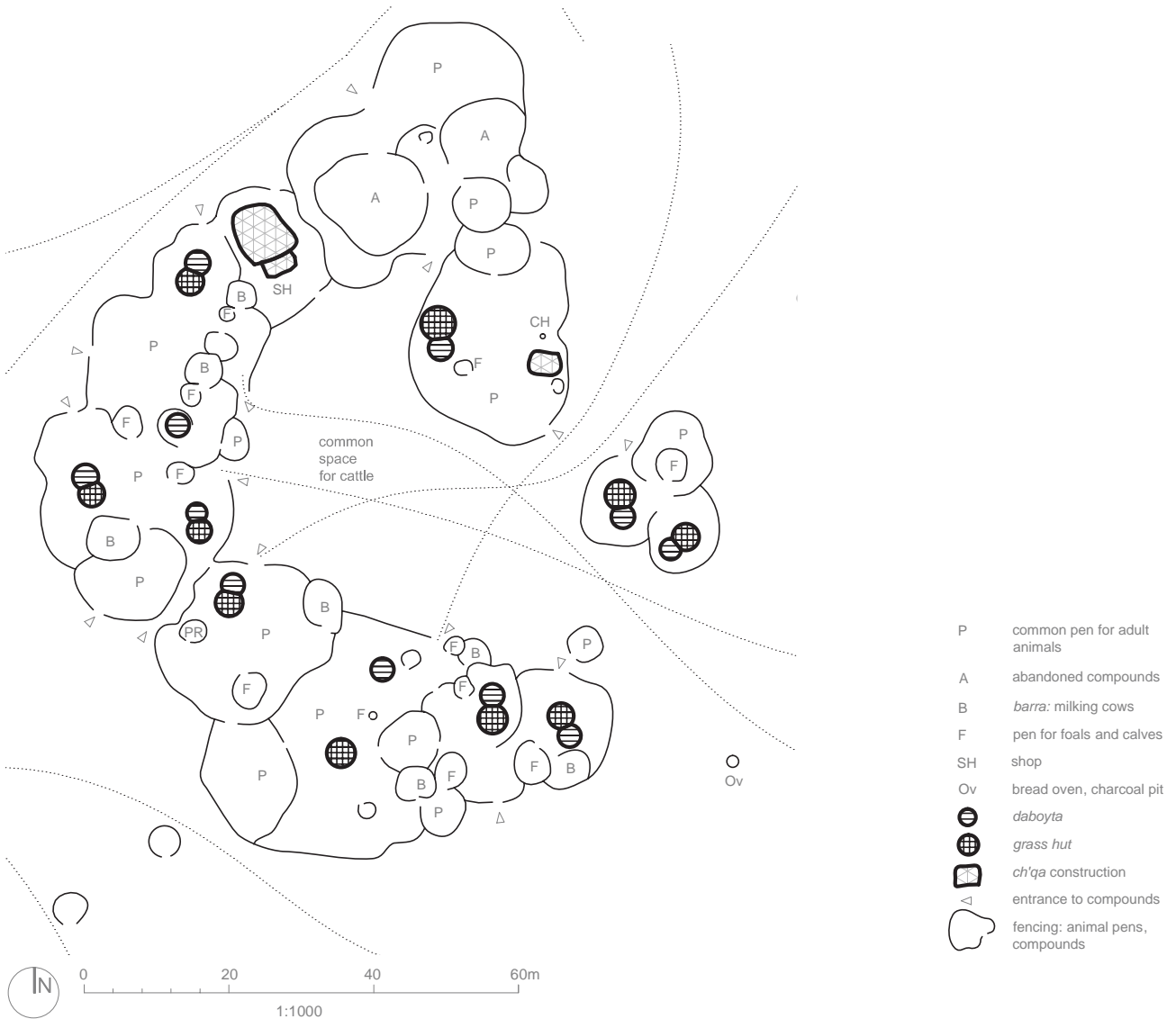


Fig. 70: Ali Adayto, Ewa *woreda*: *daala* with pens for calves and milking cows inside compounds, as well as common space for cattle in the central part of the assemble





Fig. 71: Ali Adayto, Ewa woreda: the newborn calves stay for a couple of days in *daboyta*, sheltered from the sun and wild animals



Fig. 72: Ali Adayto, Ewa woreda: small basket-like pen for goat calves placed in the main compound

a rather seldom arrangement of houses may be encountered. This may aim at encircling all animal corals with bigger number of family compounds, so that apart from regular pens for calves next to the houses, additional space between the main enclosures is formed to shelter all the adult animals of community from being kidnapped by neighbors (Fig. 82).

In some cases enclosures for lactating stock are the only ones found in a settlement, as the smallest animals are kept during the night inside the houses (Fig. 71). There are also single households of *buda* found in the region, where only calves are enclosed, either in pens made of plant stalks or dome shaped stone shelters (Fig. 48) and (Fig. 73), and the remaining animals stay day and night on the pastures around. This is very common in the satellite camps or in areas of very scarce resources, where not much effort is put into erecting permanent enclosures due to increased mobility and only these absolutely necessary - and

sometimes rather provisional - are put up.

In terms of animal ownership each *buda* keeps its smallest animals in the pens close to own house, separated from other small animals of other *buda* units belonging to the same *daala*, which also applies to the lactating stock. But in some *daala* settlements all animals, apart from the calves, may be kept on purpose in common enclosures. Family members of related *daala* camp may take responsibility for all animals of their compound: they share herding responsibilities, as well as gains in form of milk products.

Typical enclosures are erected of plant materials found in the surroundings like acacia branches, dead tree trunks and stalks of other plant species like *dobera glabra*, or of the volcanic stones if there are some deposits of it around. Their height may reach from about 1.5m if the purpose is merely to prevent animals from



Fig. 73: Kori woreda: corbelled stones constructions, either closed at the top, or open, make corrals for animals in a rocky landscape



Fig. 74: Dubti woreda: pen for *hooma* is placed just beside the *ari*, house, so that it can be easily looked after





Fig. 75: Ali Adayto, Ewa *woreda*: enclosure constructed of tree trunks dug into the ground and forming palisade with small opening closed at night

wandering off, to about 2.5m if there is actual threat of *hooma* being attacked by wild animals (Fig. 75) and (Fig. 76). These enclosures, which are built on to the main compound, share common fence with the remaining space of the homestead and are constructed of the same materials and height. The opening left on one side of the enclosure, facing the houses of the family compound, is left open during the day and closed for the night after animals return to the corral it for rest.

The amount of space within a pen needed for particular animal species is calculated, but just like it is in case of the usable space for a household, it is only as big as to shelter them at night. Early

in the morning all animals, apart from the youngest calves and camel foals, are released from their pens for the day and either wander off accompanied by adolescent boys to the nearby planes, or are lead to daytime enclosures encircling widespread pastures, not very far from the main settlement (Fig. 67) and (Fig. 68). After grass within enclosure runs out, a new area close to it can be newly marked and fenced, so that the former field is left to recover for a couple of weeks, or months, before animals return to it. In the meantime the young animals are waiting in the corrals, or in the family house, for their mothers to come to feed them in the evening (Browning Feb. 2011).



Fig. 76: Ali Adayto, Ewa *woreda*: pens for sheep and goats are placed next to the houses, at the centre of the compound; the height of enclosure must assure they stay safe at night





Fig. 77: Ali Adayto, Ewa woreda: dead tree stems and acacia bushes make the fencing of compounds in the areas where hyenas hunt

## Compound fencing

The diverse small enclosures for various functions within a compound are constructed of collected brushwood, branches, or plant stalks of about 1,5m height. Among the most popular plants used for this purpose throughout the region are various acacia species and everywhere-growing *dobera glabra* (Fig. 99). The main enclosures reach however the height of about 2,0m to even 3,0m, so that they can provide sufficient protection from wild animals and prevent the domestic ones from dispersing. For the construction of main enclosures tree trunks of bigger size are needed, and these can be easily found near the rivers. While constructing a main frame of an enclosure, branches of e.g. *Sarganto* are anchored deeply enough in the ground and then tied together with roots to ensure stability. This heavy structure needs to be complemented by smaller branches and stalks of plant species growing around and additionally reinforced with

thorn bushes (Fig. 77) and (Fig. 79). The most useful for this purpose are two kinds of bushes known locally: the *Hedayto* and *Habaleyta*<sup>1</sup> - wild fruit bushes with long rigid thorns. But any other acacia kinds with their smaller thorns would function as well. These are also used to mask lower parts of the house structure, to prevent mats and grass cover from being devoured by domestic animals (Fig. 77). Stones found by the rivers help to weight down the construction of the house, or are used for fireplaces and rendering of bread oven.

Apart from sheltering the inhabitants from dangers, such high and strong fences provide shadow, but also serve as wind-

<sup>1</sup> /Hedayto/ - (Afar) *Grewia erythraea*, and /Habaleyta/ - local trees in the western part of Afar region used for traditional building purposes; both have wild fruits (Browning 11.03.2012; Rettberg 2009)

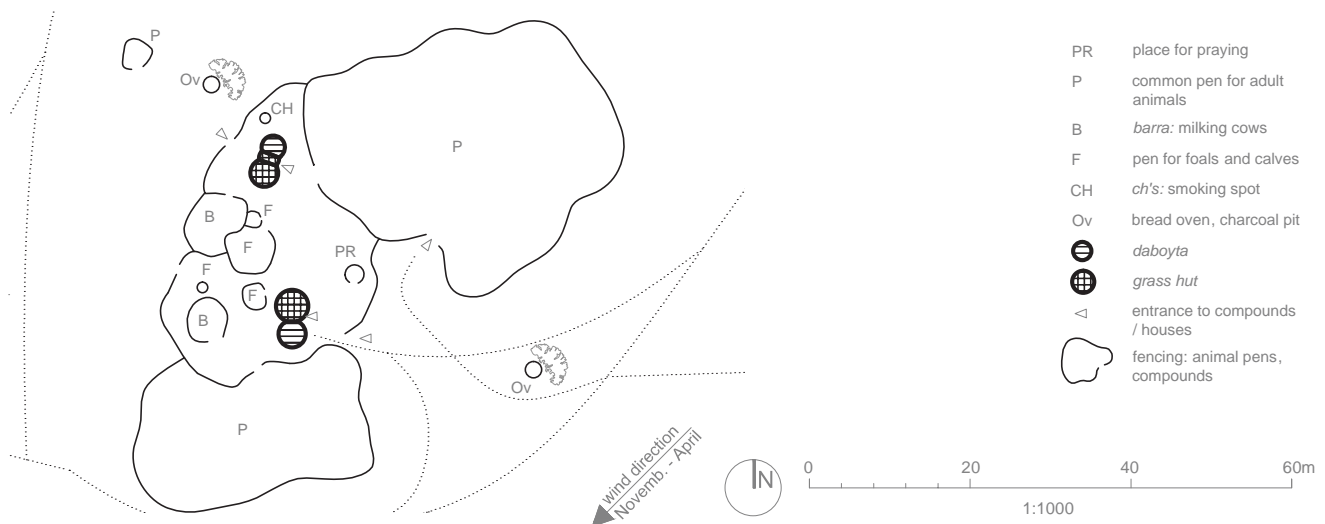


Fig. 78: Ali Adayto, Ewa: daala of two households in common compound and with separated pens



Fig. 79: Ali Adayto, Ewa *woreda*: entrances to the compounds are bolted at dusk with branches, wooden boards or acacia bushes - as soon as all animals return to the compound

screens when sand storms come. Also, as a by-product of this spatial intervention, a property of *buda* or *daala* is marked. Yet it should be kept in mind that also these not-enclosed, adjacent spaces very often serve pastoralists as an extension to the main compound and are regarded as their domain.

### *Entrances and orientation*

One or alternatively two entrances in the main enclosure may lead to a compound and one of them should preferably be located just opposite to the entrance to the main house, so that the hosts may welcome visiting guest, or can hold control over it in case unwelcome visitors arrive; this applies also to wild animals (Browning, Feb. 2011) (Fig. 78). While in many parts of the Afar Region entrances to the houses are adjusted according to changing wind directions about twice a year, the compound entrances may also be repositioned analogously. But it is not always the case. If houses and *ganta* settlements are situated on the slopes of the hills, the entrances to the houses may be facing downhill, so that the raining water does not penetrate the house and the entrance to the compound may be chosen according to other factors.

In practice one or two small gates in a perimeter fence mark such entrances, so while one of it is not used, it can be easily closed - temporarily or permanently. This occurs the same way the compounds are closed for night - either bigger branches or

wooden board may be used to block the gap (Fig. 79). It may as well be the case that two or more entrances are used equally throughout a year, especially if they mark the intersection with most frequented tracks between neighboring compounds.

Adjusting the orientation of the entrances to the houses according to the current wind direction should prevent cold wind or sand storms to penetrate their inside and grant some sheltered space in front of the house to perform household tasks. But there is also other way to lessen wind impact on the house structure, commonly applied in variations throughout the region, and it amounts to positioning of animal enclosures on the windward side of the compound in order to block the winds. If the prevailing wind direction in the cold period is from the north-east to the south-west and entrances to the houses are positioned facing the south-east direction, like it is for example in Ewa, the corrals of adult animals adjoin the main compounds on their northern side (Fig. 61) and (Fig. 78).

If special precautions need to be taken in order to increase security of the animals, as it is the case around Amibara and Gewane, where settlements take form of big groupings of *buda* and *daala* units encircling common space for animals, entrances of the houses and to the *gantas* may face the center of the compound, or the passages between the *daalas* instead of being positioned according to the wind directions (Fig. 82).





Fig. 80: Dodom area, Afdera *woreda*: settlement placed among bushes, which naturally shelter it from sandstorms

### *Various compilations of enclosures*

It is up to a particular family and surrounding circumstances whether *daala* erects one common fence for all *buda* units belonging to it, or if each single *buda* builds its own enclosure. People living in regions bordering with highlands prefer to construct common fences for the whole community, as it assures better protection from wild animals. Ewa and Chifra serve here as an example of extended family compounds, where not only *budas*, but also whole *gantas* are being grouped together and surrounded by continuous enclosures (Fig. 55), (Fig. 61), (Fig. 70) and (Fig. 78).

Similar solution may be found within the communities of Middle Awash, but here the background for such spatial arrangement lies in fear from being raided by neighboring tribes of pastoralist. Single compounds are built here one on to another, forming

bigger complex of households with complicated structure of fencing, sheltering not only animals, but also people (Fig. 82). On the other hand, there are settlements close to Erta Ale in Afdera, in Elidar, or in the Lower Awash, in which *budas* are either separately enclosed forming loose groupings with other related *budas*, or no fencing at all is foreseen for the compound, but only for the *hooma* (Fig. 48).

Whether compounds are open or enclosed, in most cases it is necessary to surround the house structure itself by very tight thorn bush fences of medium height, which are to protect its natural cover from being devoured by domestic animals (Fig. 77) and (Fig. 129). Such "second skin" to the structure weights it additionally down and lessens the impact of blowing wind building natural wind screen.



Fig. 81: Alele Subula, Ewa *woreda*: fence made of branches dug into the ground, forming a palisade



Fig. 82: Amibara woreda: concentration of *daalas* forced by local conflict with neighboring Issa over pasture assets





Fig. 83: Ali Adayto, Ewa *woreda*: space in front of the house is an extension to living space for a family: here everyday house duties are performed, guests are welcomed and male family members sleep on mats or blankets during hot time of year

## Other functions and adjacent spaces

It is perhaps spatially not very obvious at first sight, but settlements conceal a number of other functions apart from providing shelters for animals and dwellings, also crucial for its dwellers in their daily routines. These functions not necessarily have to be enclosed in compound, but may be found in the adjacent spaces outside of it as well.

It is preferred to place these activities, which require more privacy, within main camp and dedicate them sheltered space on the back of it, or on one side of the house, just next to the main enclosure. These are small spaces for ablution or other hygienic purposes including smoking clothes and body, and a low fence of thin poles dug into the ground may alternatively surround them (Fig. 85). Also prayer places, if any are foreseen, are preferably enclosed, so that there is a designated space for

them symbolically separated from the main space of a compound, which secures a little intimacy while everyday worshipping (Fig. 84).

Apart from these enclosed areas, there is spatially less distinguishable, nonetheless likewise important function foreseen within a compound and it is the space for receiving guests in front of a house, or just next to it. The importance of it and principles of its use belong to these aspects of Afar architecture, which are less tangible and as they are present only in the common knowledge, they are not easy to recognize by a stranger at first sight (Fig. 83) (see „Afar *arri*“ page xx).

Among other structures alternatively found in a compound are elevated platforms for hay storage next to a house, or small huts either of permanent, or provisional character to store water and other products, but also to shelter cooking place (Fig. 87).



Fig. 84: Ali Adayto, Ewa *woreda*: prayer place may be separated from the compound visually; clean hay is laid on the floor



Fig. 85: known as *ch's* (Amh.), or *bodo* (Afar) literally smoke; women use this small charcoal pit both for hygienic reasons and for relaxation





Fig. 86: Ali Adayto, Ewa *woreda*: small bushes shelter charcoal pits and bread ovens from wind

Though space belonging to a settlement may be clearly defined through closed fencing, very often also some adjacent areas and landscape forms including flora are regarded as natural extension of it and serve for performing various activities associated with household.

Trees and bushes are the most useful of them as they are a great source of shadow for performing everyday duties: whoever was once under this sun in the barren landscape, he may understand the nomad in his urgent search for shade and need to take advantage of each possible tree and bush. Not only grinding grain for bread may be done under a tree, but also other small house works including churning butter or basketry. It also serves as prayer- or resting place in the afternoon, while the sun burns mercilessly.

Group of shrubs, as well as stony landscape forms may form natural wind-screens for the bread ovens and preparation of

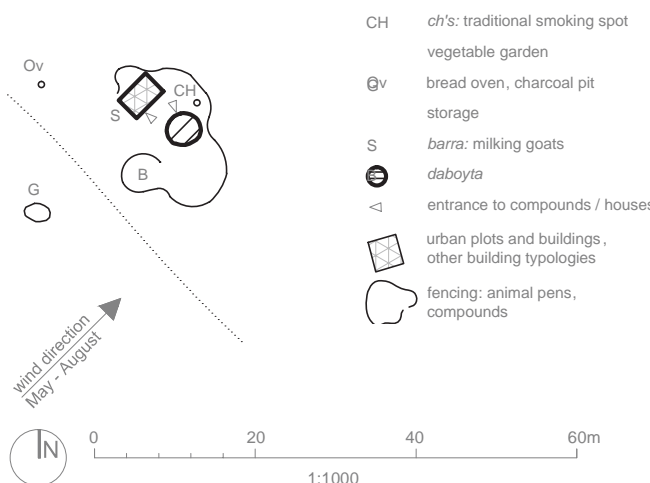


Fig. 88: Logya, Dubti *woreda*, town based *buda* comprising *daboyta* and a *ch'qa* hut as an extension of the living space and storage



Fig. 87: Gubiya, Yalo *woreda*: on the western border an additional hut for preparing meals including amharic *injera* may be erected

charcoal for various use (Fig. 86), but also protect housing and animals while sand storms strike. Natural stone or clay pits are utilized for fireplaces, but also for performing smoking of the clothes and body when charcoal is placed in it. Stony pits, when additionally plastered and sealed, may alternatively serve to collect water and then water animals, provided there is rain.

Nearby rivers are natural sources of drinking water for men and animals, washing clothes and refreshing body (see chapter on Afar Houses), though most of them are intermittent and carry water only while it is raining in the highlands.

Not uncommon, but encountered rather within sedentary community settlements, are also small fruit and vegetable gardens, though they require more care and relatively frequent watering, which may be impossible in some rural areas where water needs to be fetched from a very far distance (Fig. 88).



Fig. 89: Logya, Dubti *woreda*, compound partly enclosed, with small fruit garden in front of the house



# ESTABLISHING A COMPOUND



Fig. 90: Dodom area, Afdera *woreda*: settlements in the area are founded on the planes free of running water, preferably on the congealed lava formations

## Choosing place

In terms of land tenure within pastoralist communities, land belongs to a clan and the clan chief with elders administers it. Most of it serves as communal pasture land to be utilized by own people. The right to settle in particular area is granted therefore in first place to those, who are affiliated to a particular clan. Places to settle are chosen freely on the land belonging to own clan and are in a sense inheritable. Families settle their dry period main compounds in the area with dry season pastures, and the place they choose to settle remains in common knowledge as one assigned to their family, so that if they move to raining season pastures and return after the end of season, their compound with all they left within, or piece of land they chose to settle on, will still be there to their disposal (Inhabitants Ali Adayto 09.02.2011, Mr Mohammed 22.02.2012, Browning 11.03.2012, Mrs Moomina 12.04.2012).

Sporadically, if a clan has insufficient access to raining- or dry-period pastures, permission needs to be obtained from the clan elders of neighboring clan to utilize their resources. As with any other disputes, permissions, or animal and resources management issues, joint discussions follow and arrangements including payments in stock suiting both sides are made (Getachew 2001, Browning, Little 2008).

While settling a compound various environmental factors to have influence on wellbeing of people and animals are taken into account. The obvious ones are availability of water and pasture, but there is also a sanitation aspect, which makes pastoralists choose plots to settle in relative distance to another settlement, so that spreading of animal and human diseases may be avoided, while utilizing browse being more effective. Also other aspects of pastoral ecology are taken in to account, with the seasonally shifting patterns of rains and wind, whose more or less frequent occurrence can be reflected in the position, orientation and choice of elements in the neighborhood of the settlements.

Nomads naturally seek possibility to integrate into natural surroundings, to make it work best to their advantage, but also not to interfere in it in a way it would upset the natural balance (Browning, Little 2008). Stationary camps, preferably set in the *kalo* areas, need to be close enough to drinking water and fresh pasture to be reached easily, but at the same time far enough from the flooding planes, so that the water does not undermine the settlement if it overflows riverbanks and animals can stay safe from contracting water-borne diseases. Clean areas free of running water of both perennial rivers and these intermittent are chosen, as well as slight land elevations, or even congealed lava flows available in some areas (Fig. 90) : *“If it rains and they think, that the water is going to come from specific direction, the women will not build the house in the place where they suppose the water will run. They will make it far away from running water”* explains Mr Tibo, the interpreter of Mrs Moomina (12.04.2012).

During hot period of year elevated planes are also preferred for the smooth wind flow and better ventilation of the houses. But during the shift of winter and spring with its sandstorms, as well as during cold period winds, the opposite may be desired: slopes of hills may be used as windscreens against furious airflows, for which reason some communities erect compounds at the foot of the elevations, on their lee side. If this is the case, entrances to the houses are oriented downhill, so that water does not penetrate its inside while it rains (Oliver 2003) (Fig. 91) and (Fig. 92).

To the repertoire of most desired elements in nomadic settlement belong groups of bushes on the thorn bush savannahs and natural acacia forests, providing natural windscreens and lending the inhabitants of compounds some shadow under burning sun. These are also used as shaded places to rest in the afternoon and for such practical purposes like hanging household utensils for cooking, hanging washed cloth, or providing windscreen for



Fig. 91: Ewa woreda: *ganta* at the foot of slight elevation sheltering it from cold winds of dry period.



the fireplace (Prussin, et al 1997).

Availability of building materials in the surroundings, however, is not a decisive factor for choosing a plot to settle - pastoralist adapt to the local circumstances proving that creative process involves making best of the locally available resources.

The main settlements tend to be situated close to some urban centers with schools or market, or close to the main trading routes. Very often communities share a mosque, may have their own waterhole if no other naturally found water source is available and informal school (Fig. 103).

There is also a graveyard on the outskirts of the settlement. This needs to be placed carefully, away from running water, but it is not specially marked, though it may be low-fenced. Graves are marked with piles of rubble stones found around, for the ground is to dry to dig a deep hole for the ones who had gone away and the stones should protect shallow graves from being desecrated by wild animals (Browning, Little 2008) (Fig. 93), (Fig. 103), (Fig. 189).



Fig. 92: Ewa woreda: a settlement at foot of an elevation is naturally sheltered from cold period wind and sand storms



Fig. 93: Ewa woreda: cemetery is placed preferably at a side of a settlement, far from running water and drinking water source

## Building activities: division of labor

Both women and men of all ages share duties when a new compound is established, yet they are responsible for various aspects of it and perform different activities in a certain order. All work is done collectively, but separated according to gender.

After place for a new camp has been chosen, women dismantle camels and put up the tents, keeping in mind that orientation of the main house entrance should be adjusted according to the currently prevailing wind direction, whereas men are busy collecting materials for animal enclosures in the surroundings and subsequently arranging them close to the house according to needed space, as well as erecting corrals for them. In the meantime girls are sent off to fetch some fresh water and collect brushwood for a fireplace, whereas young boys lead *hooma* to local pastures, also helping to organize satellite enclosures there,

if needed (Browning 11.03.2012; Mrs Moomina 12.04.2012).

Only after houses and enclosures for animals have been erected, men mark the area of the future compound-fencing, if such is intended, and begin collecting necessary materials to enclose it. Because animal pens have definitely priority, the main enclosure may as well be erected the following day. Apart from estimating size of enclosed area, men adjust the main entrance to the compound in accordance to the house entrance. Men may also designate a prayer place inside compound, women on the other hand choose place for *ch's* (Amh.) - in Afar language *bodo* - smoking place. While this is done, women dig holes for bread oven and render its sides, lit fire for tee, milk sheep and goats, grind some grain for bread and prepare meal for the family (Browning 11.03.2012, Mrs Moomina 12.04.2012).



Fig. 94: Amibara *woreda*: *duka'a* extensive grass planes to green after rain

## Choice of materials and construction

All these materials, which are found in the local surroundings, may be of great use for pastoralists while setting a compound. The only constraints in applying available resources are their physical properties determining their suitability for building purposes, as well as skills of the constructor and alternatively his imagination.

If family leads traditional mobile lifestyle, all the materials needed to erect a house are usually transported on a camel from previous campsite, but materials for animal- and settlement-enclosures, including all other functions foreseen in the camp, need to be found and collected anew. If also some materials to build a house are to be exchanged, e.g. because they wore out due to the strong sun radiation, these may be either collected in the surroundings - like long and flexible branches or roots of acacia for the main load bearing structure of a mobile house - or purchased on local markets – like it is in the case of portable palm-, or cane-mats (Mr Mohammed's wife 22.02.2012; Browning 10.02.2011).

Depending on the landscape forms and specific local climate in various areas, distinct materials may be applied for construction of the same functions across the region. And it does not only apply to the materials of which houses are constructed, but also to compound fences and animal pens.

### *Duka'a*

In areas belonging to *duka'a* ecosystem – which include mostly planes of raining season pastures (Rettberg 2009) – resources of plant origin are the most frequently implemented ones for various building purposes (Fig. 94) to (Fig. 96). This is due to their good availability in these areas and most of all relatively rich variety in comparison to the lower situated remaining parts of land. Among flora of the grasslands and shrub lands in the

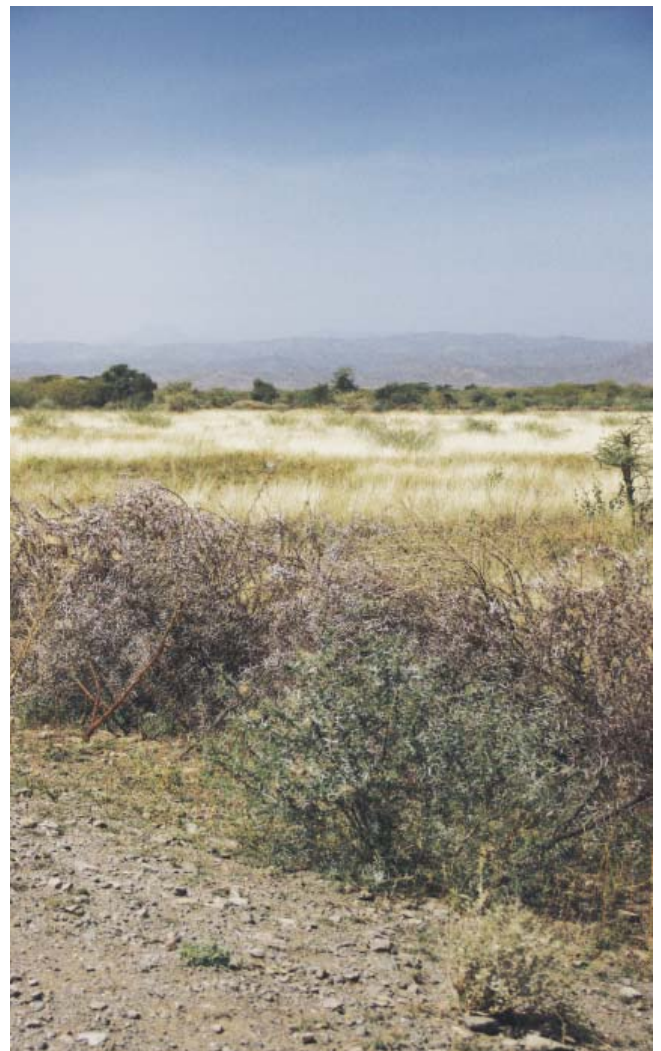


Fig. 95: Chifra *woreda*: savannah-like flora of *duka'a*: grasses and bushes





Fig. 96: Ewa *woreda*: *duka'a*: grasses and bushes among acacia forests

southern part of Region, as well as in Ewa, Awra, Chifra and Yalo *woredas* on the western border with the Highlands, one may find various tree species growing along the intermittent rivers, which serve various building purposes, but also shrubs and grasses, which are also good source of material for penning, basketry and other small housework.

The most popular wood species here are all acacia trees, due to the considerable length their branches and roots may reach along with their flexibility and lightness. These are the main source of material used for framed structures of a moderate size. Not only are they used in construction of mobile *daboytas*, but are also applied if additional houses for guest are erected, to encounter in the western part of the region. Here acacia branches are used for framing of a house, whereas grass for its covering.

Also *Sarganto*, a tree species growing by the rivers, is used for building purposes, but its inflexible structure allows application only either in penning works, if smaller branches are used, or

if obtained in bigger dimensions, then it may be used for posts supporting roof of a grass house of bigger dimensions, or when constructing permanent structures, like small huts for storage, *injera* house, residential *tukl* of Amharic people, or by *ch'qa* construction in the urban centers (Browning 10.02.2011, Mr. Tibo 05.03.2012) .

### *Kalo*

Around *kalo* areas of Amibara and Gewane of the Middle Awash basin, as well as in Dubti, Asayita and Mile *woredas* in the Lower-Awash basin (Eriksen, Marin 2011; Rettberg 2009), the repertoire of used materials changes according to the flora found in these swampy areas (Fig. 97), (Fig. 98) and (Fig. 185). These pastoralists, who did not settle to open agricultural enterprises, are very frequently on the move, which is the reason why their



Fig. 97: Asayita, Asayita *woreda*: *kalo* areas around Awash flourish after River floods; many bird species and predators like crocodiles live here





Fig. 98: Chifra *woreda*: big tree species can be found nearby both perennial and intermittent rivers; their dead branches are used for building fences

houses need to be mobile as well.

Along Awash tributaries of its lower part, trees of bigger trunks may be easily found, but they have almost no application in the mobile settlements due to their inflexibility and big dimensions. *Sarganto*, also known in this area, is again utilized for penning and construction of bigger enclosures, but is rather more useful in static constructions, than in these of mobile character. Various acacia species are again used for additional thorn-bush corrals. To the most widely used local tree and bush species for the tent constructions, *Derrapto* and *Kelayto*<sup>1</sup> belong, but also *Miderto*<sup>2</sup> trees, as their wood is elastic and reaches sizes needed to construct a frame for a house. For the cover Doum palm mats are used and these may be either purchased, or self-made of the material found in Asayita and Elidar market.

Around Gewane in the Middle Awash, marshlands are overgrown with reed, which is utilized in the local production of reed-mats, providing cover of the mobile houses of Afar living in the surroundings. From here they are also distributed to the southern parts of region, including Amibara and neighboring villages. Here also is the armature construction of tents made of locally found fruit trees and bushes; enclosures are made of branches found by the river. If a family leads more sedentary lifestyle, they may grow hedges of bushes around their compound to mark its borders, which additionally form natural enclosures both to households and animals kept within (Rettberg 2009).

Application of materials of mineral origin in *kalo* areas is limited to fireplaces and weighting down constructions. Lava rubble is not

1 /*Derrapto*/, /*Kelayto*/ - (Afar) local trees in Mile, Dubti and Asayita *woredas*, which are used for construction of frame of armature tent (Mr Mohammeds' wife 22.02.2012)

2 /*Miderto*/ - (Afar) *Cordia gharaf* or *Cordia sinensis*, wild fruit tree, wood also used for traditional building purposes - construction of *daboyta* around Awash River (Mr Mohammeds' wife 22.02.2012; Rettberg 2009)



Fig. 99: *Garsa* (Amh./Afar), *Gelata* (Afar), *Dobera Glabra* (Latin)





Fig. 100: Kori woreda: apart from sediments like sand and clay this *alta* landscape of volcanic origin offers rocks and acacia bushes

available here, but if stones are needed, they may be collected from the local riverbeds.

*Woyane*<sup>3</sup> tree, a plague of the local pastoralists, as well as agro-pastoralist, though available in abundance, is of no use to either feeding animals, or for any building purposes. Its wood is burnt to charcoal and sold in local markets (Various informants Lower Awash Feb.- March 2012; Rettberg 2009). (see „Ecological vulnerability“ page 103).

### *Alta*

*Alta* of the northeastern part of the Region (Afdera woreda, Kori woreda, Elidar with Dobi desert, northern Dubti with Semera and Serdo area and further towards the border with Eritrea and Djibouti) is perhaps the most demanding of all Afar ecologies due to specific topography, very scarce raining and fierce sandstorms throughout the year (Morin 2012; Eriksen, Marin 2011). Most of its areas are stony deserts of volcanic origin with shrubs showing only now and then, dry salt lakes and sand deserts (Fig. 100) to (Fig. 102). The only available resource found here in abundance is volcanic rubble, and hence it becomes the main building material of various enclosures. Dressing stones is not well known to the nomadic tribes, yet these of the lava-origin found around in Afar Region, are mostly rectangular in shape, porous and hence easy to stack one on another without special preparation (Fig. 48) and (Fig. 73).

<sup>3</sup> *Woyane*/ (Amharic) *Prosopis juliflora*, a non-endemic shrub, which was introduced to stop deforestation problems in Afar Region, but it turned to be an invasive weed only contributing to the acceleration of deforestation (Various informants Lower Awash Feb.- March 2012, Rettberg 2009)

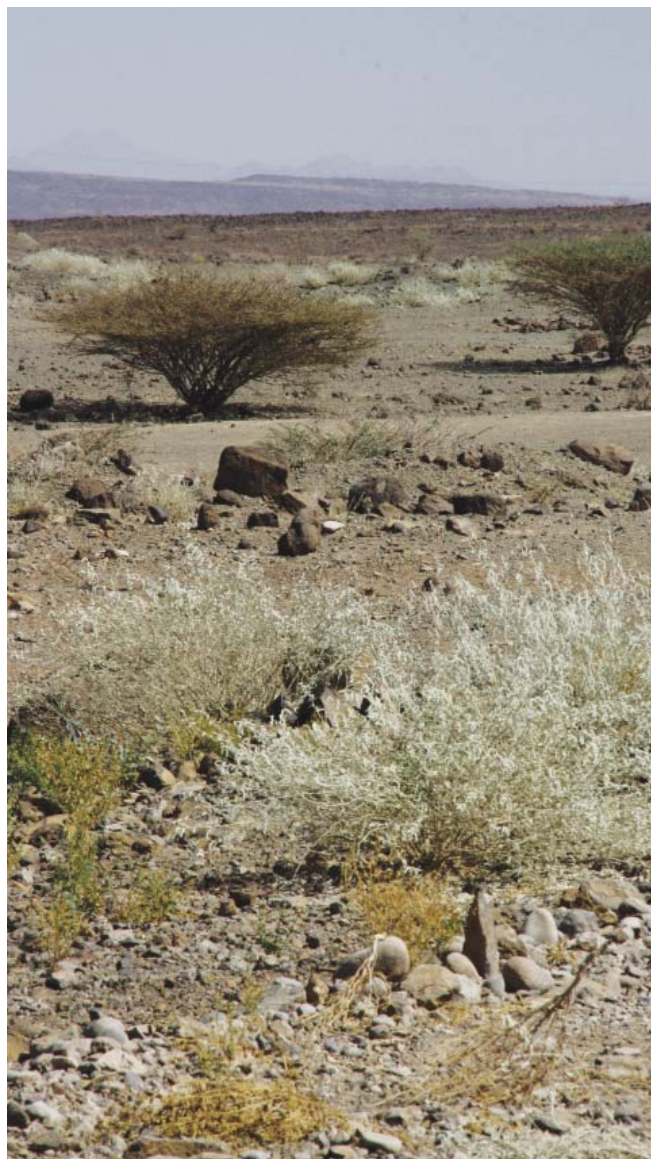


Fig. 101: Mile woreda: *alta* of stones, scarce grasses and bushes



Fig. 102: Dodom area, Afdera *woreda*: shallow sediments on volcanic formations with Doum palms are part of the landscape of Danakil Depression

For animal enclosures construction of corbelled stones<sup>4</sup> is applied; small dome-shaped shelters are erected close to the house, or on the slope of the nearby hill. A small opening, oriented towards the house entrance, is left in one of the walls, and it is closed at night, when young animals rest inside. High mobility of communities living here makes them very often give up on constructing bigger compound enclosures and only animals are sheltered at night (Mr Youssef 19.03.2012). However, also houses may be enclosed appropriately with a wall of very neatly and carefully arranged flat volcanic stones. These may be arranged loose one on top of the other, but they may as well be bonded with mortar prepared of clay and water found around (Fig. 48) and (Fig. 73). These enclosures are particularly wind lasting, but also animals cannot easily destroy them; it is also difficult for wild animals to get inside.

Of trees and bushes growing on these planes, which are easily available for pastoralists, some acacia species and *Woyane* may be found, but only the branches and roots of acacia are of use for building purpose. Here also Doum palm originates, from which the covering of the mobile armature house is made, but it grows mainly in the Dobi Desert in Elidar and in Nomogubi in Afdera. Because it is not available everywhere and not easy to harvest for pastoralists, the raw material for weaving mats has to be bought on the local markets in Elidar or Asayita, from where

<sup>4</sup> Corbelled domes - also called "false domes": Construction of horizontally placed stones on the circular plan, gradually projecting layer by layer toward the middle of it until they meet at the top

they are distributed to the whole region (Browning 11.03.2012). Not only ready-made mats can be purchased here, but also raw material - palm leaves and stalks - which are - according to Mr Fatuma living in our compound and engaging in commercial mat production - of a very good quality (Mrs. Fatuma, March 2012).

The landscape in Erta Ale surroundings, in the Dodom area in Afdera *woreda*, alternates between lava formations, desert with sand dunes and flooding planes (Friis 2010). In some areas scarcely any plants apart from *Dobera glabra*<sup>5</sup> (Fig. 99) and Doum palm may be found (Fig. 102), but then rubble of lava origin may be in some areas available in abundance and serve as a good construction material.

To construct animal enclosures, either dried stalks of *Dobera glabra* are anchored in the soil and bound together with ropes, or stones are arranged in a wall, encircling spaces for animals. Lava stones are also here used to weight down lower parts of palm mats of houses, since sand storms are very frequent and particularly fierce, and to close holes in the lower parts of construction so that scorpions do not get easily inside (Mr Youssef 18.04.2012) (Fig. 48). If any bigger branches of trees are found around riverbeds, these may be used in construction of a compound fencing, which shelters a house from winds.

<sup>5</sup> *Dobera glabra* - (Latin) plant native to Ethiopia, by some Afar called *gelata* or *garsa*; its wild fruits are edible when cooked for many hours, it is considered a famine food (Mr Youssef 18.04.2012)













-  intermittent river
-  tracks
-  houses (Afar typology: daboyta or grass hut)
-  ch'qa construction
-  fencing: animal pens, compounds
- Sch school
- M Mosque
- W water point
-  graveyard
- SH shop

Fig. 103: Ali Adayto, Ewa woreda: several lineages of a clan live in one area and form distinct gantas close to the local water source, school, Mosque and shop



# GANTA - LINEAGE SETTLEMENT



Fig. 104: Ali Adayto, Ewa *woreda*: *daala* consisting of three households *buda* heading together to a dry period camp

*Ganta* is an Afar term for a rural settlement - but it is a particular one. It may comprise numerous *buda* and *daala* units of the same lineage or various intermarrying lineages of a clan, which cooperate in daily ventures and share resources and facilities on common land (Getachew 2001). To name these groupings a village, in the meaning we know it from elsewhere, may not describe them precisely enough. Considering the fact, that in most cases they consist of closely related people (Browning 11.03.2012), Afar *gantas* prove to be community settlements, rather than formal administrative units comprising households residing in particular area.

Members of a *ganta* utilize all land resources including pastures and water collectively. They cooperate in herding their animals - *hooma* and *magida* - hold communal rituals within own community and share common prayer place (Getachew 2001), preferably a Mosque erected by a community close to the main encampment. They also share graveyard, which is situated near the main dry period settlement, as well as common water point and watering place for animals, if these are available. If the informal education reached their area, they may as well have common access to a school (Browning Feb. 2011). If there are enough resources available in the surroundings, like in the Ali Adayto in Ewa, *gantas* may cooperate and utilize common facilities with other neighboring *gantas* in the area.

Relations of encampments in one area may at first sight be not as apparent as of some others, the reason for which may be their relative distance from one another (Fig. 103). Physical nearness in the nomadic context has to be understood in a broader sense. Common territory may stretch up to a dozens of kilometers and *gantas* may be scattered all over it, or on the contrary, they may be concentrated in some parts of it, provided the availability of resources allows this.

On a spatial level *ganta* encloses a multiplication of basic family unit *buda* and, in extended version, *daala* units. Sometimes the affiliation of households to particular *ganta* is obvious at first sight due to the existence of physical enclosures surrounding them and visible nearness of households (Fig. 70), but then there are also such settlements in which the relationship of *budas* is less tangible because of missing physical boundary marks and then it exists only in the common knowledge of people (Fig. 140).

The way the multiplication occurs, or configuration of compounds which it forms, results from settling strategy adopted by the particular community and is contingent upon the local situation. That is, not only “*specific climate inconveniences*” according to Vellinga et al (2007) need to be addressed when settling in particular place, but also local tensions with other tribes, as well as other relatively new problems attributed to the urbanization of the region. Looking for general settling patterns may be therefore misleading and not provide sufficient understanding of its principles if all these factors are not taken into consideration. Alone a big family compound of many houses and animal pens may indicate both sufficient availability of resources and proximity of permanent water source in the surroundings like it is in some Ewa areas, or on the contrary - its scarcity - followed by the necessity to gather compounds to form bigger settlements in order to defend families and animals from attacks of neighboring tribes like it is in Amibara and Gewane.

The same applies to smaller *gantas*, which may either be encountered in predominantly pastoral areas (Getachew 2001), where restricted pastures make Afar utilize land extensively and require frequent movement, and then they also settle close to the urban centers, like around the Lower Awash, or in Yalo, where the resources for animals are in fact insufficient, but pastoralists diversify their livelihoods with wage activities, which they take on in the nearby towns or farms.

## Traditional settling strategies



Fig. 105: Mile *woreda*: further inland pastures may only revive after rainfall

### *Middle size community settlements in the lower Awash, central Afar Region; Kalo and Duka'a ecology*

In the heart of the Afar Region, around the Middle and Lower Awash basin, in Mile, Dubti, Asayita and Afambo *woredas* (Fig. 02), a great number of pastoralists still lead very mobile lifestyle as opposed to the sedentary agro-pastoralist in these areas, which gave up utilizing land in traditional manner and engaged in a commercialized one. As far as these plots of land, which lie directly on the Awash marshlands are since about 70's to great extent taken over by the further, the areas around flooding planes and these a little further inland still provide the pastoral communities with main pastures in dry period and are chosen as a strategic location to establish permanent settlements (Fig. 105) and (Fig. 106).

Though availability of vast planes of land covered with shallow fluvial soils to green after each rain or flooding seem to provide ideal scenery for pastoralists, in fact only middle size communities may survive in these areas. Their wellbeing and this of their animals is completely dependent on the raining seasons, which revive periodically local pastures, but these become year after year even more unpredictable, allowing cycles without rain extending to even a couple of years. Resources shrink, which forces bigger communities of a lineage to split sometimes to single *daalas* and intensify migrations in search of pastures independently. This allows utilizing bigger areas of land with easily manageable units of *daala* and *magida* - mobile animal herd - if resources are scarce.

Compounds in the lower Awash may comprise up to dozen or more tents, but this is very individual in each situation and elders may decide to split the camp to smaller *daala* units comprising three to four single households *buda* if resources in particular area are to scarce to facilitate the whole extended family (Oliver 1998:2017). Dispersed and relatively small, they follow their



Fig. 106: Asayita *woreda*: Awash River in its natural course



*magida*, which utilizes land extensively, moving from one place to the other as soon as animals run out of browse.

Depending on the overall wealth of each family one *daboyta* may house a couple of generations, like it is a case of Mrs Zahara, who shares the small space with her mother, her husband and her brothers - in total with six other family members. Her *ganta* comprises five such households, all members of same lineage, and they undertake migrations between Dubti and Asayita pastures twice a year (Mrs Zahara 12.04.2012) (Fig. 109) and (Fig. 110).

Increased mobility has direct impact on compounds, which consist almost entirely of the *daboytas*, the easy to dismantle wooden frame- and mat houses. Each nuclear family has ideally one *ari*, house, to its disposal, though in some cases even up to ten people may live in one such house. Regardless of the number

of inhabitants, its size seems to be quite uniform throughout the lower Awash communities, average diameter reaching about 3.60m-4.40m and the height measuring about 2.00m-2.80m (Fig. 108), (Fig. 110) and (Fig. 111). This size of a house is easily manageable for a group of 3-4 women to dismantle when preparing for the move; it is also manageable to transport it on a camel and two donkeys, and then to put it up again in a new place.

Asayita provides local markets either with ready woven mats to cover a house, or unprocessed palm leaves for weaving coming from the nearby Dobi desert in Elidar, or from Nomogubi in Afdera. Considering the fact that mats need to be exchanged every couple of years (depending on quality of the produce), pastoralist women prefer rather to purchase raw material, since it is cheaper, and weave mats themselves. The frame construction is made of flexible branches of trees and bushes found and collected locally



Fig. 107: Mile *woreda*: middle size settlements with corrals foreseen for *hooma*



Fig. 108: Dubti *woreda*: middle size settlement; natural materials are complemented with modern ones to enhance durability of the cover, but most of all, because it is expensive to exchange mats after each season

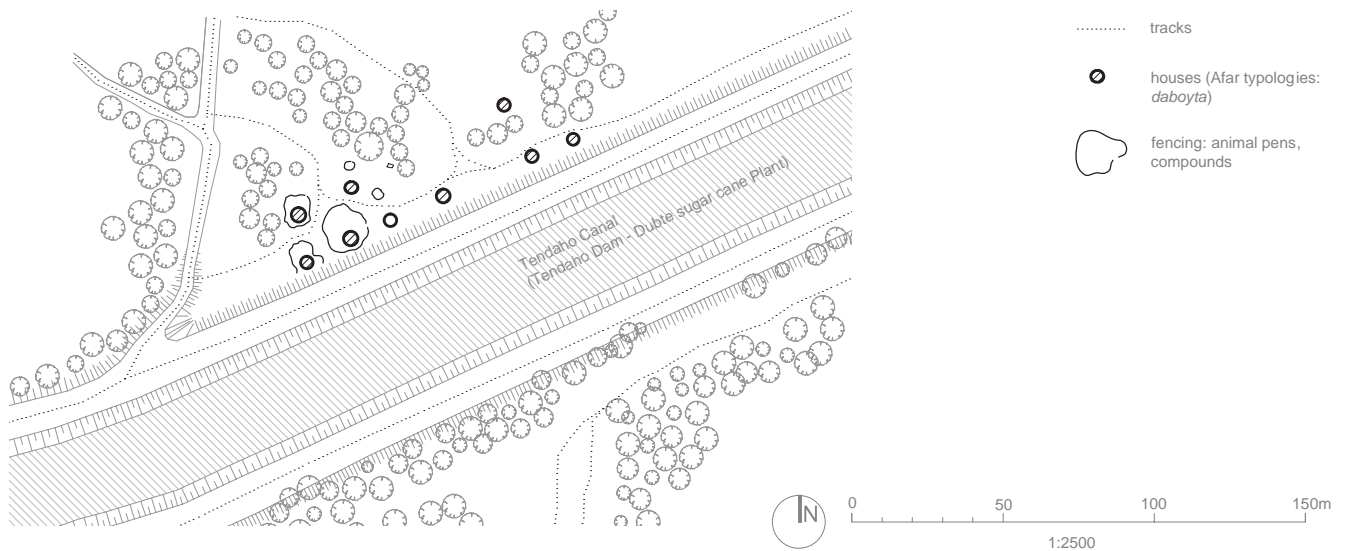


Fig. 109: Dubti *woreda*: *ganta* on the banks of Tendaho Canal



Fig. 110: Dubti *woreda*: *ganta* on the banks of Tendaho Canal

(Mr Mohammed's Wife 22.02.2012).

Houses, *aris*, are loosely grouped next to each other on one plot, without any formal separation between *budas* foreseen, unless it is to shield a house from wind or animals from dangers (Fig. 107) and (Fig. 108). Alternatively some additional huts for storage, made of tree branches dug into the ground and covered with whatever material is found around, may be erected, but these are left behind if the family moves on. Also outdoor bed constructions in front of the houses for guests or male inhabitants of a house may be erected; these are used mainly in the hot time of year, or if a house is too small to shelter all household members at night; these are more common in enclosed compounds or closer to the urban centers.

These settlements may often be completely open, but enclosed ones are also encountered, especially there, where wild animals live. The neighborhood of Issa also makes Afar take additional precautions concerning compound arrangement and fencing

(Fig. 112).

Though people say there used to be hyenas or wild cats in the surroundings, the environmental changes of the former decades, with substantial harshening tendency, impoverished ecosystem - both flora and fauna - so that their existence is locally questioned even by the very people. Nevertheless in some areas precautions are still taken to protect animals in case they do appear. If this is the case, then fencing may be erected for the domestic stock *hooma*, particularly for the calves, but also additional ones for the milking cows and camels if needed. They may be erected either just next to the houses independently of the main compound, or as an extension to it, adjoining its main structure. For this purpose either rubble stones are collected to erect small dome-shaped shelters, or acacia branches to enclose some space next to the house.

Closer to the urban centres, modern materials are being increasingly implemented, especially since they have become much more available due to fast growing towns and building





Fig. 111: Mile *woreda*: large *ganta* with fencing

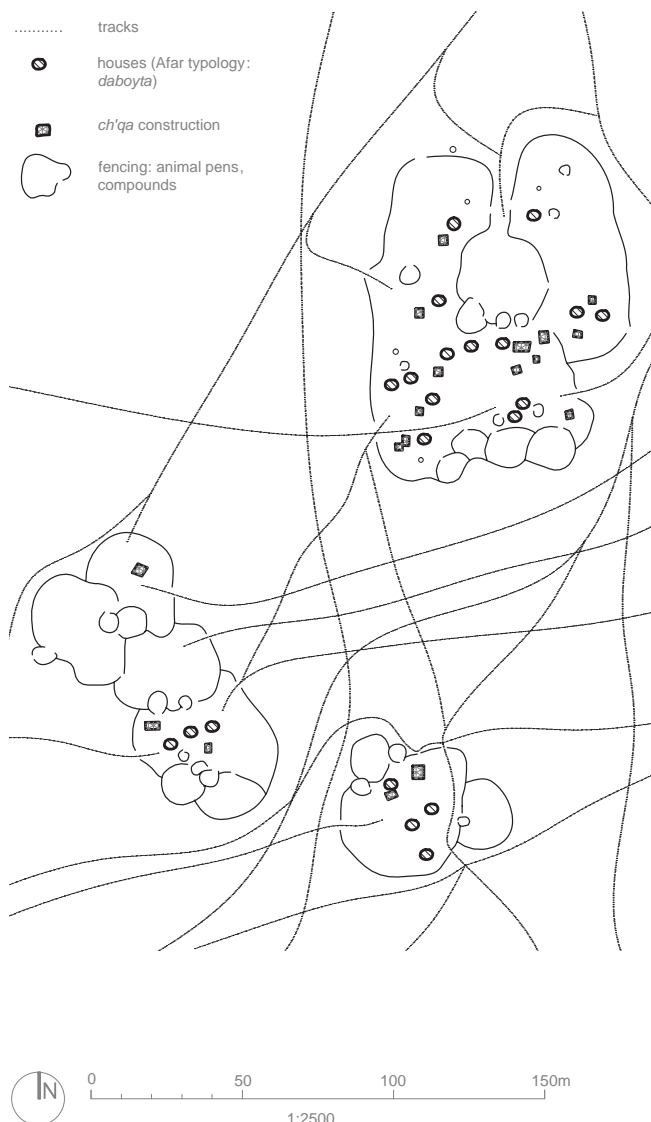


Fig. 112: Asayita *woreda*: settlement near Gemer Lake, close to the border of Djibouti and Somali Region

market (Fig. 110).

Enclosures are also erected in compounds residing in the areas on the border of the Afar and Somali Regions, as well as on the border with Djibouti, particularly around lakes Gemer, Afambo and Abhe, which are fed by the precious waters of Awash River. Here neighboring pastoralist tribes compete over pasture and water resources and armed raids aiming at taking over herds of animals of the opponent are nothing uncommon (APDA annual Reports on drought). Just as it is within the Middle Awash communities, households may group to form bigger *gantas* and these are enclosed with one common fence, sheltering both dwellings and stock from the outside (Fig. 112).

If *magida* is to stay in a compound at night, a big fence for the whole estate is to be built: either at least about 2.5m high, if the intention is to provide real protection against wild animals, or only as high, so that animals do not scatter at night. In the areas closer to intermittent or rivers branches of dead trees found on their banks, or thorny acacia branches may be used for this purpose, but if these are not available, rubble stones found on the planes in the surroundings may be applied as well. Alternatively it is also possible to combine all of these materials in one construction.

It is common to erect fences to shield houses and animals from fierce sandstorms to be expected around *sugum* and *karma* - spring and summer raining periods or from cold winds in the dry cold period, which may even blow away a house if this is not protected appropriately. Such curtain fences are made of stones or branches tightly arranged around a house, or only on one of its sides. For this reason also lightly concave, but well drained plots may be chosen for a settlement, preferably close to some bushes, tress or even on the side of a hill (Fig. 110).



Fig. 113: Kori *woreda*: among the volcanic landscape characteristic of this region, one can find rare pastures in valleys filled with sandy sediments

*Small and scattered: central-eastern Afar Region: Elidar-, Dubti-, Kori woreda; Alta ecology*

Heading for the middle-eastern part of the region, towards the borders of Djibouti and Eritrea, we encounter barren land of basalt formations intersected by depressions filled with salt deposits (Billi, ed. 2015). Elidar, Kori and northern parts of Dubti *woreda* (Fig. 02) are one of the most hostile parts of Afar region due to their harsh climate of very high temperatures and scarce rainfalls, as well as infertile soils of volcanic origin and marine sediments. It is exposed to frequent sand storms, which do not find any obstacle on their way, but for geological formations and only very poor vegetal cover (Fig. 113) and (Fig. 114).

Salt and other mineral deposits encourage investors to take advantage of these resources, but for local people these areas pose a great challenge in their daily struggle to survive. People living here, as well as their animals, are very vulnerable and especially threatened by the risk of starvation. Animals have only very few fodder and water to their disposal and *magida* needs to be constantly on the move to survive. So have to be also the main compounds: highly mobile and manageably small, with related community scattered on the widespread area. Yet there is not much choice when it comes to the search of pastures; the raining season may occasionally revive some spots here and there for a short time, but during the dry period, most pastoralist have no other choice but to concentrate in the Dobi depression, where animal may feed on a salty browse throughout whole year (Piguet 2002:5). Finding drinking water is also very difficult. Water wells have to be dug very deep in some areas, so that communities may have access to it at all. Also some modern ways of collecting surface water after rain are introduced by NGOs, so that the communities in most harsh areas have access to drinking water for them and their stock (Fig. 115).

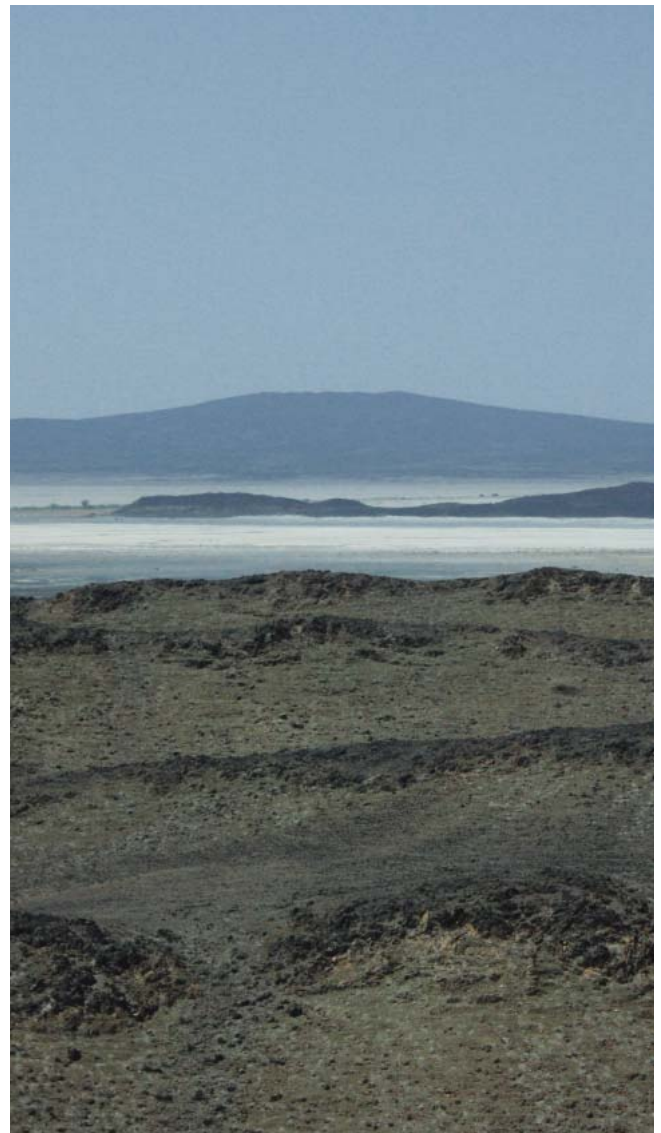


Fig. 114: Elidar *woreda*: Dobi Depression, salt deposits





Fig. 115: Kori woreda: water harvesting cisterns *birkat* built for the community by the local NGO APDA

Settlements may consist of only a couple of houses, but single *aris* in remote areas may be encountered as well. This seems to increase chances for its inhabitants to survive in these surroundings, while it allows utilizing broader land assets in a balanced manner (Fig. 116) and (Fig. 118). Here also more frequently much poorer families are encountered and one decent house may serve as shelter for the whole extended family of up to ten people from different generations.

What distinguishes the houses found here from the Lower Awash settlements is that these here are of much smaller dimensions and kept lower to the ground, so that they cannot be easily blown off by sandstorms. They may even be so small, that it is not possible to stand up straight inside, but only in a bent position, but they still fulfill their purpose of sheltering from strong winds and burning sun (Mr. Youssef, 17.04.2012). Building materials for a house like palm mats are either purchased on the market,

or self-made from the palm leaves which are acquired in Asayita. Also here are the settlements alone seldom enclosed by fences. Small animals are kept at night in dome-shaped corbelled stone shelters made of basalt rocks available in the surroundings (Fig. 116) and (Fig. 117); for the remaining *hooma* provisional pens of acacia branches, if any grow around, or of branches of *dobera glabra* may be constructed (Mr Youssef 17.04.2012).

Here and there heaps of the similar corbelled stones formed into conical shape rise from the surface, marking symbolical graves for victims of tribal conflicts from the past. In old days, when tribal fights resulting in casualties took place, homicide as a way of avenging the close ones was eagerly practiced, though it led only to escalation of clashes. The truncated cones remind of these victims, whose life was avenged by their kinsmen, the sharp ones of the remaining ones (Mr Youssef 19.03.2012) (Fig. 119). Nowadays communities implement other means of solving



Fig. 116: Kori woreda: *daboytas* are kept low to the ground, so that they can better withstand fierce winds; corrals for hooma are constructed of porous stones, which are found here in abundance



Fig. 117: single *buda*, Kori *woreda*



Fig. 118: single *daboyta* in Serdo area, Dubti *woreda*

conflicts and they include extended negotiation process called by the Afar *billi-arr* - peace making, which is mediated by elders of other clans not concerned in an issue. In the course of *billi-arr* a so called *blood compensation* in stock and other material assets is paid by the tribe of the culprit to the tribe of victim, which excludes its right to further claims after compensation has been paid (Getachew 2001).



Fig. 119: Kori *woreda*: symbolical graves remember violent times of clan conflicts





Fig. 120: Ewa *woreda*: many intermittent rivers cross the area, they fill up with water as soon as it rain in the Highlands

### ***Big lineage compounds in Ewa, Gulina, Chifra, central-western Afar Region; Duka'a ecology***

Environment of the central-western *woredas* like in Ewa, Gulina and Chifra proves to be much more favorable for pastoralists for a couple of reasons. These *woredas* are situated on the base of the eastern escarpment of the Ethiopian Highlands, which means the altitude is of about 400m-600m higher than in the central and eastern parts of the land (e.g. Chifra *woreda* 800m-1200m above sea level (Field study navigation data). This ensures not only much lower temperatures and diurnal temperature differences than in the east, but most of all supports a bigger variety of life due to more frequent rains and denser system of intermittent rivers and streams (Fig. 120) and (Fig. 121).

In the *duka'a* ecology, to which these areas belong, vegetation is richer with much more abundant savannas and acacia forests, though the soils on which they grow, are not of much better quality, than in the central Afar. This is one of the reasons why this habitat is so difficult for farmers and sustains mainly pastoralist communities. But only if they are lucky enough to have access to permanent water source and pastures, it may even allow them to thrive. If this is the case, herds of *magida* and *hooma* may grow in number allowing such communities to live independently of the town economies, selling only now and then single animals and some small produce on the local market.

Similarly to other nomadic communities living in areas with sufficient resources (Prussin et al. 1997), secured availability of animal fodder and water source in the western parts of region allows also Afar to decrease the range, but also frequency of moving between the seasons. No wonder that it is specifically in these areas, that grander settlements, or groups of settlements, of whole lineages living next to each other can be encountered. These may comprise even up to fifty single-family units, which share common graveyards, mosques, provisional school buildings, or water source (Villagers Ali Adayto 9-10.02.2011)



Fig. 121: Chifra *woreda*: forest around perennial river



Fig. 122: Ewa woreda: community settlement, *ganta*

(Fig. 91), (Fig. 103), (Fig. 122) and (Fig. 123). Apart from the fact, that living in a bigger community makes life more enjoyable, it also brings some other profits, which concern both material and physical security (Prussin et al. 1997; Browning, Little 2008).

While surroundings provide more fodder for the domestic stock and *magida* herds, it also attracts predators - here more frequent than in the lowlands - due to more animal species grazing on abundant pastures, more surface water to find and relatively moderate temperatures. These pose very serious threat to people and their herds, which means that not only special precautions need to be taken against attacks on the domestic stock, but also human settlements become denser and gain a closed character, to repel the wild animals and to protect people. Depending on the individual needs of each Afar community, various spatial solutions may be implemented to handle this problem.

Starting from the town of Chifra and driving along gravel roads leading to the depth of the area one may encounter numerous settlements of various layouts and compositions of houses, which seem to repeat throughout the area to different extent.

The most basic arrangement reminds of the one already known from the central Afar plateau, which is a group of single *aris* placed next to each other in a relatively small distance of up to 10 meters, so that it is easy to identify, that they definitely belong together - that they are *daala*. What distinguishes them from the lower Awash arrangements is that each one of these *buda* households is separately enclosed with very high fence protecting inhabitants from wild animals (Fig. 91) and (Fig. 124). Further small pens inside each enclosure are erected, either to keep animal calves together, or if additional ones may be found, than they may be designated as a prayer place. If the lactating *hooma* is not supposed to stay in the main compound at night, very often further bigger enclosures are erected just next to the



Fig. 123: Ewa woreda: *daala* settlement at the foot of a hill





Fig. 124: Ali Adayto, Ewa *woreda*: single *buda* encircled with fence, in the background compounds of other relatives

single compounds to shelter the animals. They may be intended for common use of all nuclear families living next to each other, but also be separated if this seems more practical to them (Fig. 127) and (Fig. 132).

Fences may be as high as 3m, depending on the available resources, and are preferably erected of tree trunks for their stability, complemented with thorn branches of acacia for their additional repelling function (Fig. 125) and (Fig. 126).

One other possible configuration, perhaps much more frequent to encounter for practical reasons, is when *daala* forms a common compound of single households enclosed with one combined fence. In such case houses are erected next to each other, then single corrals for small animals are built and afterwards the main enclosure is constructed around the ensemble. Additional internal space divisions may be planned to mark single homesteads, as well as separate entrances in the perimeter fence to each *ari* are

placed, but all these spaces are easily accessible from one to another (Fig. 127), (Fig. 129) and (Fig. 132).

Such configuration ensures higher security for its inhabitants, but also erecting of such compounds requires much less building material and work, than if they were to be fenced separately. It also gives its inhabitants a feeling of closeness and participation in community life. Particularly Afar women, as the main inhabitants of compound during the day, may be attracted to bigger compounds, because they prefer performing everyday duties commonly and bigger compounds seem to them to be much livelier (Mrs Moomina 12.04.2012).

In this arrangement bigger enclosures for *hooma* may be constructed separately, but near the main compound, or as adjoining enclosed space added directly to the perimeter fencing - as a form of compound extension - either one common for the whole *daala*, or separate for each single unit (Fig. 127).

If the domestic stock is to stay at night in the main compound,



Fig. 125: Ali Adayto, Ewa *woreda*: corral for sheep and goats

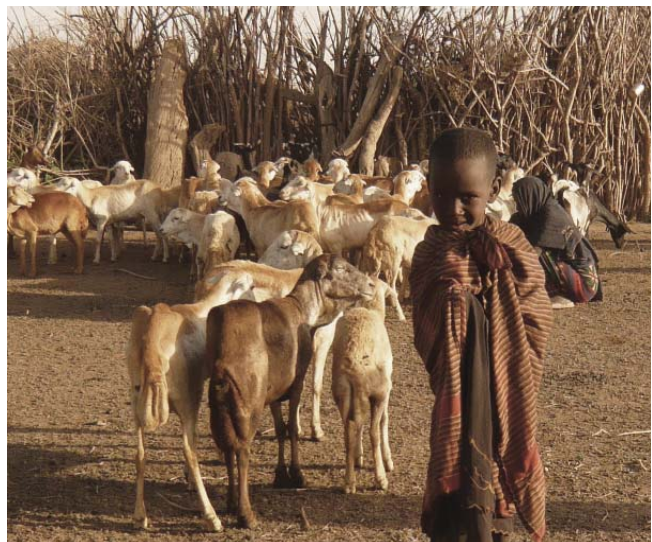


Fig. 126: Ali Adayto, Ewa *woreda*: *hooma* released from pen

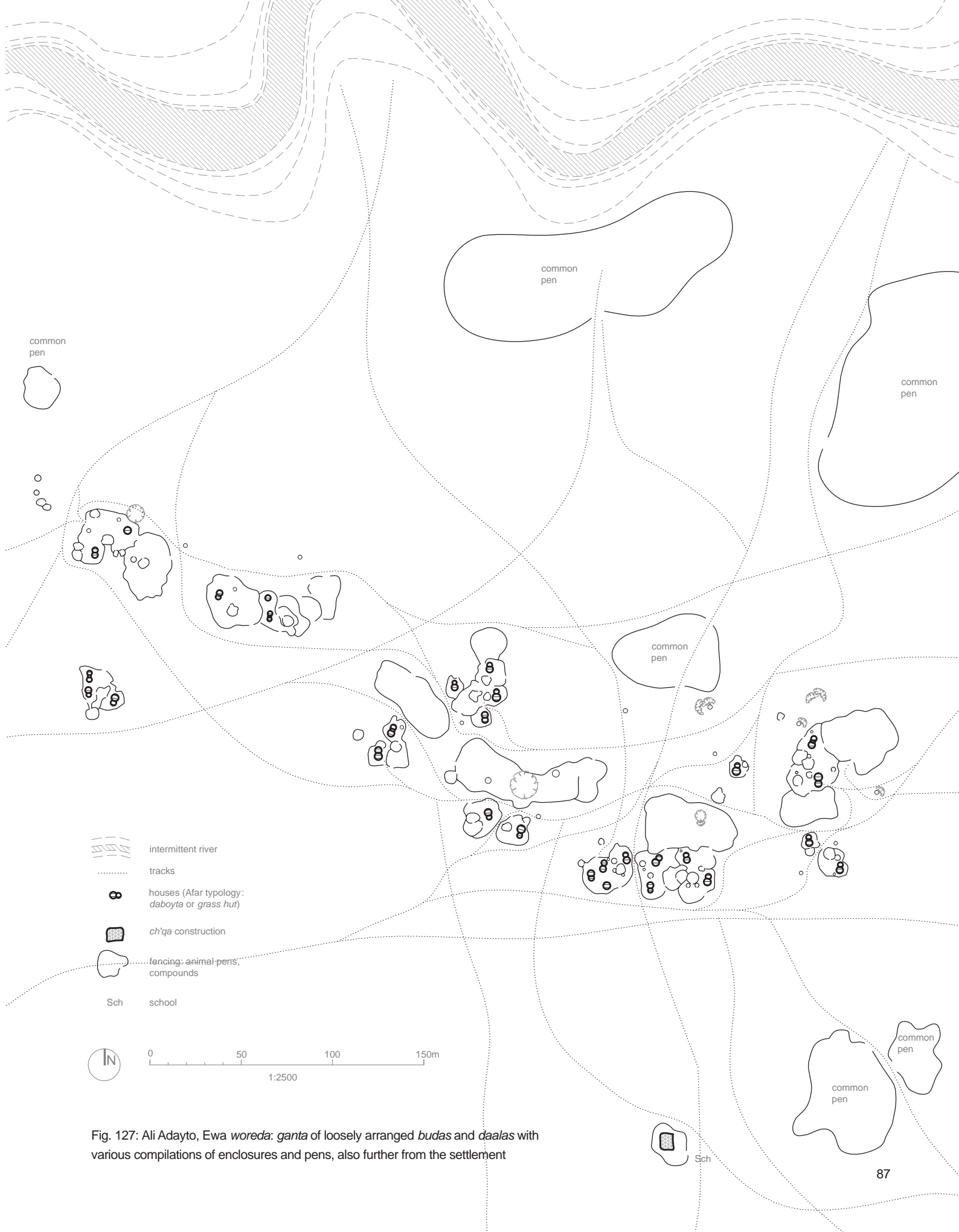


Fig. 127: Ali Adayto, Ewa woreda: *ganta* of loosely arranged *budas* and *daalas* with various compilations of enclosures and pens, also further from the settlement





Fig. 128: Ali Adayto, Ewa *woreda*: milking camels may stay at night in the compound, next to the corrals of their foals

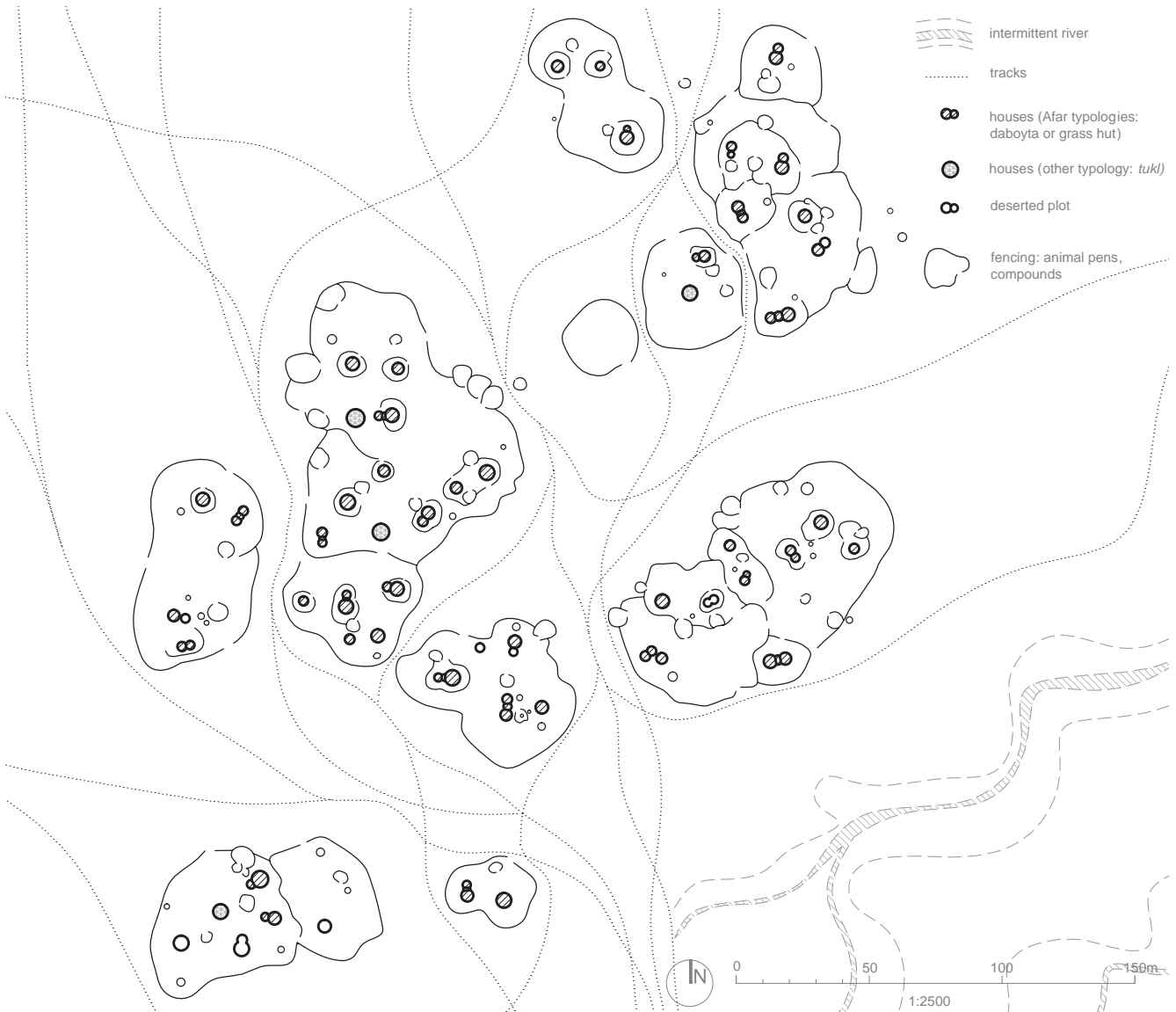


Fig. 129: Ewa *woreda*: *ganta* comprising *daalas* of closely related family members



Fig. 130: *ganta* in Ewa *woreda*

Afar may want to enclose their houses additionally within a compound - with a thorn bush corral of middle height, or in more elaborated version with a wooden palisade - to prevent the cover materials of the houses from being devoured by animals (Fig. 128) and (Fig. 129).

Spatial relation of more compounds of *daala* in a lineage settlement *ganta* may also develop in different directions. Smaller compounds may be just erected next to each other, with separate fences enclosing them (Fig. 91) and (Fig. 127), but they may as well be joined to form an extended combination of compounds, more elaborate in size and configuration (Fig. 122) and (Fig. 132). Formally it is of no importance if the members of *buda* or *daala* stay within one enclosure or in separate enclosures; what counts are the practical implications of each of these arrangements, which are very individual to each small community. Not surprisingly all of these configurations may occur within one settlement and in various compositions, which

seems to be nothing uncommon throughout the western part of the region.

Settlements are larger here and also dimensions of the houses. And it is not only due to the wealth of the family, or greater availability of building materials in the surroundings than elsewhere, but most of all due to the semi-sedentary lifestyle of communities living in these areas, which allows building bigger houses, often without need to dismantle and transport them anymore when season turns.

What may also surprise is the occurrence of a permanent house-typology not known from the central and eastern part of the region, which may be attributed to the above-mentioned factors as well. As far as within the highly mobile communities in the east *daboyta* has to serve as both living- and working space (including receiving guests), communities residing closer to the border of Afar- and Amhara Region can afford erecting additional structures of permanent character, to serve them as additional living space (Fig. 131), (Fig. 133) to (Fig. 135). The main



construction of the so-called *guest-house* is made of roots and branches of acacia and other flexible plant species - just as it is the case by *daboyta* - but the construction of its structural frame differs, it is thatched with grasses and straw and it is not meant for transport. In case family needs to proceed to the other area in search for pastures, these *grass-houses* are left behind within a compound and only portable *daboytas* are packed on a camel and donkeys. But as soon as seasons shift, Afar return to their main compound and *daboyta* is rebuilt next to the *grass-house*. This is apparently one of the main features, which distinguishes these settlements from the central and eastern ones: *daboyta* is very often accompanied by a *grass-hut*. Built as a permanent structure on the same plot, it is perceived as an extension to the main house. And in an even more extended version a small, additional hut put between *daboyta* and *grass-hut* may combine these structures to form an additional entrance and working space (see chapter on houses) (Fig. 131) and (Fig. 135).



Fig. 131: *buda* in Ali Adayto, Ewa woreda: *daboyta* and *grass house* are connected with a middle structure, from which both are accessible

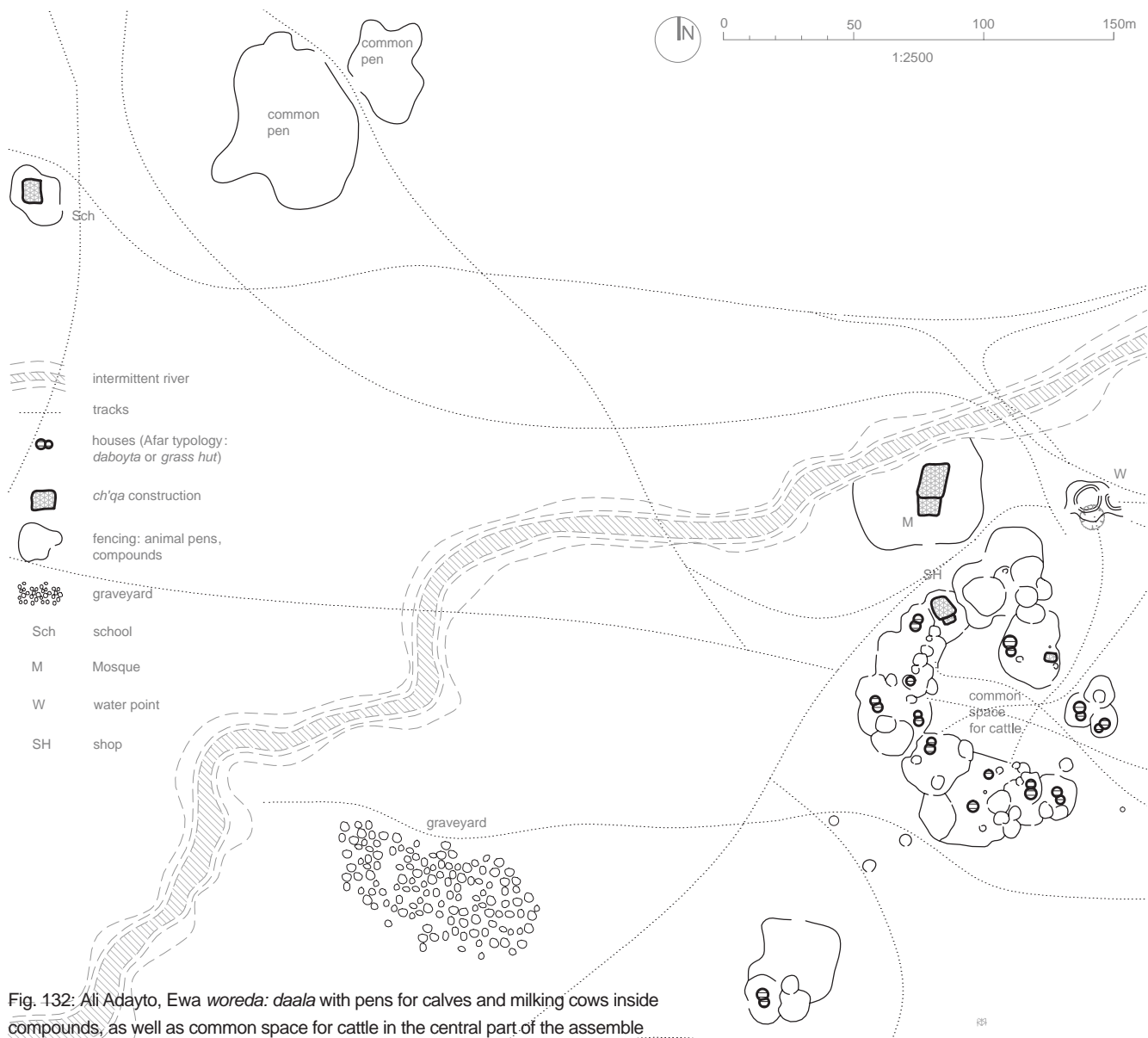


Fig. 132: Ali Adayto, Ewa woreda: *daala* with pens for calves and milking cows inside compounds, as well as common space for cattle in the central part of the assemble



Fig. 133: *ganta* in Ewa *woreda*: *grass house* is slightly bigger in size than *daboyta*, one common fence encircles the whole *daala*



Fig. 134: town based *ganta* in Alele Subula, Ewa *woreda*: *grass house* of size twice as big as *daboyta* next to it, it's height measures up to 4m



Fig. 135: *ganta* in Chifra *woreda*: *grass house* of almost same size like *daboyta*; additionally a middle structure links the two



## *Beneath Erta Ale, Dodom area in Afdera; Alta and Kalo ecology*

The landscape of central and western part of Afdera *woreda* may strike the newcomers for its beauty and variety, but most of all for its harshness. Most of the surface here lies below sea level and the temperatures are one of the highest in the whole region (Helland 2015). Best known due to the still active Erta Ale Volcano in the Dodom area, its morphology develops also in many other forms, which are equally breathtaking and terrifying (Hess 2006): volcano picks of different sizes to give their last deadly breath long time ago, sand dune deserts misleading travellers on their way, huge salt lakes and salt basins which brought wealth to many, and endless planes of black lava spilled over the landscape, radiating unbearable heat from the sky (Fig. 136), (Fig. 137) and (Fig. 139).

There is no fresh water here, but for this borne irregularly by intermittent streams and rivers. The everything-enduring acacia trees, low green shrubs, occasionally date palms and stalky *dobera glabra* are the only ones to speckle free planes of land now and then (Friis 2010). But one may not be really sure if they actually exist, or if it's merely a *fata morgana* deluding senses - the ground seems to burn from the sun being at the zenith and temperature in the early afternoon during our visit in April reaches already 45 degrees Celsius in shadow - and it is merely the beginning of the hot period of year. It is hard to breath, hard to move, hard to even think. It is actually difficult to believe, that a human being may permanently inhabit these areas. Yet he does.

There is not much information to be gained about communities living here, apart from the ones that they may engage in salt mining and trading, for the salt lakes are not so far away from here. It must be at least partly true, because - apart of some home based lactating animals - the only domesticated animals noticed in the surroundings at the foot of the Erta Ale Volcano - were small groups of camels grazing on the green bushes in the

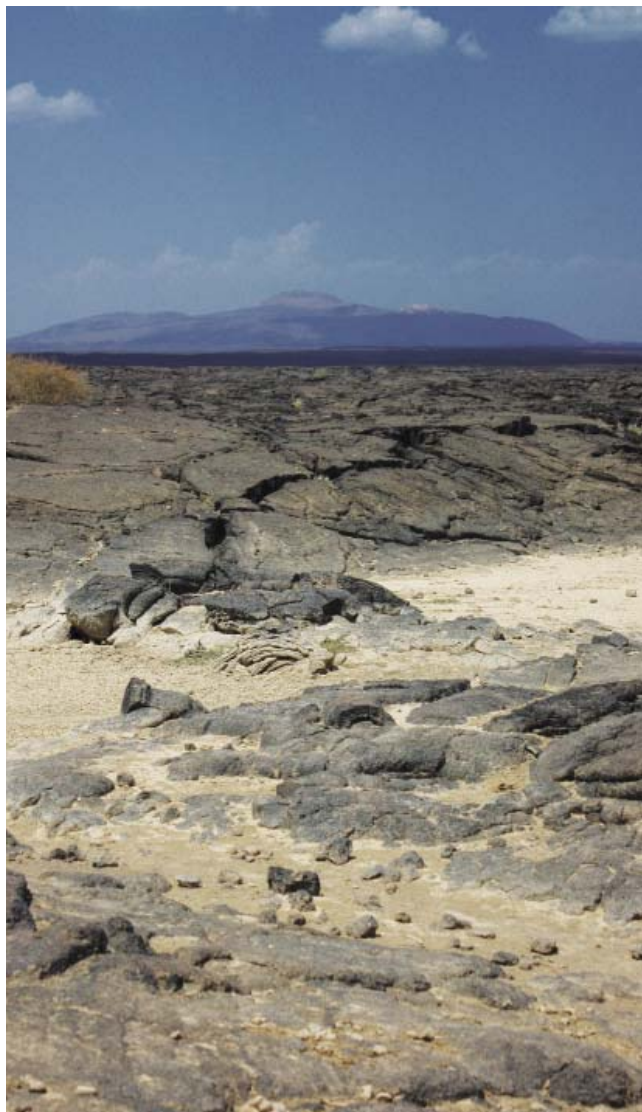


Fig. 136: Dodom area, Afdera *woreda*: landscape of volcanic origin; congealed lava flows around still active Erta Ale Volcano



Fig. 137: Afdera *woreda*: small extinct volcano amongst sand desert on the way from the town of Afdera to the Dodom area





Fig. 138: Dodom area, Afdera woreda: a small Afar girl as if ignoring the unbearable for us temperature reaching almost 46°C in the shadow

far landscape, but no sign of big herds of animals easy to spot everywhere else in the region. If communities living here had dry-herds to support their livelihoods, then they must have been very far away from their main camp. What would particularly draw our attention was beautiful metal jewelry and cloth of very good quality which women wore, which must have cost plenty and as we assumed, could not have been purchased in exchange for an animal, not even for a female one.

Whether did their obvious wealth come from the earnings from salt mining, or from traditional pastoralist source, it affected also the form and appearance of their houses and made them grander than in the central and eastern part of the region.

The construction principles of the traditional middle-sized *daboyta* remained the same, but its form and size evolved. Elongated and widened, their form reminds of a squat beetle abdomen, while their size may reach up to 5m by 8m floor area and 2,5m height. This makes their floor at least twice as big as the ones of the *aris* of the highly mobile pastoralist communities living elsewhere (Fig. 143). Entrances to the houses in the visited sites were placed on the shorter side of a house. The houses were oriented with their shorter sides almost along the northeast and southwest axis, corresponding with the prevailing wind directions. Such alignment supported by the aerodynamic shape of the house allows not only sheltering the entrances from the wind, but also minimizes wind pressure on the house structure, allowing more efficient distribution of forces (Browning 10.02.2011).

Materials for the houses were partly collected in the surroundings - these for the main frame came from the acacia branches and the ones for the house fencing were made of either wood collected by the riverbeds and stems of bushes found around, or of the stalks of *dobera glabra*, which grows here in abundance. Wooden elements of different sizes were dug into the ground, forming an elegant vertical palisade, rather than randomly stacked woods complemented with thorn bushes found elsewhere (Fig.

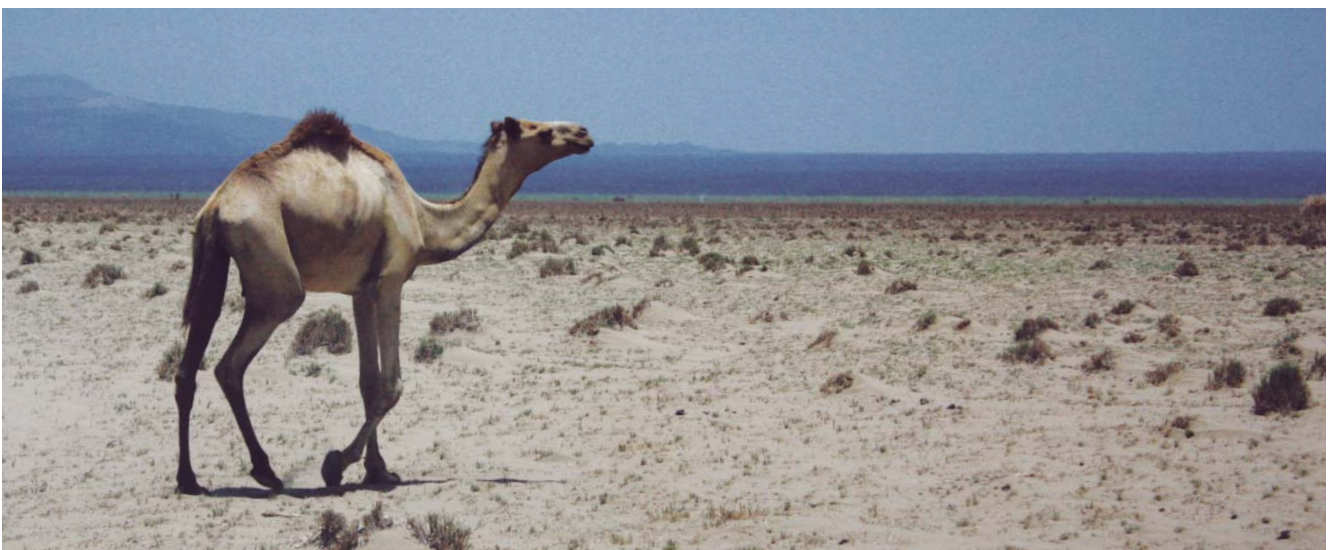


Fig. 139: Dodom area, Afdera woreda: apart from home-based goats, single camels were the only animals we managed to spot in the area



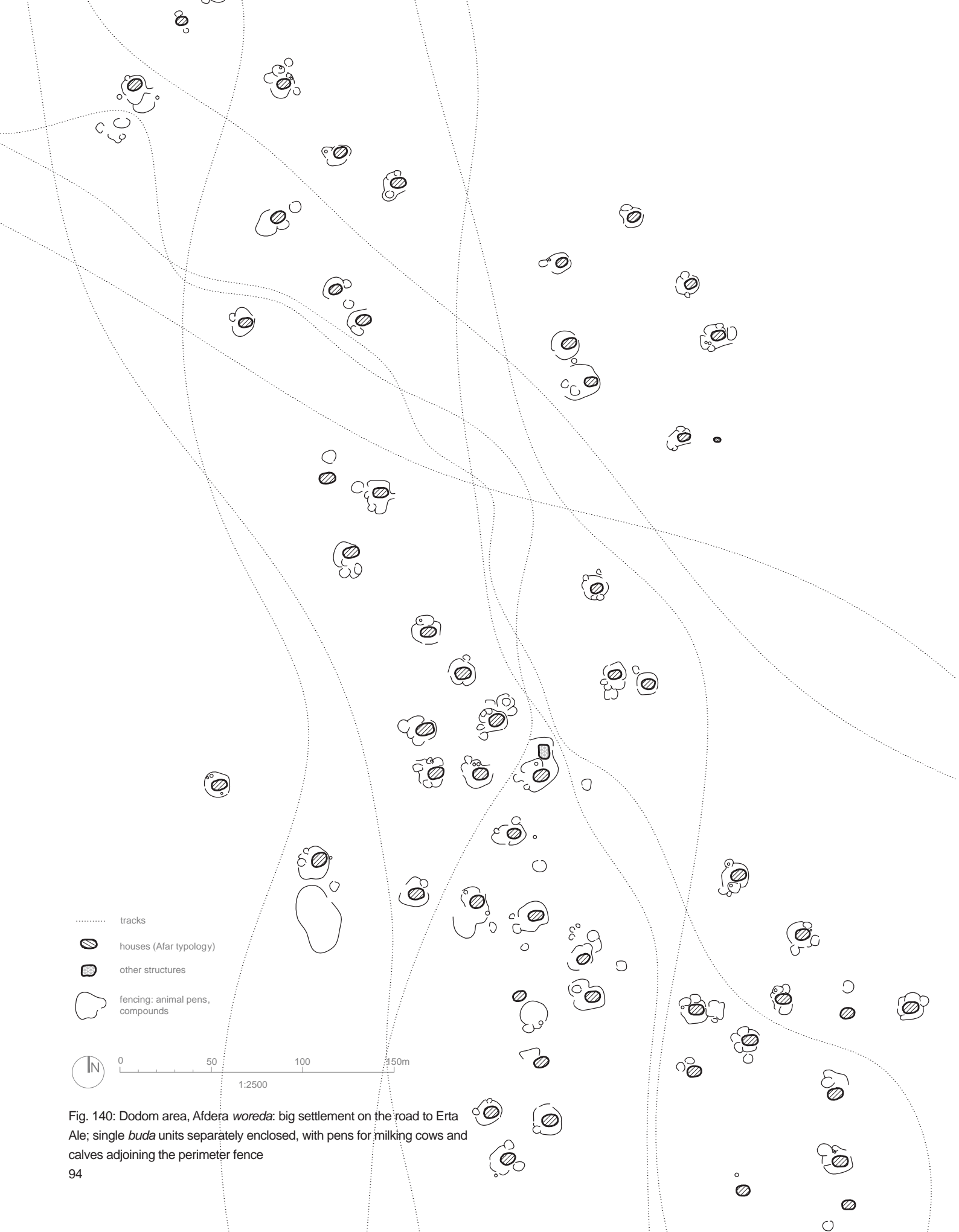


Fig. 140: Dodom area, Afdera woreda: big settlement on the road to Erta Ale; single *buda* units separately enclosed, with pens for milking cows and calves adjoining the perimeter fence



Fig. 141: Dodom area, Afdera woreda: the size of settlements may be difficult to estimate due to the *budas* scattered over bigger area



Fig. 142: Dodom area, Afdera woreda: bigger *ganta* with *daalas* concentrated in one area, source: Sebastian Morales 2011 (access 18.12.2016)



Fig. 143: Dodom area, Afdera woreda: apart from typical round *daboytas*, also elongated ones are found here in great number



143). Some of the fences could also reveal more elaborated construction of stalks or branches plaited basket-like around the houses, marking the premises and shielding from winds (Fig. 142). It seems to be also of benefit if natural shrubs grow around and they may serve as a natural windscreen for houses during windy period (Fig. 141).

Admittedly the houses are grander than anywhere else, but the settlements much more scattered and almost hidden in the landscape between hardened lava flows and green shrubs, due to which their range is much more difficult to estimate if not supported by the view from the satellite. One settlement found here comprised up to 80 of such nuclear compounds and was stretched over about 400m, which means a rather low density in comparison to the lower Awash settlements (Fig. 140) and (Fig. 144). Each nuclear compound comprising only one house for family would be encircled with a pen of a height of about 1,5m to 2m, with additional corrals for domestic stock planned. These would be either adjoining the compound – as an extension to it -, or be arranged within main enclosure, opening to its center. The space in the compounds encircled by the fences was only as big, as to allow accessing the house from all sides, but no room for other functions foreseen.

But a bigger number of *daalas* may group as well to form *gantas* known from other parts of the region comprising more than one *buda* unit within common enclosure, as well as more elaborated animal pens for domestic stock (Fig. 142).

There is no permanent river in the area, but rains in the Highlands bring masses of water down the hills towards the natural depression beneath the volcanoes, where it forms intermittent streams and fills up dried riverbeds (Fris 2010). These carry for a short time enormous amounts of water and people use the occasion to water their animals and to fill their cisterns with fresh water, which can be boiled and afterwards stored for dryer times (Mr Youssef 18.04.2012).

But such intermittent rivers may be also hazardous. As soon as it rains in the highlands, riverbeds can fill up within minutes with huge amounts of water and it may disappear just as fast as it appeared till the next rain comes somewhere in the highlands (Mr Youssef 18.04.2012). But during these short times of abundance, overflowing is a frequent occurrence and special precautions need to be taken to prevent water from undermining settlements, or even taking away some inattentive stock.

Situating a settlement on the dried lava flows seems to be a good choice in such case, because houses may be elevated from the water-bearing surface. The porous structure of the lava fields allows enough firmness to anchor self-supporting frames of the houses and some decent pens for home-based stock. But it may be difficult to anchor a compound fence in such flooring, so if a bigger fence or windscreen is to be erected, the same volcanic stones found around are used to build fences of about 1,5m-2m height (Fig. 145) to (Fig. 147).

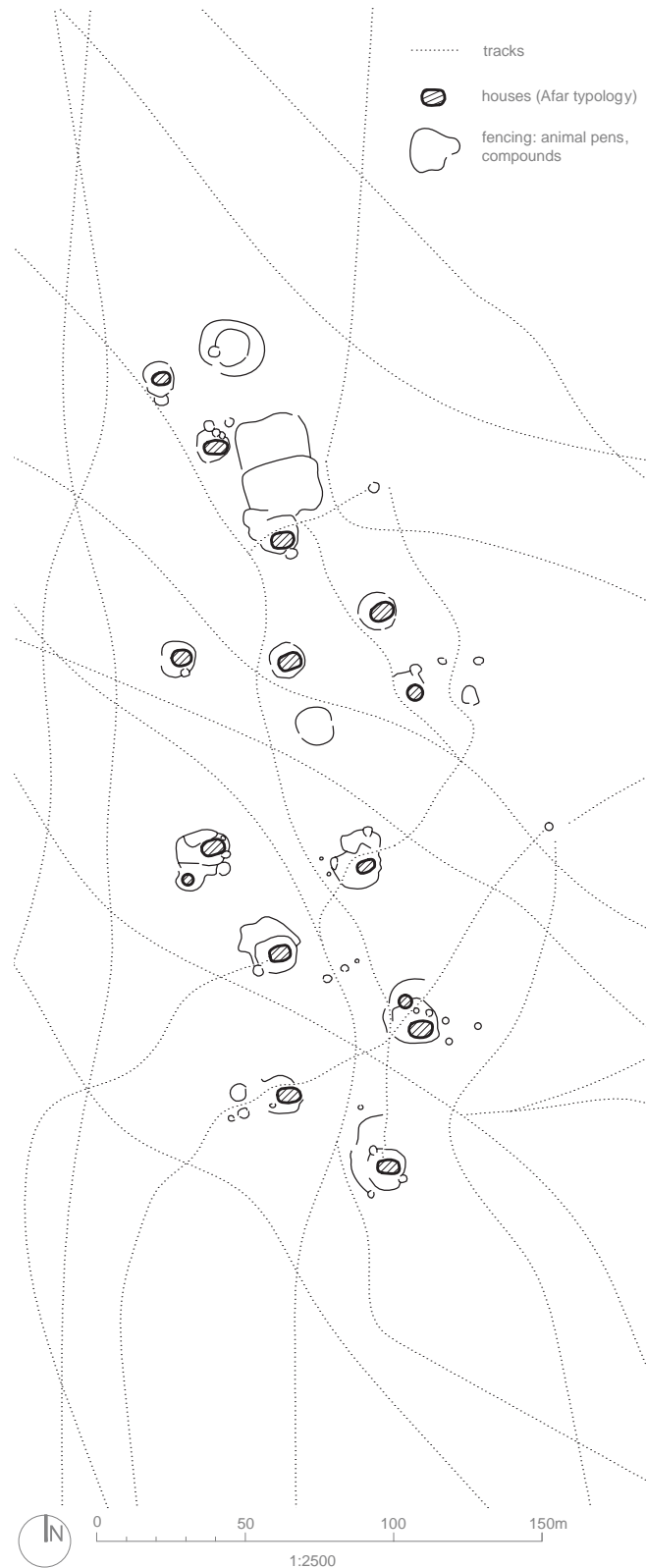


Fig. 144: Dodom area, Afdera woreda: small settlement on the road to Erta Ale; single *buda* units separately enclosed, with pens for milking cows and calves adjoining the perimeter fence



Fig. 145: Dodom area, Afdera woreda: settlement on the congealed lava flows, elevated from the water bearing surface



Fig. 146: Dodom area, Afdera woreda: settlement on the congealed lava flows with animal corrals erected of loose lava stones found around

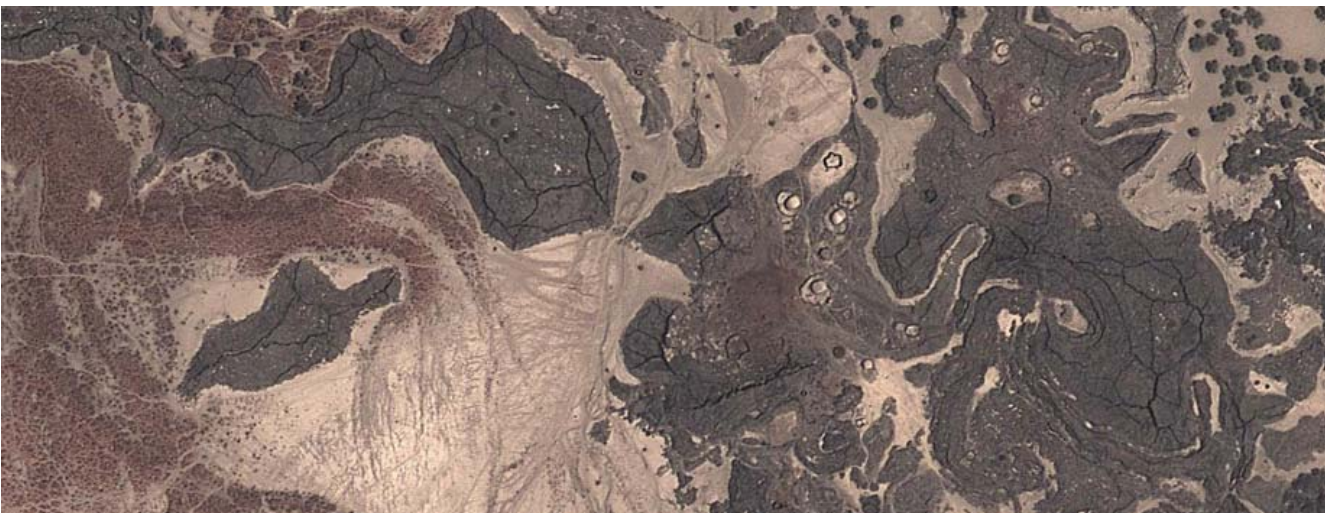


Fig. 147: Dodom area, Afdera woreda: single *budas* on congealed lava flows around Erta Ale Volcano; source: Google Earth



## Adapted settling strategies due to violation of traditional land tenure; environmental changes and conflicts on resources with neighbors



Fig. 148: Ali Adayto, Ewa woreda: traditionally all decisions are made collectively by the clan elders and other clan members who enjoy higher regard among their community, but only after all arguments of all sides have been presented. Afar represent a culture of discussion and are respectful listeners; here Imam and Teacher along with other community members discussing future projects concerning their community

### *Traditional tenure system of Afar, distribution of resources and conflict solving*

Traditional land tenure among the Afar evolved through centuries and rested on distribution of land to sultanates representing two Afar groups of different descent *Adohimarra* and *Asahimarra* (Getachew 2001) and further to the clans and sub-clans. Communities administered the land themselves: disputes over resources were solved by the customary institutions supported by community members through common dialog and on basis of traditional beliefs and set of values (Fig. 148).

The same applied in terms of assigning rights to use land. All families belonging to a clan utilized land assets collectively, though animals were owned individually. In special circumstances a right to take advantage of clan pasture was granted to a neighboring clan, or the resources were used collectively if that was the deal. It was nothing uncommon to have this access denied if the pastures were not enough to sustain livelihood of own clan (Reda 2014).

### *Introducing formal tenure system by state - conflict of interests over fertile land around Awash*

Since about 1950' government of Ethiopia developed gradually interest in the lowland areas inhabited by the Afar and in particular in the flooding planes along Awash River for their potential for implementation of irrigated agriculture, slowly incorporating pastoralist into national policy of land use. The official development programs introduced in the following decades seemed not to acknowledge the traditional right of pastoralists to their land and disposed of it to their disadvantage, not being aware of the consequences it would have on their livelihoods. During this period Wildlife Reserves and a National Park were enclosed in some parts of the Awash Valley, state plants of sugar cane and cotton along with dam project in the so called Tendaho area were settled and many concessions were granted to private companies for starting irrigation projects in the Middle and Lower Awash (Fig. 149) and (Fig. 150). All these were made without sufficient consultation with the local communities and included

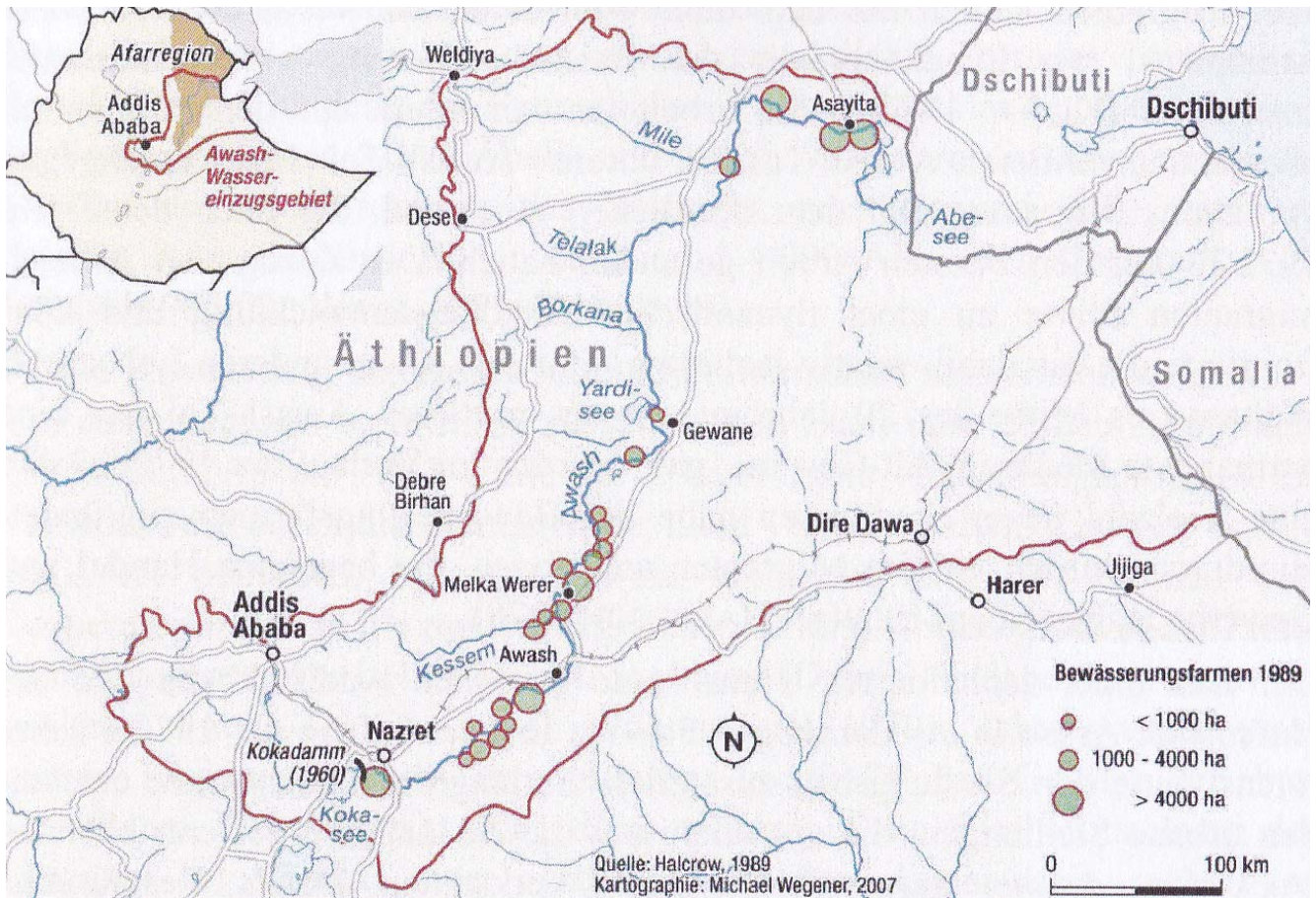


Fig. 149: Awash River Basin: irrigation farms in 1989; after Rettberg 2009:49

gradual displacing Afar away from their dry pasture areas. Since then conflicts on the land administration between Afar and state rose gradually due to the lack of proper communication, no effective agreements on compensations and avoiding participative processes of common decision-making, which could ensure sustainable solutions on both sides (Reda 2014).

### *Development programs Awash Valley*

Parallel to the growing interest in land resources, both representatives of government and local officers developed belief, that pastoralist lifestyle was no longer of any value and that people should turn rather to farming and trade and live in towns instead of following animals and living in tents. According to the official policy pastoralists seemed to miss all benefits of the settled life if they utilized land extensively and exposed themselves to risk of being short of food and water, as well as to conflicts over land and its resources (Getachew 2001). Ethiopian government was very often criticized for its prejudiced

conviction about pastoralist occupation as backward and highly unproductive, but it was not alone in these beliefs. Such notion established in understanding of traditional pastoralism in the policy of many governments not only in the East Africa, but in all other countries with development ambitions. These seem not to acknowledge that perhaps the indigenous institutions and livelihood securing techniques developed over centuries may be the most effective ones within particular environment.

Since 1950' efforts were made to convince Afar to abandon their traditional mobile lifestyle for a more modern one. Broad campaigns promised land ownership and support in providing basic infrastructure. Also some land was reclaimed from the private investors and redistributed among the Afar, but still almost 80% of the already leased land stayed in the commercial hands (Reda 2014). The claims of the state to this fertile land were obvious and it was not going to give up on it that easily.

Most Afar did not understand why they should settle and start irrigated farming if the uncertainty of rain, on which crops depend,





Fig. 150: Dubti *woreda*: since 1950's irrigated farming along Awash River gained gradually importance in the federal plans for the national economy, whereby sugar cane and corn, which replaced former cotton plants, make currently the most of crops in Amibara, Gewane and Dubti *woredas*



Fig. 151: Logya, Dubti *woreda*: corn crops from a private farm

would mean to them impoverishment and dependence of food aid, which they had already witnessed by their neighbors - farmers. The traditional herding strategy on the other hand led them to remoter pastures, where food and water were available for their animals, and this meant to them sustainable adaptation to the natural surroundings.

But others, among them representatives of the younger generation who already tried comforts of settled life, were compelled by the promise of secured livelihoods and access to infrastructure like schools and healthcare and decided to give up the traditional lifestyle and occupy themselves either in the regional administration, irrigated farming, trade, or taking on wage jobs in the local towns (Reda 2014) (Fig. 151).

Many communities, however, were left without such choice for they were already displaced from some part of their land. Development programs of the government continue and though in the recent years efforts were made on both sides to bring both traditional and formal tenure systems together by means of engaging the communities at least to some extent in the common processes of managing land use, huge parts of land are already in commercial hands and not possible to be restored to pastoralists anymore (Reda 2014).

*Notion of “communal land” as source of misunderstanding the idea of sustainable land use; taking over land assets, misuse of resources*

The reason for such development may have lain in misunderstanding of pastoralist notion of communal land use and utilizing local resources in a sustainable manner, which was both misinterpreted by the state and other nations of neighboring regions. These saw in the lowlands a no-man’s-land of free





Fig. 152: Gewane *woreda*: stores of charcoal along the main road made of locally burned trees and sold by the Highlanders; in the background marshlands of Lake Caddabassa (also called Lake Yardi)



Fig. 153: Logya, Dubti *woreda*: building wood stored at the backyard of a house of one of the wood sellers in Logya; not only the Highlanders sell wood, but also Afar; some clans sell concessions to willing buyers to cut trees on their land, seeing in this a chance to earn additional money



Fig. 154: Logya, Dubti *woreda*: a Highlander worker plastering wooden structure of a house



access to anybody and claimed their right to benefit from its assets at their will (Reda 2014).

Apart from development programs of local administration concerning investments in the Awash Valley, also officially supported urbanization processes with expanding of building market, as well as uncontrolled activity of neighbors on the western and southern borders of Afar Region, led to misusing land assets crucial to Afar ecology: water, grazing and natural forests (Reda 2014).

Vast pasture land was taken over either by local farmers for their own use, or leased by state to private enterprises and converted to farmland of irrigated plants; building market and massive charcoal production eradicated many tree and plant

species indigenous to some areas and contributed to ever since escalating deforestation process in the region (Browning 2012) (Fig. 152) to (Fig. 155). Further, regulation of the Awash River for the irrigation purposes limited natural flooding processes, which fed pasture planes during the wet period of year, to which pastoralists would return when the dry period would come (Mr. Mohammed 22.02.2012).

Unfortunately also some Afar communities did not recognize dangers of disposing of their land for commercial purposes and contributed to the process of degradation of land by selling concessions to willing “Highlanders” either to settle irrigation farms, or to cut and sell wood for building purposes or for charcoal production, seeing in this business a source of income for their own people (Getachew 2001).



Fig. 155: Logya, Dubti woreda: the growth of urban centres and need to accommodate fast growing number of people led to expansion of *ch'qa* building technique, which utilizes wood as main building resource and which highly contributed to the acceleration of deforestation



## Ecological vulnerability

Arid climate and low diversification of plant species able to survive on little resources make pastoralist ecology in the Afar lowlands very fragile to changes introduced within it, especially on the scale it was done in the last five decades. Rapid deforestation attributed to the urbanization and charcoal production had immediate influence on the raining patterns and their frequency. Prolonged periods without rainfall extending even to a couple of years in the areas which used to have predictable rainfalls before, left many pastures dry and useless for pastoralist, putting pressure on their livelihoods and making them even more dependent on the fluvial areas of Awash (various informants around Lower Awash 2012).

But these became also not as reliable as it used to be before, since gradually more and more plots are allocated for the

commercial use of private entrepreneurs, while the access to the remaining plots is restricted by the land owning clans, who also partly engage in farming activities as means of diversifying their livelihoods next to the herding activities (Fig. 157).

Restricted access to fluvial land is a common problem of communities in all sections of the Awash River, but the recent regulation of the banks of the Lower Awash section started in 2006, and construction of the canal from the Tendaho Dam towards the sugar cane plant in Dubti and Asayita (Fig. 158) to (Fig. 163), changed local ecology to such an extent, that it brought misery and thirst to people, who never experienced it in this area before. Area between Logya and Dubti, further between Dubti and Asayita, as well as in Kutubla, a clan area between Asayita and Lake Abbe are one of the most visible examples of this development, where former natural flooding planes were converted within a couple of years to dry land, only by means of



Fig. 156: Dubti, Dubti *woreda*: sugar cane growing on the fields sustained by water channeled through canal between Tendaho Dam and Dubti plant



Fig. 157: Asayita, Asayita *woreda*: agro-pastoralists engage in farming in this areas since decades, but their activity partly restricts access to flooding planes for other pastoralists, leading to local conflicts; pastoralists criticize agro-pastoralists, who took advantage of the common clan land for their own use; communities in the middle Awash face similar problems, often having as enemies people of their own clan





Fig. 158: Dubti and Asayita woreda: 2006-2011 water dam is constructed on the Awash River in Tendaho area; source: Google Earth



Fig. 159: Dubti and Asayita woreda: aerial view 2011; source: Google Earth



Fig. 160: Dubti and Asayita woreda: Sugar Cane Project with construction of the Tendaho Dam starting in 2006 brought enormous changes for pastoralists ecology in the area: the fertile *kallo* areas along the Awash providing pastures in the dry period were transformed into plants; through channeling of the water in the Tendaho Canal, areas, which used to seasonally flourish before the project started, are left dry; source: Google Earth





Fig. 161: Dubti *woreda*: canal channeling water to the sugar cane plant

diverting the water from Awash to an artificially built canal, which channels it further to the irrigation farms belonging to state (Fig. 156). Not only pastoralists, but also agro-pastoralists found the access to water restricted since then (Various informants around Lower Awash 2012).

With its plant development program and channeling water to huge irrigated areas, state failed to recognize the importance of a natural process of flooding for wellbeing of locally habituating communities and their livestock. Before the banks were regulated, overflowing water in the raining season would revive pastures around for the dry season to come.

After Tendaho project was implemented, desertification process of the former flood planes started and animals are cut off the access to drinking water, for the banks of the river are too steep for them to approach (various informants Lower Awash 2012). There is still possibility in some parts of the canal to reach the water surface, but it does not overflow anymore to revive pastures, so its utility for pastoralists is minor.

Yet utilizing its water is a must to some communities, for they have no other source of it in the surroundings available, but because of its very bad quality and because both people and animals drink from the same sources, they are equally threatened by the risk of contracting water borne diseases, like cholera for example, which outbreaks are very often in these areas (Mr Dewud 24.03.2012).

Shrinkage of the pastures can be also attributed to other programs which were implemented in early 1970' and which concerned introducing non-indigenous plant species *Prosopis juliflora*, called *Woyane* by Afar, to diversify and enrich local flora, but which proved to be a lethal weed for pastoralists, as it is non edible for animals and destroys natural pastures through its uncontrolled growth (Rettberg 2009, Browning Little 2008) (Fig. 164) and (Fig. 165). Its occurrence caused degradation of soils followed by displacing indigenous plant species and consequently accelerating desertification processes - the

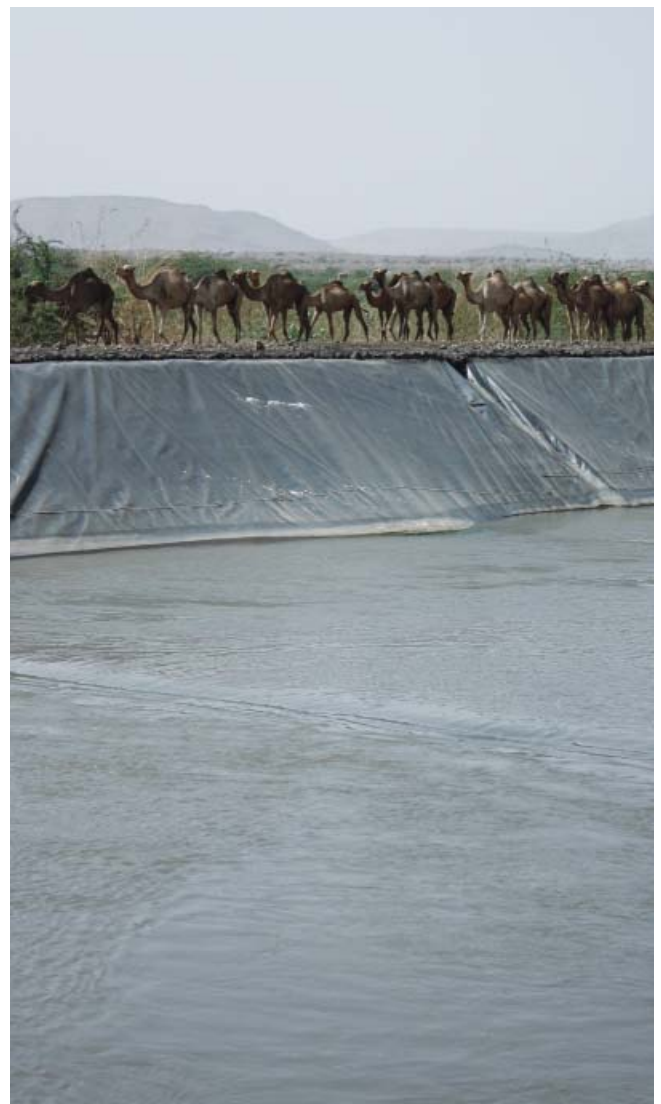


Fig. 162: Dubti *woreda*: building a canal restricted also access of animals to drinking water, its banks are too steep for animals to reach the surface





Fig. 163: Dubti *woreda*: only a couple of passages are left to cross to the other side of the canal; apart from *Woyane*, areas around it are left barren



Fig. 164: degradation of soils around *kallo* caused by restricted flooding of Awash, as well as gradual deforestation and invasion of *Woyane*

opposite effect to the intended one. Initially it was invading only wetlands, but its uncontrollable growth spread over the dry-land vegetation and it is posing threat not only to the riverine ecologies, but also to the these more vulnerable and drier ones. Currently eradication programs are implemented in the region to stop the extension of *Woyane* and restore at least some pastures to herders, a process that may last just as long as it took for the plant to spread (Browning 2012).



Fig. 165: invasive *Woyane* overgrowing former dry season pastures and eradicating indigenous tree species, bushes and most of all grasses



Fig. 167: Logya, Dubti *woreda*: the exchange of goods between local towns and rural areas intensified in the recent decades

*Loosing pastoral ability, sedentarization processes in the Awash Valley, suburban settlements*

No other factor had such decisive influence on deteriorating living conditions of pastoral Afar in the Middle and Lower Awash, than changes in the land tenure initiated in the 1950' by the state followed by displacing them to great extent from their dry period pastures *kalo* - the fluvial areas along the river, which were main source of fodder and water to animals for many families of herders living in this area from time immemorial. Following projects laying emphasis on developing commercial farming, urbanization and building infrastructure triggered the domino effect of natural disasters on local scale with rapid deforestation and invasion of *Prosopis juliflora*, which led to gradual pasture degradation and deregulation of raining patterns (Rettberg 2009, Browning 2012). The balance of pastoralist ecology was upset, which irreversibly

undermined traditional strategies of managing animal herding, and so did it influence the settlements and movement patterns. Many Afar families lost their pastoral ability, had to destock and become gradually dependent on governmental aid system and town economy (Mr Mohammed, Mr Ali 2012)

The scale of changes made in the landscape may be best traced in the aerial views over all sections of the Awash River, which reveal huge areas designated for the irrigated farms cutting off access to the fluvial planes and waters of the River for other land users at their edge and these further inland. One of the projects, the Sugar Cane Plant in the Lower Awash (Fig. 156) and (Fig. 158) was supposed to compensate the losses of land by providing Afar with wage labor and accommodation for their families by the plant. For this purpose settlements of three-storey condominiums for future workers were erected in Asayita and around, with very poor sewerage and concrete construction not



Fig. 166: Semera, Dubti *woreda*: traditional settlement among condominiums; in the capital of the region such mobile settlements are perceived informal, which reveals the ongoing conflict around land tenure and traditionally granted rights versus claims presented by the city administration to the clan land in this area





Fig. 168: Mile *woreda*: one of numerous settlements encountered along the main trading route Addis Ababa - Djibouti

appropriate for the local climate. But only very few of Afar had the necessary skills, and most of all were willing, to engage in such occupation, so the positions were granted to the *Highlanders* (Browning 30.11.2012).

Afar take pride in their mobile lifestyle as herders and it is always their priority in times of strain to restock and to return to fully independent mode. But depending on the local circumstances, both ecological and political pressures, it is not always an easy or possible thing to do and many turn to urban centers to look for alternative ways to sustain livelihoods (Mr Tibo 12.04.2012).

Many small settlements can be encountered along the main paved road from Addis Ababa to Asayita: close to Gewane, Mile, Logya, Dubti, but also along the road to Mekele in the western part of the region (Fig. 168) and (Fig. 169). Most of them are engaged in more or less intense exchange with the local towns, which supports their livelihoods additionally to the pastoral

occupation. This model of economical dependence on the towns became in recent decades a must to some Afar families, and even the remotest areas gained access to the goods offered by merchants visiting their towns.

But there is also a fast growing group of Afar settling in the towns with the hope to find an occupation to sustain their families. These decide to abandon pastoralist way of life after they lose their animals in drought and are not able to restock fast enough to sustain their families, or due to the lack of access to resources and restrained range of movement caused by ecological pressures and land grabbing for commercial purpose (Mr Husain 23.02.2012).

Others still manage their livelihoods by engaging in pastoral activities, but combine it with other sources of income: they keep their animals in the rural based lineage settlement of their parents and siblings and engage at the same time in wage labor in the towns to provide for family's basic needs. This seems to



Fig. 169: Semera, Dubti *woreda*: many Afar settle in close proximity to towns and trading routes in hope to diversify their livelihoods by means of engaging in wage labour



Fig. 170: Logya, Dubti *woreda*: town based *daala* comprising *daboytas* of close relatives and an additional *ch'qa* house and a *ch'qa* storage building; family engages in trade; apart from *hooma* to provide for their everyday needs, the remaining animals stay in the rural areas with relatives



Fig. 171: Logya, Dubti *woreda*: town based *daala*, the family acquired rights to settle on this plot from the local clan leader about two decades earlier

be one of the most favored adaptations to new circumstances, to which greater number of interviewed Afar admitted to. There were families among this group to have settled in permanent houses in the towns (Mr Ishaq 27.02.2012, Mrs Fatuma and Mr Mohammed 9.03.2012), alternatively with experience in farming (Mr Mohammed 28.02.2012, Mr Dewud, 24.03.2012), such which still lived in traditional *daboytas* and moved with the seasons shifting (Mr Sale 21.02.2012, Mrs Zahara 12.04.2012, Mr Mohammed 22.02.2012), and also these who lived in traditional Afar houses, but would not move with their animals anymore, leaving the supervision over them to their rural family (Mrs Moomina 12.04.2012). Such suburban settlements - mobile or permanent - may be increasingly encountered close to local towns in all areas in the region (Fig. 170) to (Fig. 175).

Nowadays almost every community has a rural based compound and some family members living in the local urban centers

(Getachew 2001). Such diversification of sources of income assures viability of these families, who would otherwise not be able to manage their livelihoods only with animal husbandry. Among occupations, which Afar engage in are positions in public sector e.g. as teacher or administration officer if they received education, or else as water point keeper, in trade, renting rooms, and also farming (various Afar Informants Logya 2012).

The suburban settlements seen in Logya, Dubti and Mile consisted of relatively small number of houses belonging to one *daala* - extended family - in which the closest family members resided. Almost all of these families live on their original clan land, now partly within the town borders and partly taken over by the Sugar Cane Plant, and keep their animals on the pastures close to the lineage settlement based in rural area some distance away from the town (Mr Sale 21.02.2012, Mr Mohammed 22.02.2012, Mr Dewud, 24.03.2012, Mrs Moomina 12.04.2012).





Fig. 172: Logya, Dubti woreda: town based *daala* comprising *daboytas* of close relatives; the land belongs to the clan since time immemorial, since only recently within the town's boundaries; animals graze during the day in the surroundings and return to the compound at dusk



Fig. 173: Logya, Dubti woreda: town based *daala* at the city outskirts



Fig. 174: Logya, Dubti *woreda*: town based *daala* comprising *daboyta* and a *ch'qa* hut; apart from some milking goats, remaining animals are looked after family in the rural areas; family members engage in wage labour in the town

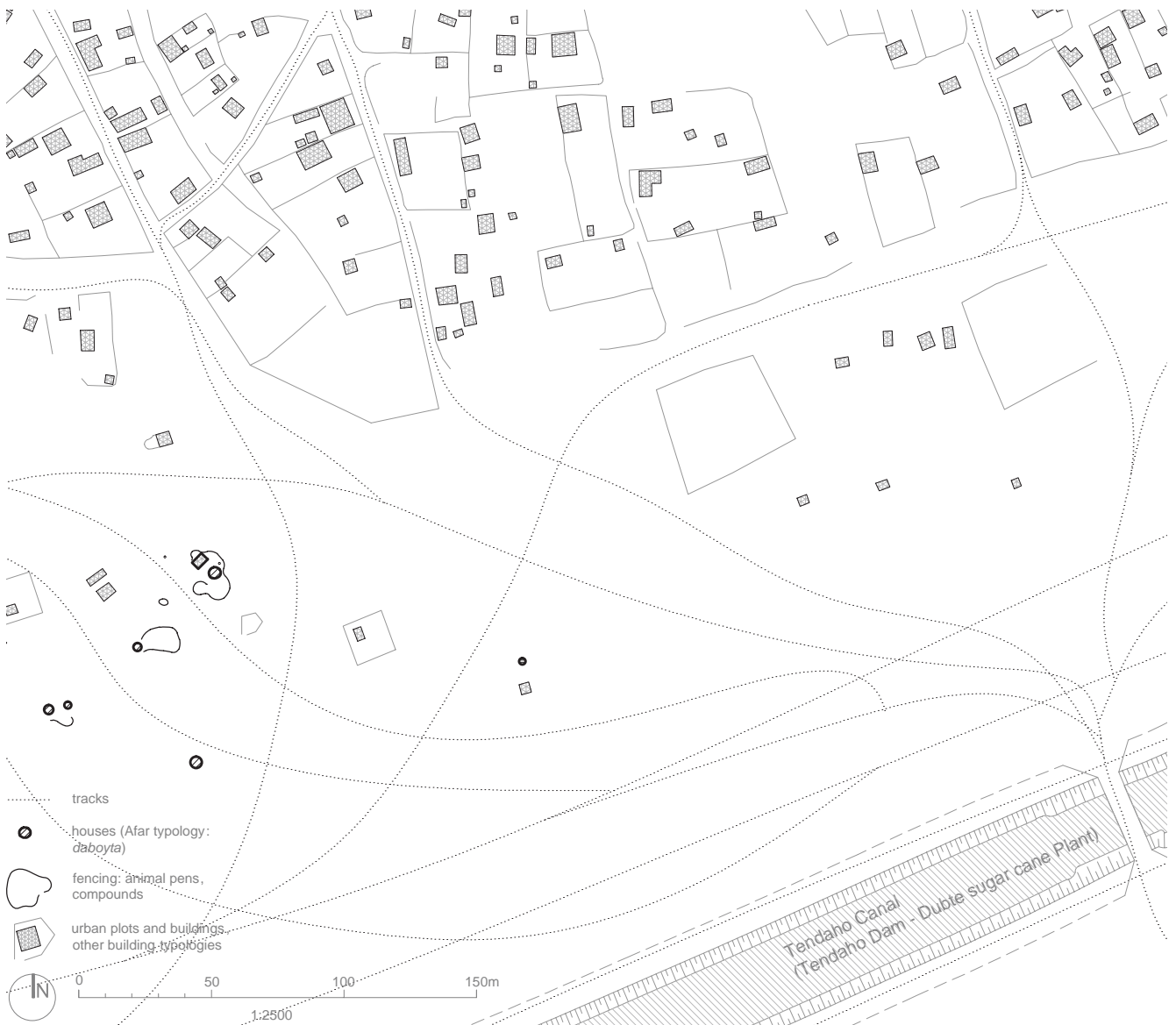


Fig. 175: Logya, Dubti *woreda*: town based *daala*, since only recently within the town's boundaries, as Logya grows very fast





Fig. 176: Logya, Dubti *woreda*: camels are led back to the urban-based compound from remoter pastures, for the land around canal is barren



Fig. 177: Logya, Dubti *woreda*: a girl leading goats to the pastures around the town



Fig. 178: Yalo *woreda*: landscape gradually rising towards Highlands

### *Adaptation of habitation forms in urban centers and in the rural areas on the border with the Highlands*

Similar development of rural settlements becoming dependent on town economies may be observed in the western part of the region, like those close to the urban centers in Yalo *woreda* (Fig. 02). Here the sedentarization process went much further than in the lowlands, to the extent, that traditional Afar building typologies may partly be exchanged for the ones applied by other ethnic groups living in the area. Apart from the house rectangular in shape, constructed in the so called *ch'qa* technique and covered with tin roof, to be encountered in and around the towns throughout the region, there is also other typology, deriving from the Oromo building culture, the so called *tukl* round in shape, which is eagerly applied both in the towns of the border area and in the rural areas surrounding them (Fig. 179).

Still, further inland, there are pastoralists leading traditional mobile lifestyle and occupying traditional Afar mat tents, *daboytas*, here slightly elongated and bigger than the ones encountered in the neighboring Lower Awash areas. The western part of the region, with its animal markets allowing exchange of assets between Lowlands and Highlands, sustains pastoralist communities, whose livelihood still depends on animal husbandry.

But there is also a group of Afar, who - additionally to their pastoralist occupation - make living by means of engaging in

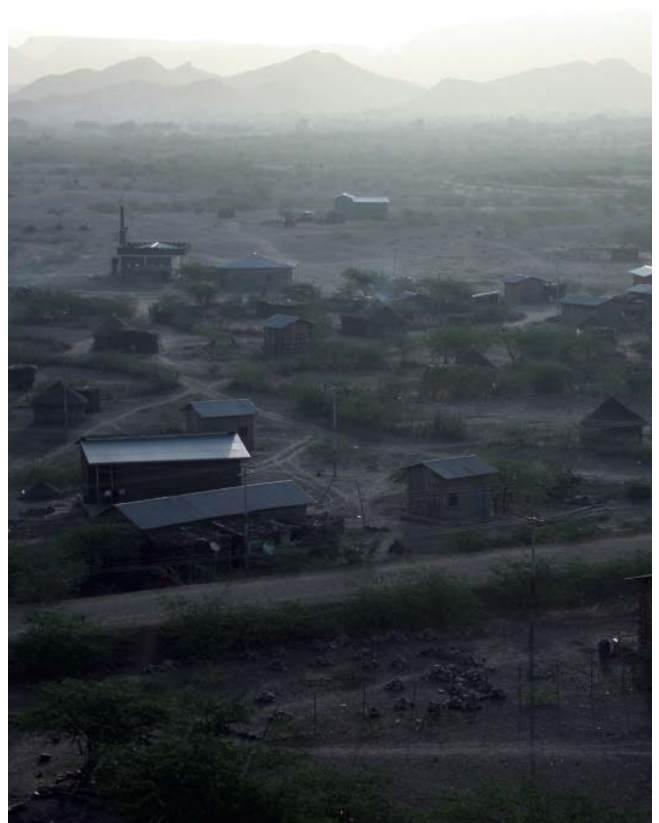


Fig. 179: Gubiya, Yalo *woreda*: rectangular *ch'qa* houses and round *tukl* structures dominate in the towns on the border with Highlands





Fig. 180: Gubiya, Yalo woreda: daala of a semi-sedentary pastoralist family; combination of *grass hut* typology and highlander *tuki*



Fig. 181: Gubiya, Yalo woreda: settlement scattered in the hilly landscape, combination of *grass hut* typology and highlander *tuki*



Fig. 182: Gubiyra, Yalo *woreda*: *grass hut* of a newly married woman

the town economy, or farming, and these adjust not only their mobility, but also habitation forms for the more settled ones and reach more often for the building repertoire of their neighbors.

The Afar compound visited near Gubiyra in Yalo *woreda* is one of such examples. The whole settlement consists of compounds of extended families living scattered in the hilly area nearby town with their religious leader living also in the area (Fig. 181). In the compound of Mrs Fatuma (11.03.2012) two residential houses were found, one of them belonging to the parents - the *tukl* - and the other one, *grass hut*, typology known from the Ewa and Chifra, newly built for Mrs Fatuma and her husband,

who recently married (Fig. 180) and (Fig. 182). It was constructed according to the Afar custom by women related to Mrs Fatuma, just next to her parents' house. A small hut for preparing *injera* and fenced space for animals were the remaining elements of this small compound.

This family, like many others around the town of Gubiyra, still move with their herds when the brows runs out and seasons change, but they do not take their house with them anymore. Due to its rigid construction not suitable for frequent dismantling and rebuilding, it is easier to construct an additional house in the rural area, but smaller, as soon as they get there (Mrs Fatuma, Mrs Noria 11.03.2012, Browning 11.03.2012).





Fig. 183: Amibara *woreda*: pasture land and access to fluvial planes with water are the main assets over which conflicts between Afar and Issa arose

### *Conflicts with neighboring tribes on resources in the Middle Awash; Adaptation of animal management- and settling strategies*

Gradual changes in the land tenure initiated by the regional administration, which lead in fact to grabbing the land from the pastoralists, as well as changes in the local ecology, had an inevitable negative impact on securing their livelihoods and undermined their autonomy to decide on their matters, making them at the same time more vulnerable in face of conflicts with other pastoralist tribes in the neighboring regions (Liberti 2012, Galaty 2011).

Especially in Amibara and Gewane (Fig. 02) *woredas* conflicts over resources between Afar and neighboring Issa-Somali escalate to such an extent, that they result in armed attacks on the villages and herds motivated by livestock-robbery and taking

over land assets, which bring many casualties on both sides. Relations of Afar with other pastoralists like Kereyu in the Awash Fentale *woreda* are of much milder character, but these with Issa have their root in the international politics extending over territory of Ethiopia and Djibouti. Anyone, who traveled the road through the southern part of Afar, must have heard gunshots followed by smoke in the distance and groups of armed young men on trucks, either returning from a won battle, or preparing for one. While men are away with animals, settlements with women and children are left without protection and they may become an easy goal for the Issa attacks motivated by the need to revenge their losses (Browning, Little 2008).

Environmental changes are oppressive and live-threatening, but it would not be that overwhelming for the pastoralists if not the gradual loss of pasture land for the agricultural purposes and loss of possibilities to manage the situation. Pastoralists are deliberately pushed into the depth of the country, where

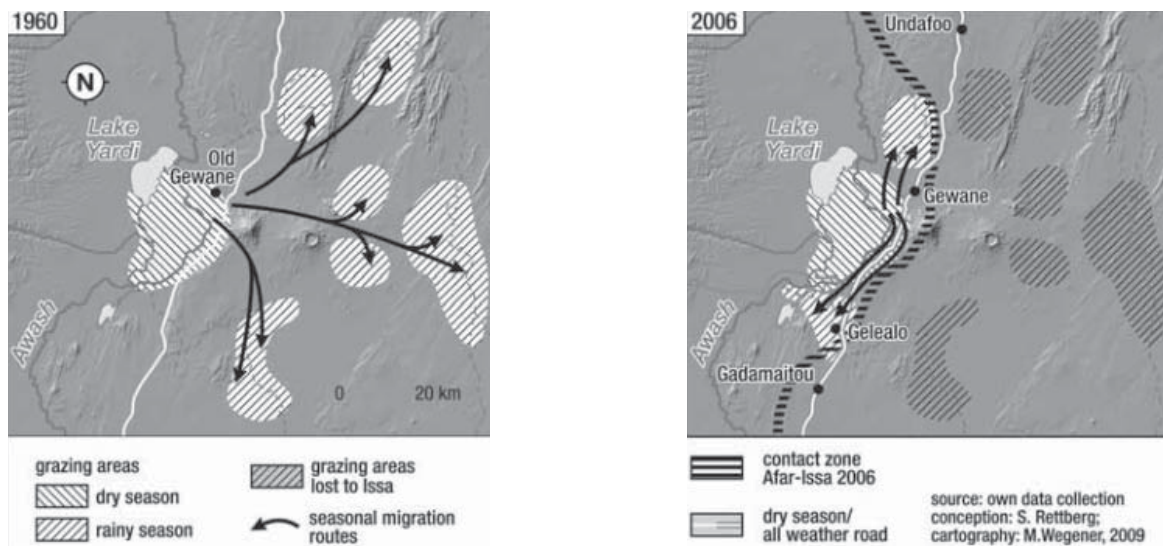


Fig. 184: Amibara and Gewane *woredas*: change of migration patterns of Afar due to Issa-Somali expansion; source: Rettberg 2010:256



Fig. 185: Gewane *woreda*: marshlands of Lake Caddabassa (also known as Lake Yardi)

fresh and safely accessible fodder for animals is difficult to find because of the expansion of Issa gradually taking over land of Afar from the west towards the Awash.

Both Afar and Issa-Somali struggle with the harshness of the climate and scarcity of pastures, but the later chose an expansive strategy and try to displace the Afar from their raining-season pastures for their own use, by pushing them gradually from their native areas towards Awash. Pasture area for Afar in this area is restricted, and so is the range of their seasonal movement. The relatively small scrap of land between Awash River, Mountain Adoua and Aledeghi Plane on the border of the region shrunk considerably since 1970' when agricultural activity in the area started and the conflict with the Issa arose. In total Afar were pushed about 200km from the previously inhabited land towards the Awash since the beginning of the century (Rettberg 2009) (Fig. 184). The remaining strap of land is populated too densely to provide alone for such numerous communities and Afar will be

further forced to either choose to divert to agriculture, or adapt their settling and movement patterns if they want to survive.

A traditional way of coping with such situation would suggest separating community to smaller units of about 5 houses, to scatter and literally to escape the danger. But is it because of the scarcity of land and potentially no safe place available to escape to, or is it because of the belief, that community bigger in size has greater chances to success in case armed clashes happen, Afar in these areas decided to unite their smaller communities to form villages of several dozen of households, concentrated in one area (Browning, Little 2008) (Fig. 186), (Fig. 187) and (Fig. 189). Within *ganta*, a basic family compound *buda* consisting of *ari* and enclosures for animal calves just next to it can be clearly recognized, but it does not occur as single compound separated from the others, like it may be in the traditional compounds in other areas. *Daala* compound as an extended family compound



Fig. 186: Amibara *woreda*: one of a settlements crowding on a small scrap of land between farming estates on the Awash and main regional road







Fig. 188: Amibara woreda: single buda

occurs more often, comprising even up to 10 *aris* in one common enclosure, including pens of different sizes for particular animal kinds (Fig. 82). In these settlements a degree of kinship may not be easily guessed on grounds of compilation of the compounds, as it may be the case in other traditional settlements. Here even a couple of lineages of one clan settle together and connect their compounds with common fences to assure more security for their people and animals.

These *gantas* resemble villages of permanent character with passages between groups of compounds, common space in the center and graveyards on their perimeter. The ground floors reveal a naturally evolved structure of main enclosures of different sizes and orientation, added on to each other either by means of extending a common fence, or adjoining new enclosures to the existing ones. *Daalas* may be extended in all possible directions if needed, though the form of the settlement seems to aim at elongated structure. Two or more such elongated structures next to each other form an additional enclosed space in between for dry herds and single animal enclosures seem to be placed on purpose on the side of this informal center (Fig. 187) and (Fig. 189). *Aris* of the Middle Awash communities are elongated in shape, resembling *daboytas* from the Dodom area, but their cover make reed mats produced around Lake Caddabassa (Fig. 188).

*Hooma*, domestic stock, is divided according to age, lactating stage and kind. Small calves of goats and sheep are kept together in small pens placed just next to the family house. The same applies to the camel foals, which are kept separately from other small stock and camel cows. The pens of a bigger size for small dry stock - goats and sheep - may be placed in the perimeter fence or just next to it, but preferably towards the center of the whole arrangement, so as to be sheltered from the outside. Enclosures for cattle are done in the perimeter fence, or separately like these for the goats and sheep. As for camels, they may stay in the family compounds either in the common space of *daala*, or within the enclosures of nuclear family compounds

(Rettberg 2009, Getachew 2001).

What surely cannot be observed here is a typical arrangement of rural villages known from other pastoral communities in the Horn of Africa, where perches for animals in the center of compound are clearly encircled by housing units and further with main fences of the settlement (Denyer 1978, Vellinga et al 2007). In the Afar settlements arrangement of animal corrals is more complex and aimed mainly at sheltering domestic stock *hooma*. *Magida* is most of time away from the main compound and spend nights in the open.

Compounds may be accessed directly from the field, or from the center of the *ganta* arrangement. Small passages foreseen between groups of compounds may allow separated access to single units, or they may be reached from the common space of *daala* as well. Within *daala* enclosure entrances to the houses tend to be facing the central space between houses and it is where daytime activities are performed and where camels stay at night.

With complex system of fencing aiming at sheltering animals and making access to the compounds more difficult, these settlements have clearly defensive character and it may be even more reinforced through guarding posts placed on the edge of settlements, which are occupied by armed men (Rettberg 2009). Strategically it occurs to be a successful solution, but as with all bigger groupings of people, in terms of sanitation and food security very problematic. Traditionally scattering is not only a strategy implemented by bigger communities to utilize greater areas of pastures, but also to avoid spreading of animal and human diseases. These communities face nowadays problems concerning health and sanitation unknown to them before. But most importantly their chances to sustain the inhabitants of the settlements – women, children, and elderly people - fell drastically, for the whole livestock stays too far from the main compounds to provide them with milk on a daily basis and leave them in acute food insecurity (Browning, Little 2008).





graveyard

(Assab)  
Djibouti

Awash /  
Addis  
Ababa

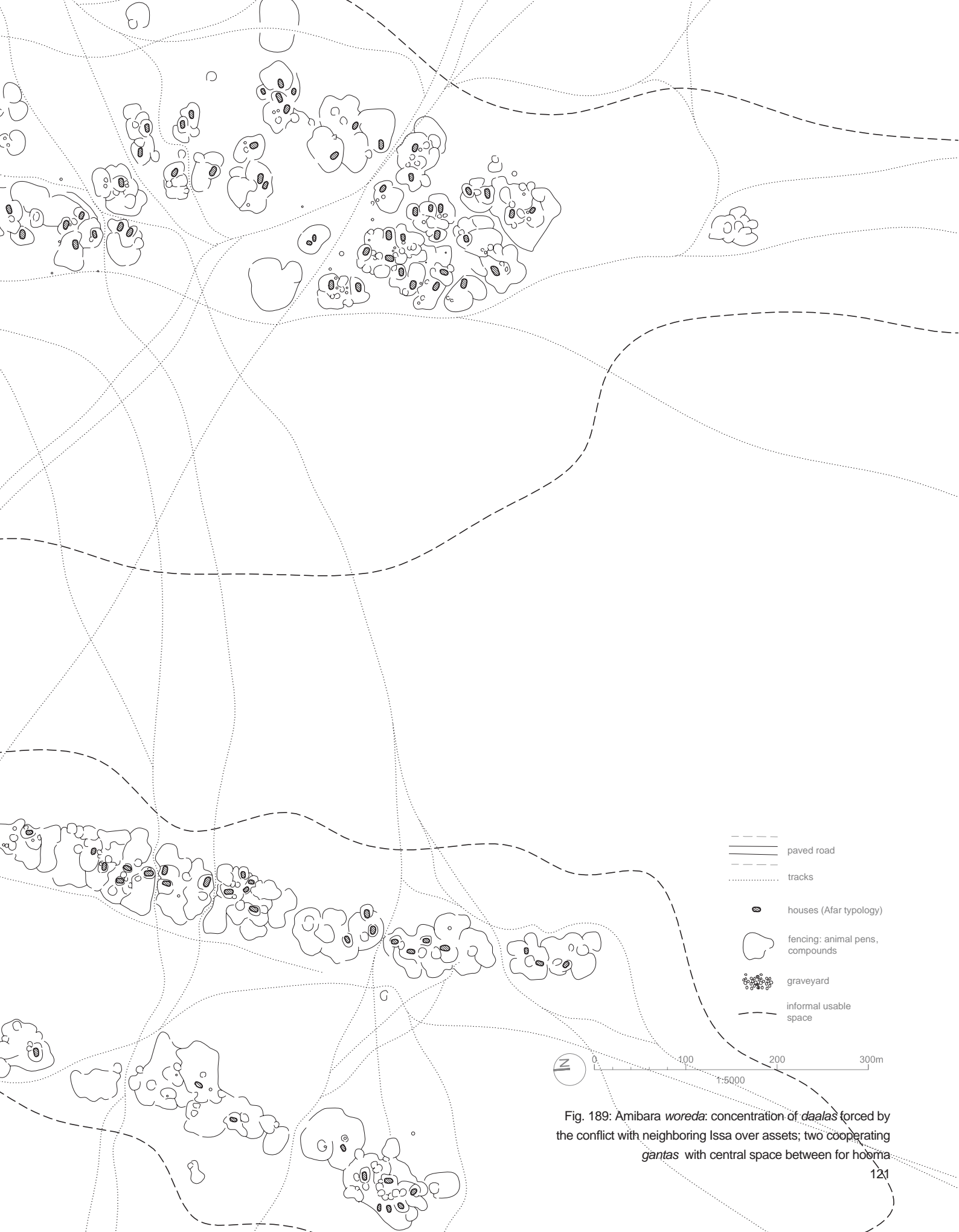


Fig. 189: Amibara woreda: concentration of *daalas* forced by the conflict with neighboring Issa over assets; two cooperating *gantas* with central space between for *hooma*



# DYNAMIC FORM OF SETTLEMENTS

Hardly ever do compounds remain unchanged throughout the lifespan of their inhabitants. The process of adjustment, growth and shrinkage is as natural to pastoralist, just as their constant move in search for resources, being nothing else than their adaptation to the life circumstances and local occurrences. Number of houses within compounds change, and so does the number and size of enclosures for animals: settlements grow, new housing units are added, and they are divided or displaced. Communities combine their compounds and join herding efforts, but they also split as soon as resources diminish. Changes within settlements are dynamic in space, just as they are in time - the same settlement after one season may develop, or be completely displaced if family chooses to move their permanent habitation place to somewhere else (Fig. 191) and (Fig. 195). Very often such natural occurrences like flooding or change of the course of the intermittent river after raining season may force pastoralists to choose alternative site to settle when they return from the dry period pastures.

Customarily a new house within compound appears when a daughter of the house mistress is married off. Other women of her community build a new *ari* - house for her, just next to her mother's house, and from this moment she becomes an owner and mistress of her own house (Mrs Moomina 12.04.2012, Mrs Fatuma 11.03.2012, Mrs Hawa 22.03.2012) (Fig. 190).

Arrangements preceding the wedding may take up to a couple of weeks and they include agreements on transfer of stock and of other goods. Marriage rituals including feast and traditional dances accompanied by singing are performed in the compound of bride's parents, but main celebrations are carried out rather separately: groom with his party and male members of bride's

family feast in a wedding hut erected especially for this purpose, whereas bride with the women of her lineage celebrate in the house of her mother (Getachew 2001).

At least for a while the newly married couple resides in compound of the bride's parents, before they eventually move to the compound of the lineage of the groom (Getachew 2001). How long they stay with the lineage of the bride depends on personal preferences, economical situation of both lineages and mutual arrangements, but with respect to the traditional custom. The arrival of the second child seems to be the latest of the reference points for a couple, but most of them decide to move already after their first child arrives, if not even earlier (Villagers Ali Adayto Ewa 2011, Mrs Moomina 12.04.2012).

Since *polygynous* marriages are allowed among Afar, a new house is also erected when a man decides to take second or third wife. This is only then possible, if the first, or respectively first and second wives agree to this arrangement and only on condition that they are all provided for equally, including residence and stock they have to their disposal (Mr Sale 21.02.2012, Mrs. Hawa 22.03.2012). The animal assets are allocated according to the wealth of the house head and number of children of each of co-wives. According to Getachew (2001:38) "*Each wife of a married man enjoys the right to use the milk and other products of the allocated stock*". Usually such multiply unions imply relative wealth of a community and large households with many children (Oliver 2003). These are seen as a good investment for the future of parents and community, providing domestic labor force needed for animal herding and other activities, as well as provision for the old age (Mr Ahmed Ali 09.02.2011). Also within *polygynous* marriages the newly married stay for specific time with the lineage of the bride and eventually move

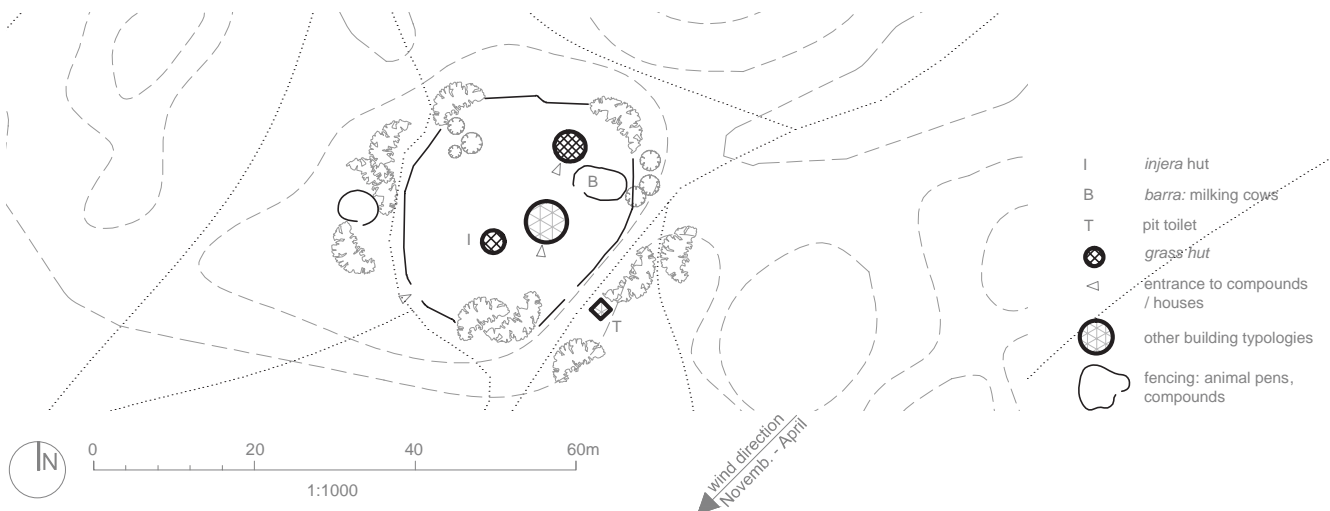


Fig. 190: Gubiya, Yalo woreda: *daala* comprising *grass hut* of newly married couple and bride's parents *tukl* within one enclosure and with additional *injera hut* and pen for milking cows next to the houses



Fig. 191: Chifra woreda: settlement in 2011; source: Google Earth



Fig. 192: Chifra woreda: the same settlement in 2013; source: Google Earth

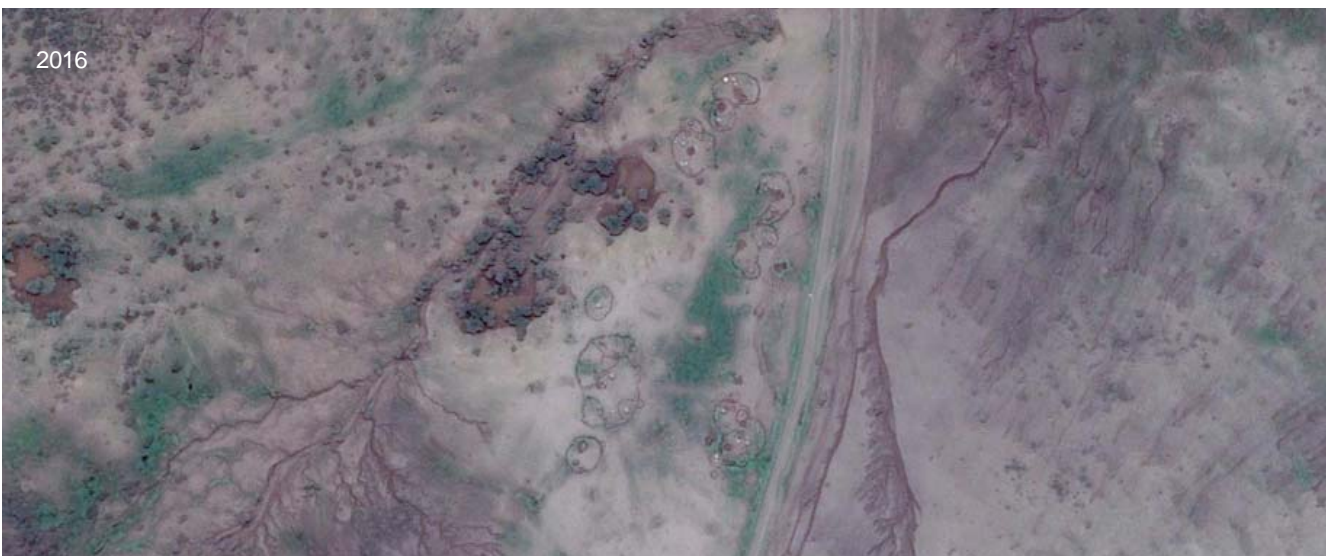


Fig. 193: Chifra woreda: the same settlement in 2016; source: Google Earth





Fig. 194: Ali Adayto, Ewa woreda: abandoned grass hut collapsing

to the compound of the man's lineage, where a house in his compound, next to the houses of other co-wives is erected by the women of his lineage for the new wife. As soon as an additional *buda* unit appears in a compound, it is perceived as *daala* - extended family compound. (Mr Sale 21.02.2012, Mr Ahmed Ali 09.02.2011).

When part of a compound splits and decides to move to other pastures, number of houses within compounds diminishes naturally. These are dismantled and transported on the camel to a new directory, or only the mats are taken on a camel and the wooden frame is left behind (Fig. 194). But not all members of a *ganta* have to be on the move at the same time, though it is usually the case. Apart from seasonal migrations, Afar travel to visit relatives, or a mother of a pregnant woman may come to her

if delivery time is near (Mrs. Moomina 12.04.2012). The number of the houses may also diminish as soon as female inhabitants of a compound die: their house is left abandoned until it naturally decays.

Settlements may be extended spatially to the outside through erecting new family compounds next to main camp, or building directly on to the enclosures of the already existing ones. Also the internal density of structures may be increased by means of introducing additional divisions within already existing enclosures, which may comprise new households *buda*, or serve as corrals for domestic animals. Enclosures, which are placed on the periphery, are easy to extend if such need occurs, but also internal divisions within them are common when the number of animals grows.





Fig. 195: Gemeri Lake, Asayita woreda: settlement in 2011; source: Google Earth



Fig. 196: Gemeri Lake, Asayita woreda: the same settlement in 2013; source: Google Earth





# AFAR AARI MEANS AFAR HOUSE

TYPOLOGIES, CONSTRUCTION VARIATIONS, FUNCTIONS AND SPACE USE

## CULTURAL CONTEXT - ENVIRONMENT - CHOICE OF DWELLING FORM

Afar people belong to a large group of pastoralist communities living in the eco-climatically alike Sahel, the Horn of Africa and the Middle East (Faegre 1979, Denyer 1978). And just like all the others, they function in particular physical and cultural environments, which demands and opportunities they have to acknowledge and respond to. The specific nomadic lifestyle of animal herders and increased mobility resulting from it put restrictions on the choice of dwelling forms and require of them being portable in first place, which practically means they need to be made of lightweight materials and their structural system has to be easily demountable. And if there is no need for a community to change pastures very often, also permanent structures, often of a bigger size than the mobile ones, may appear in the nomadic compounds to enhance the comfort of life of its inhabitants (Prussin et al. 1997). *"Whether portable or not"*, remarks Faegre (1979:62), *"these dwellings have one thing in common: the frame must be freestanding. It must hold up its own weight as well as that of the cover"*. But they also need to withstand all the climate inconveniences including strong sun radiation, horrendous winds, high range of diurnal temperature fluctuations and torrential rains. Everything needs to be consciously designed, so that it can meet all the needs of the users (Oliver 2003, Prussin et al. 1997). Apart from these practical demands, they also need to meet the esthetic requirements of the builders in a wider context of cultural affiliation (Faegre 1979).

Denyer (1978:95) distinguished in her book four main types of portable house constructions implemented by hunters, gatherers and pastoralists: *"The first two were based on a framework of hoops covered with either mats, thatch or skins or a combination of these. In the first type, two sets of arches intersected at right angles, the arches decreasing in height towards the perimeter of the house. The second type consisted of one set of arches all*

*of the same dimension overlapping at a centre point. The third type had a covering of woven hair over a framework of poles laid across forked sticks. The fourth type was a combination of the first and third types"*. Structural differences between these construction types amount not only to the size, shape of frame and use of cover material, but most of all to the way loads are carried over to the ground.

The first two types named by Denyer (1978:95) are, structurally seen, armature or frame-constructions of tensioned bentwood embedded on its one- or both ends in the ground, which makes the main load bearing construction of this kind of shelter. The mats, thatch, or skins, which cover such house, are tied to the frame, but they bear no importance to the stability of the system. It is acceptable to name such structures *armature tents*, however being aware that their frame and structural behavior differs from the one of the true tent (Vellinga, et al. 2007, Oliver 2003) (Fig. 198), (Fig. 205).

The third type by Denyer (1978:95) is an example of the mentioned true tent structure, in which the cover of the tent is tensioned over poles or frames dug in the ground, creating a membrane structure essential to the stability of the whole system (Vellinga, et al. 2007, Oliver 2003). Not only the blanket of woven goat hair is used for this purpose, like it is a case among the so-called *black tent nomads* of the Middle East and some parts of central and eastern Asia, as Denyer (1978) writes. Some Berber tribes of the central and northern part of Sahara, like e.g. the Tuareg, tension goatskins over frames of forked poles in the same manner as if it was cloth (Prussin et al. 1997). The covering of such tent is often supplemented with long palm mat, which encircles the house at its bottom part - sheltering the inhabitants from wind when it is closed and allowing ventilation when it is rolled up (Faegre 1979) (Fig. 201).

The fourth type seems to be the most peculiar one, for it





Fig. 198: Rendile, Kenya: armature dwelling; house is covered with hand-woven grass mats; Prussin 1997:157

combines some elements of armature and tent structure in one construction: *"bentwood arches are used in one dimension, and guy ropes are used to stabilize the structure in the other dimension"*, writes Prussin et al. (1997:56) about an exemplary structure of a Hadendowa (Beja) house in the Northeast of Sudan (Fig. 199) and further explains: *"In order to compensate for this anomaly, a major bed armature, consisting of forked poles and cross members, is built integrally with the tent armature to provide additional reinforcement to the guy lines and increase resistance to the wind"* (Prussin et al. 1997:56). The cover of the tent is made of long woven palm mats. Though they look as if they were tensioned, they are actually only fastened to the guy lines and have no importance for the structural behavior of the frame (Prussin et al. 1997).

Though such classification of construction types is very simplified, it helps to understand structural differences between described

structures; in fact these construction groups are found in many different variations throughout the nomadic world - always adapted to the needs of the local users and reflecting their cultural heritage (Denyer 1978).

It is interesting to see that nomads living in very similar environmental circumstances, having comparable repertoire of resources to their disposal, same animals to sustain their livelihoods and practicing regular seasonal migrations may develop completely different types of dwellings (Prussin, et al 1997:xxi). Also Faegre (1979:64) embraces this thought: pondering on the variety of portable dwelling typologies in the North Africa, Sahel, the Horn and the Middle East he makes an attempt to attribute the application of certain construction types to cultural milieus, in particular to these of Hamitic and Semitic origin.

According to his findings, the Hamites choose rather armature



Fig. 199: Hadendowa (Beja), Sudan: system combining principles of armature and tent: bed is structurally integrated into the frame



Fig. 200: Hadendowa (Beja), Sudan: house is covered with palm mats; left Prussin et al. 1997:55; right Prussin et al. 1997:5

constructions covered with mats of vegetal origin and goat skins instead of the membranous tents covered in cloth woven of goat hair - system preferred among Semites. The Hamites, who admittedly engage in plaiting palm or grass mats and other house-utensils, are not typical weaving communities like Semites are, argues Faegre (1979). They use rather goatskins instead of goat hair and do not weave it, but plait grasses, leaves and reeds instead. Finally he sees in the conservative attitude of Hamites towards their built heritage and the need to maintain the old way of life the reason why they seem to have resisted influences of the Semitic Arab culture, including the *black tent*, and retained the less complicated in produce and less time-consuming armature construction (Faegre 1979).

But there must be also something different at stake, something more abstract than simple need to fit into the local environment and to correspond to the cultural models of own ethnic group, which makes communities apply certain ideas and patterns. It is specific nomadic aesthetics attractive to a particular group of people in the given area, the one they embraced and associate with regardless of the costs (Prussin et al. 1997, Denyer 1978).

Interestingly enough Afar people, with their Cushitic descend, are ethnically very closely related to other Hamitic communities and derive much of their pre-Islamic culture and traditions from the later (Theile 1974). If the assumption Faegre (1979:64) makes about resistance of Hamites to Semitic culture was true also among the East-African communities like Afar, than it had to amount only to the material culture of building. Alone the geographical location of the Horn of Africa enabling intense trade exchange with the Middle East allowed many influences - including conversion to Islam in 8-9<sup>th</sup> century, adopting hierarchical system of society and administrative divisions to sultanates - come precisely from this direction, from the Semitic Arabic neighbors (Theile 1974, Denyer 1978).

The fact remains that, with their built culture of armature frame-and-mat dwellings, as well as armature grass huts, Afar people definitely draw on their Hamitic heritage and take proud in it (Fig. 203). The field study interviews with Afar women living in a traditional way confirmed their strong relation to the *Afar aari* (Afar house) and the process of creation as one, which links them with the community of women, strengthens their position within it and forms their identity as skilled builders and bearers of material tradition (Mrs Fatuma 11.03.2012, Browning 11.03.2012). They would also relate to Afar culture and *Afar aari* as the most suitable for them and their lifestyle when asked if they'd prefer to live in other house typologies, including the more modern ones (Mrs Moomina 12.04.2012).

The ethnic descent of a community and its affiliation to a particular cultural circle can provide however only general guidelines for classifying their habitation forms. The typology of armature house is quite capacious when it comes to the number of possible variations of the frame, its cover and the grade of mobility and it is strictly related to the local circumstances with particular environmental characteristics of the area. It is possible to find similar types of frames and covers among people of different

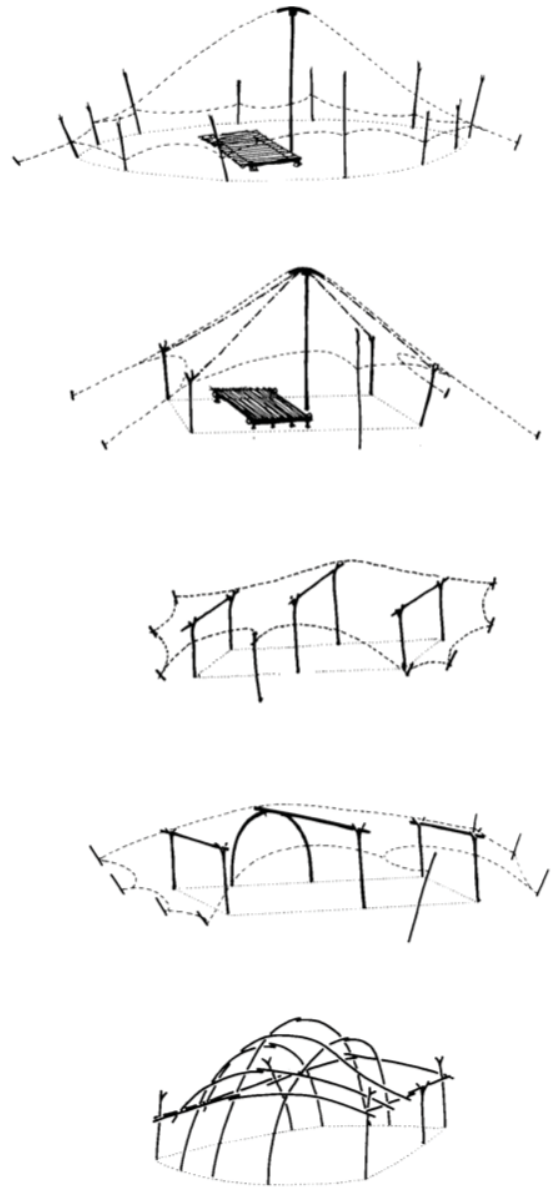


Fig. 201: Touareg central-western Sahara: various typologies applied among one tribe: true tent structures with tensioned goatskins as roofs, or armatures covered with palm mats and skins; Prussin et al. 1997:57



Fig. 202: Touareg central-western Sahara: armature dwelling covered with palm mats; Denyer 1978:104



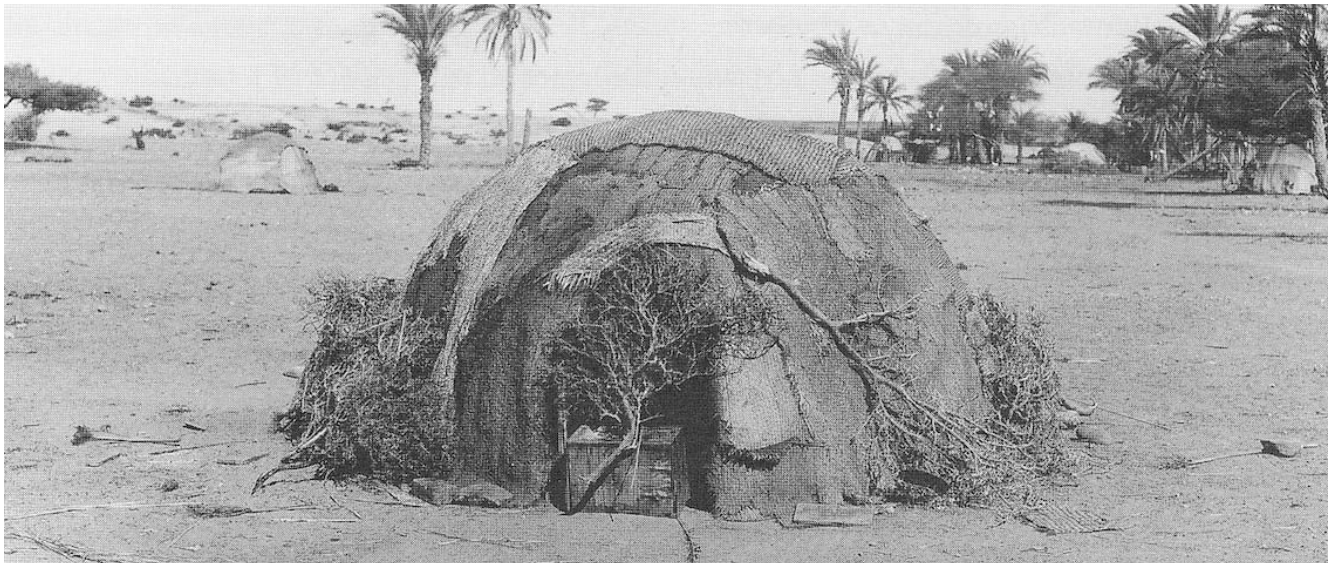


Fig. 203: Afar, Djibouti: armature dwelling covered with palm mats; Prussin et al. 1997:193

tribes, either living in one neighborhood or being distributed over a greater territory reaching beyond thousands of kilometers. But at the same time it is also possible to find the opposite - many different solutions implemented among one single tribe and adapted to various local situations (Vellinga, et al 2007: 43).

In the deserts and savannas of East Sudan, Eritrea, Ethiopia, Somalia and northern Kenya the most frequently encountered basic form of nomadic domicile is an almost true-dome-shaped armature structure of acacia roots or branches covered with mats of different kinds. Though the mentioned area spreads over the whole of the Horn of Africa, these structures are quite undifferentiated and only closer examination of their construction details and size allow recognizing differences between them introduced by local tribes (Prussin et al. 1997, Oliver 1997, Oliver 2003, Denyer 1978). The Afar tribe of the Eritrean, Djiboutian and Ethiopian deserts (Fig. 203), further Somali in Djibouti,

Ethiopia, Somalia and northern Kenya (Fig. 207), (Fig. 208), Kereyu in Ethiopia, Borana people of Ethiopia, Somalia and Kenya (Fig. 204) and finally the Gabra and Rendille tribe of the northern Kenya (Fig. 198), (Fig. 206) - all these people derive from a Cushitic branch of Hemitic descent, which may partly explain the lack of major differences between their habitation forms if we refer to the findings of Faegre (1979). They also have very similar migration regimes and have similar resources to their disposal (Faegre 1979, Prussin et al. 1997, Oliver 1997, Oliver 2003, Denyer 1978, Mr Tibo 12.04.2012). But also their very far western neighbors of South Niger, the Toubou tribe, build houses very similar in shape and construction to the ones of the eastern nomads. Women of this tribe migrate when seasons change far to the North, to Bilma Oasis to harvest and sell date fruits of the palms growing there, while men take care of animals in the South (Frauenkaravane 2010).



Fig. 204: Borana, Ethiopia: elongated armature houses thatched with grasses; Oliver 1997:2019



On the other hand among each of these tribes, regardless of the western- or eastern Hamitic descent, many variations of the size, shape, constructed frame and cover appear: *“Round oval or rectangular plan with hemispherical or lozenge-shaped profile; basic framework of hoops; covering of skins, mats and/ or thatch of grass, leaves or mud over brushwood”* summarizes Denyer (1978:134). One of the biggest diversity of used typologies and cover materials may be encountered among the Berber Tuareg of the central-Western Sahara. Their shelters are constructed of different sizes and shapes and are covered either with goatskins or mats - depending on whether respectively a tensile-, or armature construction is applied (Prussin et al. 1997, Faegre 1979, Kahn 1973) (Fig. 201), (Fig. 202), but the thatched ones may be encountered as well (Oliver 2003). Alone among Afar people at least four different houses may be found: simple dome-shaped frame-and-mat construction, an elongated one covered with palm- or reed mats, or even thatched. Also some Borana people of Ethiopia thatch their non-demountable elongated armature constructions (Oliver 1997) (Fig. 204) in contrast to other members of their tribe in Somalia, who cover their dome shaped houses with woven straw mats (Oliver 2003). The same applies to Somali people, who apply in the areas boarding with the Afar region the same typologies as their Afar neighbors (Mr Tibo 12.04.2012), but elsewhere in Somalia and Kenya they cover their houses with mats made of sisal and acacia fibers (Oliver 1997, Prussin et al. 1997) (Fig. 207), (Fig. 208).

The main difference between the dwellings of the Eastern Hamites and of the Western ones may be seen in the use of the goat skins as dome cover among the Western Hamites, which is rather seldom in the Horn of Africa, where reed-, palm- and sisal mats, as well as grass thatch is extensively employed. Also the size of an average eastern dwelling is smaller than in the west, and not always allows enough room for an adult person to stand upright inside (Faegre 1979, Prussin et al. 1997).

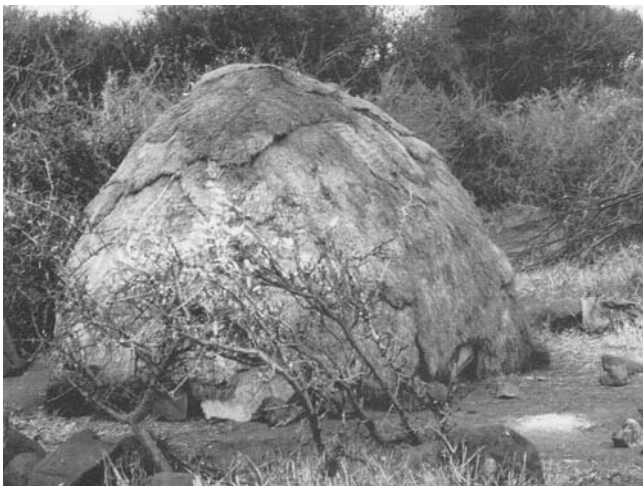


Fig. 207: Somali, northern Kenya: armature covered with hand-plaited grass mats; Prussin et al. 1997:193



Fig. 205: Gabra, Kenya: armature with reinforcements; Prussin et al. 1997:55

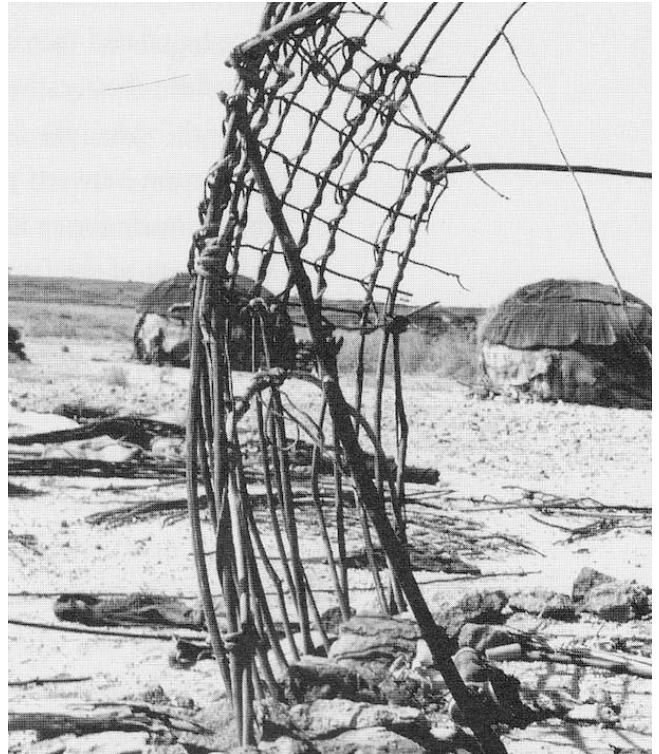


Fig. 206: Gabra, Kenya: part of the armature of a house, at the back huts covered with grass mats; Prussin et al. 1997:54



Fig. 208: Somali, Ethiopia: armature covered with mats made of a mixture of sisal and acacia fibres; Oliver 1997:2028



# HOUSING TYPOLOGIES OF THE AFAR - OVERVIEW



Fig. 209: Amibara *woreda*: elongated house covered with reed mats complemented with waterproof foils

As for one group of people with a very coherent cultural background, Afar adopted surprisingly many different housing typologies. Here again their practical nomadic attitude made them adjust their dwellings to the local circumstances and frequency of movement, including size, type of used frame and cover materials, but also to the changes, which new political and economical circumstances extorted from them in the recent decades.

While the availability of local resources, which defines how frequent each nomadic group migrates in particular environment, has the most effect on the traditional dwelling forms chosen by them (see „Ganta - lineage settlement“ page 76), the criterion of mobility seems to be the most characteristic and legitimate one to identify typologies according to it. It is directly connected to the type of construction used - whether it should be demountable or not and if demountable, than to what extent. What all these houses have in common, regardless of construction type and

materials used, is a round or oval shape of the ground floor.

## *Mobile typologies*

Just like among the other nomadic Cushitic groups described, also among Afar the construction of armature mat house is the most frequently applied one due to its lightness and uncomplicated frame, which can be easily demounted and transported to another area. The basic dome-shaped one is constructed of acacia branches and covered with palm mats and it may be found everywhere, where communities migrate relatively frequently (Getachew 2001, Browning, Little 2008) (see „Traditional settling strategies“ page 77). Anywhere around Lower Awash: Asayita, Dubti, Mile, Kori, Afambo *woredas*, but also in Elidar and eastern Afdera *woreda*, the round armature tents *daboytas* are constructed in different sizes, but always using



Fig. 210: Dodom area, Afdera *woreda*: elongated house covered with palm mats



Fig. 211: Dubti: a regular *daboyta* - round house covered with palm mats; at the bottom complemented with plastic foil

the same materials: acacia bentwood for frame and palm mats for cover (Fig. 211). Some of these houses, mainly the ones with a bigger ground area and height, may have additional central posts supporting the frame installed inside, which prevent it from collapsing under wind and rain pressure, but most of times the constructions is free standing (Mr Sale 21.02.2012).

In some parts of the region, in particular in Berhale *woreda* (Mrs Hawa 22.03.2012) and in the Dodom area in Afdera *woreda* also an elongated type of palm mat house, an “*elongated daboyta*” may be found (Fig. 210). These houses are very similarly constructed to the round ones found elsewhere and they also may have additional structure of ridgepole supported by forked posts to hold up the frame in its centre.

Communities of the Middle Awash also construct elongated houses of acacia roots and branches in their compounds, but their houses are slightly bigger than in the northwestern part of the Region and are covered with reed mats - locally made

and available on the market (Mr Tibo 12.04.2012) (Fig. 209). Apparently also their neighbors in the Middle Awash area, the members of a hostile Issa tribe construct very similar elongated structures, with reed mats covering alike (Mr Tibo 12.04.2012).

### *Stationary huts*

But Afar people developed also stationary structures, the so called *grass huts*, similarly to the Somali and Borana people in the southeast part of the Horn of Africa, which they thatch with grasses harvested in the surroundings. The development of permanent structures among nomadic pastoralists is attributed by various researchers to the decreased frequency of movement throughout the season cycle, which is possible if environmental conditions provide sufficient amount of water and pasture in the area throughout the year, or at least through the major part of it: “*The pastoralists who moved most frequently had houses which*





Fig. 212: Gubiyra, Yalo *woreda*: a free standing *grass hut* of a semi-sedentary family thatched with locally collected grasses

were very easy to dismantle and transport, usually tents. Some of those who only made one major move a year had permanent houses in one or other of their camps” writes Denyer (1978:18). In the stationary camps, which most of times are dry period camps located anywhere close to a permanent water source (Rettberg 2009), communities may build additional extensions to their living space in form of non-demountable immobile huts adjoining the basic mobile unit: “When nomads intend to remain stationary over a longer period of time, they may decide, if they have the means, to build larger and stronger tents in order to enhance their living comfort. These larger tents may reflect a family’s improved economic status, but at the same time they may also reach a size and weight that militates against camel transport” writes Prussin et al. (1997:136).

That is why in the western part of the Afar Region, where resources are much more easily available for the pastoralists and their animals so that these communities may be migrating

less frequently, such typologies are regularly encountered. In the Chifra, Ewa and Gulina *woredas*, on the border with the Amhara Region, *grass huts* occur very frequently, paired with *daboytas* as main family houses (Fig. 215), (Fig. 216). This additional living space in form of a stationary hut serves its inhabitants in times when family is not migrating, while it is left behind when they move on to raining period camps. Some combinations of *grass hut* and *daboyta* include an additional middle structure joining both typologies, which is similarly to *grass hut* thatched, but of much smaller size (Villagers Ali Adayto 09-10.02.2011) (Fig. 213), (Fig. 214) (see „Permanent grass hut“ page 178).

We managed to encounter a *grass hut* also further to the north, in Gubiyra town, in Yalo *woreda*, close to the border with Tigray Region, but the semi-sedentary communities, which we met there, would more often apply the highlander typology known as *tukl* or *sar bet* (Amh. *grass house* - not to be confused with the Afar *grass hut*) than the Afar *grass hut* (Fig. 217), (Fig. 218). The



Fig. 213: Ali Adayto, Ewa *woreda*: household consisting of a permanent *grass hut* and a mobile *daboyta* joined with a permanent middle hut



Fig. 214: Ali Adayto, Ewa *woreda*: thatched middle hut joining *daboyta* with *grass hut*, through which both are accessible





Fig. 215: Ali Adayto, Ewa woreda: typical for this area *grass hut* adjoining main family house *daboyta*, which is accessible through the permanent hut

introduction of *sar bet* (Amh. *grass house*) in Afar compounds can be related to the times of mass escaping of Afar during huge famine from lowlands towards highlands in the 1984/85 and settling here in search of food and means to survive (Browning 11.03.2012). Mrs Fatuma from Gubiyra in Yalo woreda admitted that after the famine in 1980', it was the time when people were coming back from the highlands after drought and started building *sar bet*, similarly to their neighbors, because the mats for traditional *daboytas* were very hardly available (Mrs Fatuma 11.03.2012).

The *grass hut* of the visited compound was a free standing structure, without a *daboyta* next to it, since members of this particular community would not move often enough so that a demountable mat tent would be of any practical use for them (Fig. 212). Instead they constructed a *grass hut* for a newly married couple and guests in a compound next to a *sar bet* - main family house. If they were supposed to move with their animals, they would construct another house in the new area, but it would be a *grass hut*, not a *daboyta* (Mrs Fatuma, 11.03.2012, Browning 11.03.2012).

Just as it is the case with the typology of *daboyta*, also within the typology of *grass hut* there are many possible variations and huts of different frame constructions, size and proportions may be installed throughout the area - again depending on the availability of means, local resources, size of family and building skills of inhabitants.

### *Stationary, portable, semi-portable - difficulties in classifying*

Sometimes it is difficult to distinguish a stationary hut from a portable tent by judging only by its frame. Some armature structures of elongated *daboytas* found in Dodom area in Afdera woreda may have a sophisticated construction of a regular *daboyta* with additional poles supporting a roof (Fig. 238), according to Faegre (1979) a linking component to their



Fig. 216: Alele Subula, Ewa woreda: *grass huts* among more sedentary communities may considerably exceed in height the mobile *daboytas*



predecessor primitive huts. But having the knowledge that this typology is also meant for transport, it becomes clear, that the application of poles should only allow bigger spans of a house for a bigger family and better living comfort.

At the same time some *grass hut* frame constructions seen in Ali Adayto were built just like the frames of *daboytas* standing next to them: almost true domes made of hoops of acacia branches crossing each other at the right angle, or by the more irregular constructions at a random angle, and decreasing in height towards the edges of the houses. Only their cover was adjusted: because they did not need to be transported on the camels, the frames were thatched with grass found around instead of being covered with more expensive prefabricated mats (Villagers Ali Adayto, 09-10.02.2011).

The semi-mobile constructions are also nothing uncommon. It may happen, that out of *daboyta* construction only mats are taken to the new destination and the frame of house and bed

armature is left in place, or just some parts of it are taken with, so that a smaller version of mobile house can be constructed on the way to the raining planes. If mats alone are transported, it may mean the family has already build another frame elsewhere, which they abandoned the season before and are going to use it again as soon as they arrive (Prussin et al. 1997, Faegre 1979, Mrs Moomina 12.04.2012).

It would be interesting to investigate whether the stationary huts of Afar were the predecessors of the mobile ones, like Faegre (1979) suggests, or was it the opposite - is the *grass hut* a permanent version of the mobile typology, which was primarily used by these communities in their migration undertakings.

### Recent developments

The socio-economic developments in the region, which began

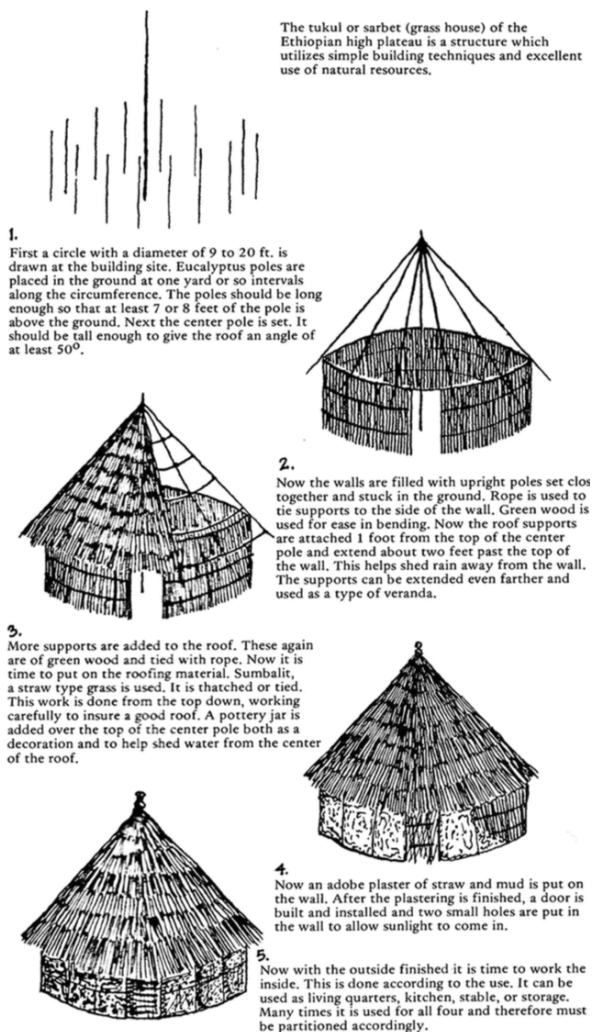


Fig. 217: *Sar bet* ሰገር ስገር or *gojo ጎጅ* of Amharic people. Customarily called also *tukl*. *Sar bet* means literally “grass house” in Amharic (Molvaer 1980:43). The origin of this typology is widely disputed in the literature concerned; one of the theories says, it was adapted by Ethiopians from the Sudanese neighbors (Al-Wer 2009:68); Kahn 1973:9



Fig. 218: *Sar bet*, the name *tukul* or *tukl* comes from Arabic and was primarily used in relation to Sudanese conical grass houses used as kitchens (Al-Wer 2009:68); left: Kahn 1973:9, right: EC 2012



Fig. 219: Serdo, Dubti *woreda*: suburban settlement consisting of mobile *daboyta* and additional permanent house of local stones and tin sheets

a couple of decades ago, resulted in gradual sedentarization of some communities and rise of need for new typologies, which would suit their new lifestyles better than the traditional mobile dwellings (Mr Ishaq 27.02.2012, Mr Mohammed 28.02.2012). Introducing the *sar bet* structure in Afar compounds in the western region (Fig. 180), (Fig. 218) - a typology of a permanent character typical to sedentary Amharic farmers - demonstrates slow assimilation of foreign dwelling models resulting from the need to adjust to new lifestyle circumstances (Mrs Fatuma, 11.03.2012).

But it is not the only example of this change. Not only do the typologies of sedentary neighbors along the border of the Amhara, Tigray and Oromia Regions serve as point of reference to Afar (Mr Tibo 12.04.2012), but also typologies increasingly found in the urban centers - the rectangular in plan and covered with tin roofs so called *ch'qa* houses (Fig. 220), or even the ones made of concrete blocks, though due to the costs not

as popular as the *ch'qa* houses (Mr Osman 15.02.2012). The *ch'qa* house, by Oliver (1997:2015) classified as "East African 'Swahili' type", is built with wooden poles embedded vertically in the ground, braced horizontally with split wood, plastered with mud mixed with straw and covered with corrugated iron sheets. And though it is much cheaper than the concrete construction, the current deforestation problems in the region made prices also for this type of house raise to the extent that only very few people can afford it (Mr Mikel, owner of a small building company, 13.03.2012).

Still, among Afar suburban communities such constructions may be occasionally encountered - either as an extension to the living space of the family next to the *daboyta*, like it is in case of Mrs Moomina's family (12.04.2012), or it gradually replaces traditional typologies of the families, who became already sedentary and lost their pastoralist ability long ago (Mr Sale 21.02.2012, Mr Husain 23.02.2012) (Fig. 219).



Fig. 220: Logya, Dubti *woreda*: a house of an settled Afar built in *ch'qa* technique: palisade of relatively straight woods is embedded in the ground and plastered in three layers with mud mixed with straw; the stone „foundation“ is built around the house, but it does not bear any loads



# PORTABLE ARMATURE MAT DWELLING - *DABOYTA*



Fig. 221: Logya, Dubti *woreda*: armature of abandoned *daboyta*; bed frame and some mats are stored under foil, protected from rain and sun

## Principles of structure

### *Static system, adaptation to environment and mobility demands, variable size and form*

The most commonly encountered form of the armature Afar house *daboyta* resembles a hemispherical dome, alternatively slightly extended in height (Fig. 223) to (Fig. 225). The main load bearing structure consists of regular frame made of flexible bentwood members embedded on their both ends in the ground. Their particular arrangement gives the house its recognizable shape: arches are placed in two directions, so that the longitudinal and the transverse ones intersect at right angle. Beginning from the center of the house at its highest point, the height of the following hoops of bentwood gradually diminishes towards the perimeter of the structure on all its sides (Denyer 1978, Prussin et al. 1997) (Fig. 221), (Fig. 222), (Fig. 233), (Fig. 234). Wooden members are

lashed subsequently at the intersections with pieces of sisal rope, bark or cloth, forming a unified entity - a freestanding framework (Faegre 1979, Browning 10-11.02.2011). Mats of plant origin arranged in multiple layers make a cover of such house. Though they are slightly tensioned while being tied to the frame (Oliver 2003) and their weaving pattern and arrangement on the armature correspond to the “*demands of the structure*”, as Prussin et al. (1997:54) writes (the weaving direction of fibres covers with the active tensile forces), they do not contribute to the overall stability of a house, which depends entirely on the type and quality of armature.

Such kind of system is definitely designed for a mobile lifestyle of nomads. The light armature of tensioned arches is easy to dismantle and to put up again in a new place; the lightweight

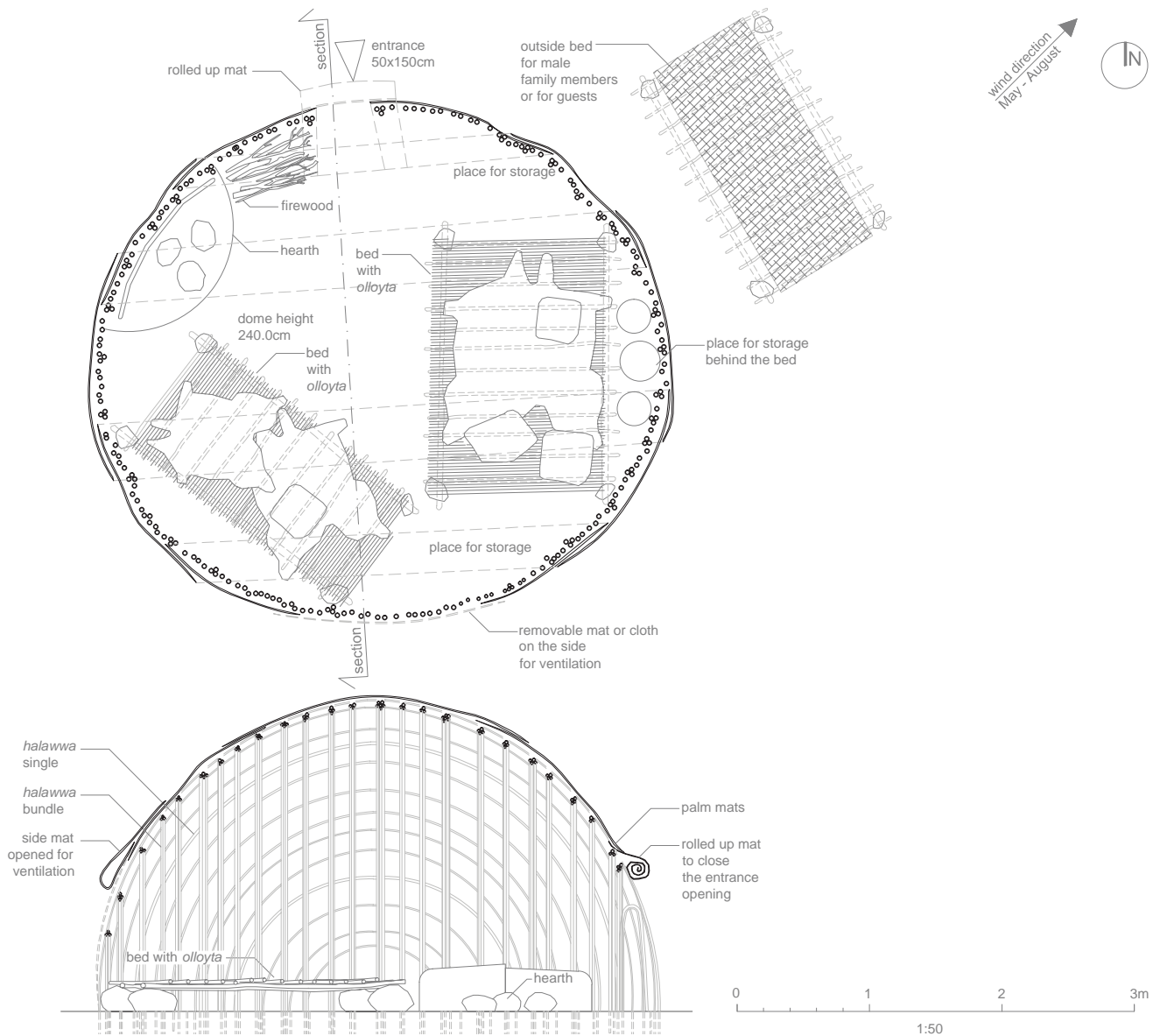


Fig. 222: Dubti *woreda*: hemispherical *daboyta* of a family living close to the town of Dubti

mats are easy to roll up and transport on a camel (Vellinga et al. 2007). Faegre (1979) attributes the successful evolution of the “tent” from a “hut” structure to gradual development of system that allowed use of frame members of reduced size and their easier assemblage. This was enforced by frequent “pitching and taking down” of the houses, writes Faegre (1979:61) as if to confirm the thesis that necessity is the mother of invention, which in this case seems very probable.

The structure of *daboyta*, however, is also able to meet in a unique way other challenges of the specific environment of semi-desert and desert landscapes, which sealed the success of its use among pastoral nomads.

Fierce winds that bring cold rain, sand and dust whirlwinds, or even oven-hot air, are among those circumstances, which in the greatest degree shape the form of nomadic residence. The winds may be seasonally very dangerous, especially on the barren plains with low vegetation and sandy soils, which is why giving a

house an aerodynamic shape reduces the impact of the wind on its surface and prevents the cover from being blown away: “This is a very windy country, so if the wind comes up and over the thing [meaning *daboyta*], it doesn’t hurt it so much. But if it hits the corner . . . , then it rips out that corner” says Valerie Browning (10-11.02.2011) explaining why the Afar pastoralists do not build houses rectangular in shape and concludes: “This is best form to endure the wind”. Also the flexible structure of tensioned bentwood is capable of accommodating constantly varying loads: as soon as the longitudinal and transverse members of armature are joined at the points where they intersect, a free-standing three-dimensional net with mobile knots is established, which allows the construction to sway with the wind instead of collapsing under its force (Prussin et al. 1997). The base of the house can be additionally encased in stones up to about one meter above the ground, which further stabilizes the structure at its bottom (settlement Kori *woreda* 21.03.2012).

Dimensions of a typical *daboyta* vary according to the variables





Fig. 223: Logya, Dubti woreda: hemispherical *daboyta* in a family compound (*daala*) comprising three single households (*buda*)

described in detail in previous chapters on “*Implication of pastoralist lifestyle on the dwelling forms*” and the “*Settlements*”, to which count among others environmental occurrences, availability of resources in particular landscape and resulting from it pattern of movement of each community including their level of mobility. These make the selection of the size, the design and the construction of the dwelling a very individual matter for each family in its particular circumstances. Though size of houses may change, the structural principle of *daboyta* remains the same for all of them.

Bigger families do not necessarily live in bigger dwellings, if they do not have enough means to buy materials for a bigger house, like it is the case in the most eastern parts of the Region, in Serdo area in Dubti woreda, or in Elidar and Kori woredas (APDA annual- and field study reports, access on 05.01.2016). In case of these areas strong winds and landscape, which does not provide any natural obstacles, make people build much lower houses, of a diameter measuring about 2-3m and height reaching about 1,2-1,5m, so that they are not easily blown away (Browning, Little 2008) (Fig. 116) to (Fig. 118). Smaller sizes of the houses make also the frequent movements of these communities easier, so there is also a practical argument supporting the choice.

Also the opposite is often encountered - small families, which have more resources to their disposal, or these, who do not have to move frequently, may live in more comfortable and bigger houses if their situation allows this (Mr. Mohammed 22.02.2012, Women of the settlement near Gubiyrā 11.03.2012, Villagers Ali Adayto 9-10.02.2011).

Also considering seasonal movements of pastoralists, some adjustments can be observed in the selection of the size of houses depending on the current needs of the community. *Daboytas* in the dry season, so in the main settlements, are more spacious and their construction tends to be more elaborate and precise. The dimensions of both houses of Mr Sale (21.02.2012) built in their main compound reached about 3,7-3,8m in diameter

and their height amounted from 1,95m to 2,05m - hence approximating true dome (Fig. 227), (Fig. 228). The other houses found in Logya were comparably big and had comparable proportions: the house of Mrs Moomina (12.04.2012) had a diameter of 4,3m and its height reached 2,3m (Fig. 224), (Fig. 226), whereas the house of Mr Mohammed and his wife (22.02.2012) had a diameter of 4,4m and was 2,25m high (Fig. 229), (Fig. 230). Similar dimensions were displayed by visited houses of a settlement of Mrs Zahara near Dubti (12.04.2012). Her house measured about 4,3m in diameter and was about 2,5m high; other houses in this settlement were also of similar size (Fig. 110), (Fig. 222).

On the other hand, houses in the raining-season habitats tend to be smaller in size as they are transported to the distant parts of the rain-fed pastures - often dismantled and put up again along the way, so their sizes can be even half the size of the houses in the main encampments like it was the case of the houses encountered in Kori woreda (Kori woreda 21.03.2012).

Apart from these external factors Afar include in the design process also other considerations, which relate directly to their daily lives and activities: how much space is needed for a family bed and how much of it to perform everyday duties, how much room for children to play, for small animals to be kept and last but not least for the storage of food and alternatively for storage of other goods. The human body - the body of the user - serves here as a universal measure. The builders, the women, refer to it and their own habits of space use to arrange enough room for all their needs and activities. Interestingly, one of these elements of daily use - the bed - is the one to settle the size of the house. *Daboyta* can be only as small, as the minimal size of the bed and some additional space for performing simple household duties allow, whereas the bed size depends on number of inhabitants living in the household, alternatively corresponding with the size of the traditional bed mat, *olloyta*. The bed, as it will be described in the further paragraphs on construction and space use and



Fig. 224: Logya, Dubti woreda: hemispherical *daboyta*



Fig. 225: Chifra woreda: *daboytas* slightly extended in height

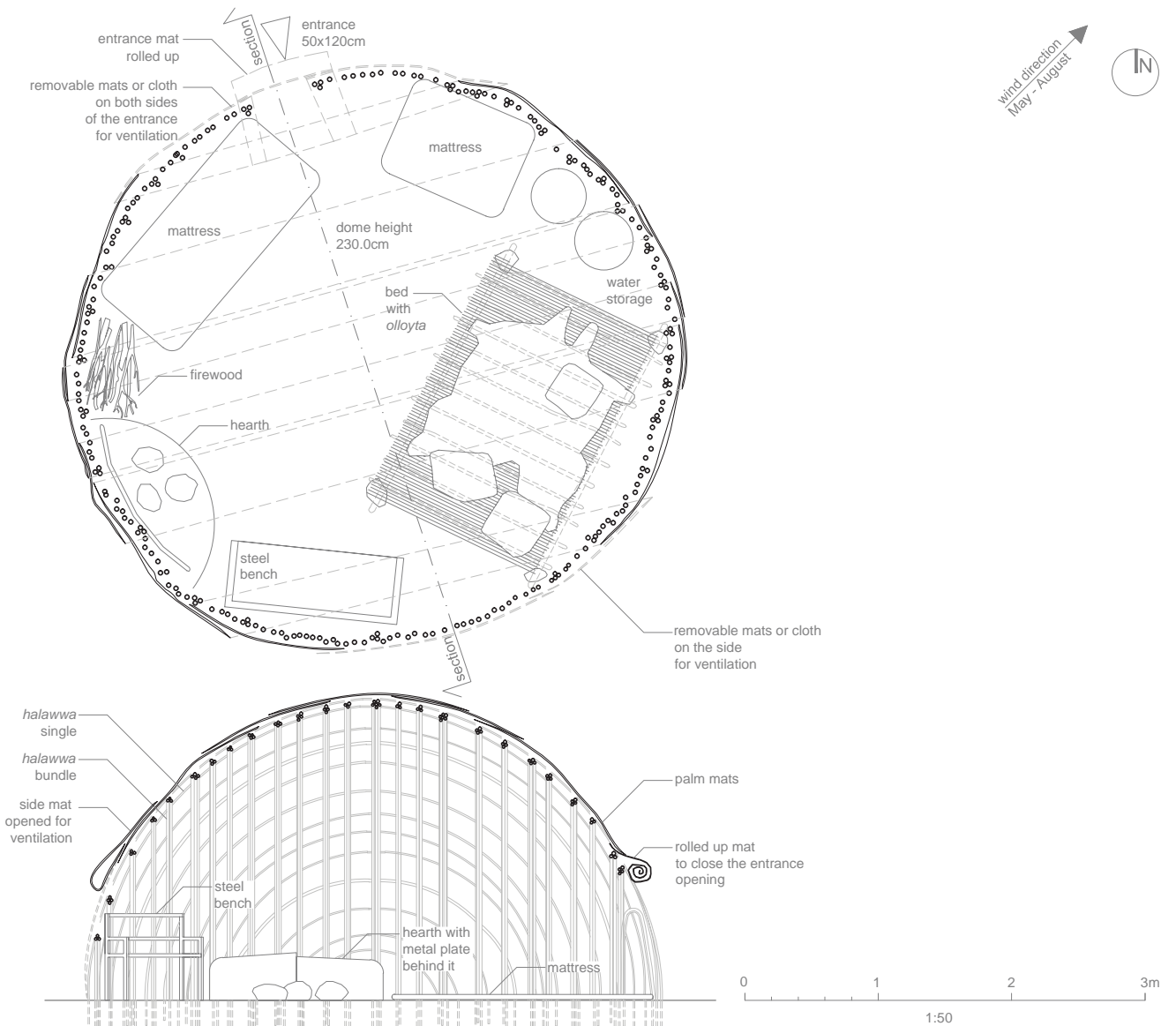


Fig. 226: Logya, Dubti woreda: hemispherical *daboyta* on the town outskirts





Fig. 227: Logya, Dubti woreda: hemispherical *daboyta* with a roof slightly collapsing under own weight due to too slender diameter of members

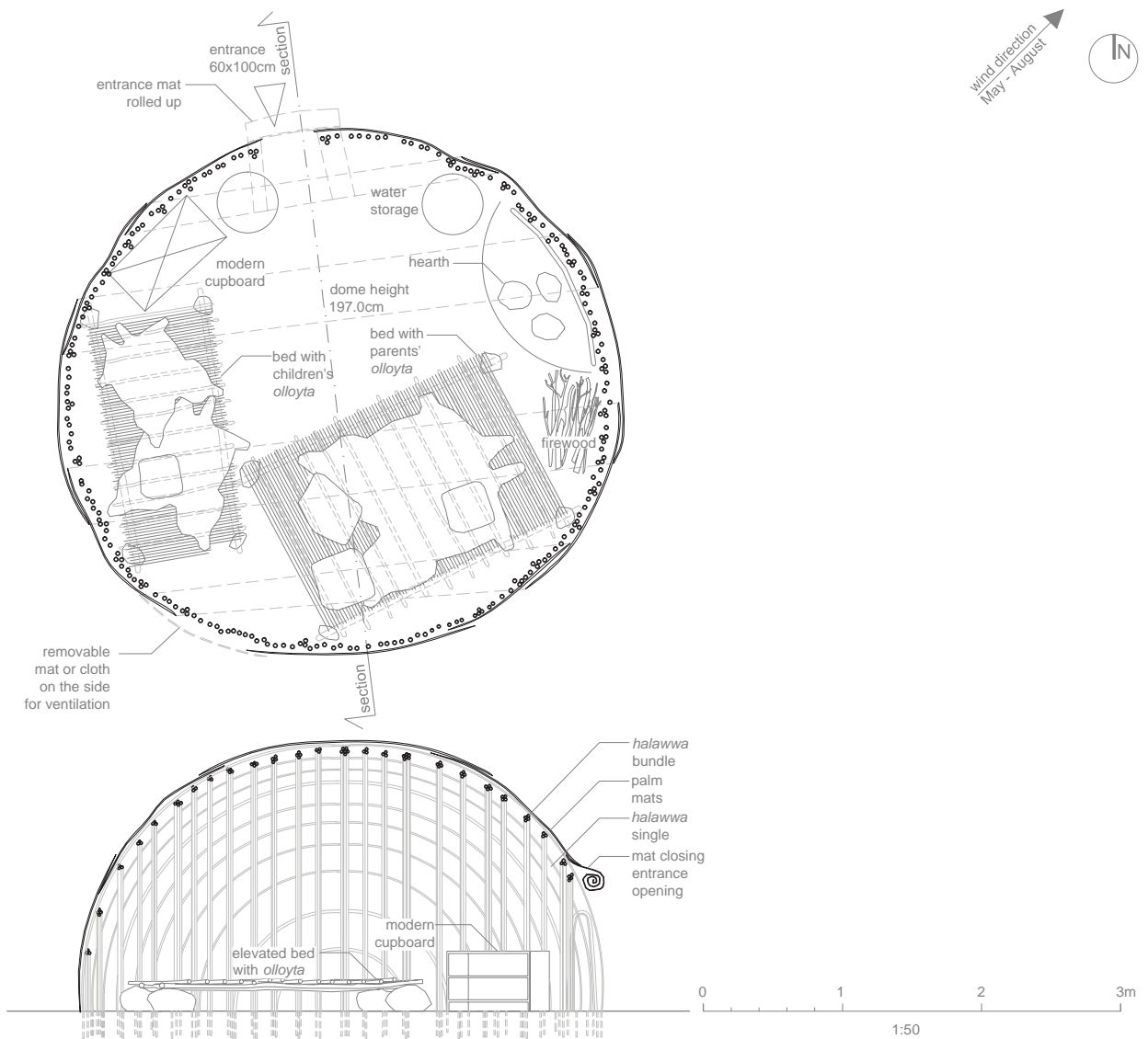


Fig. 228: Logya, Dubti woreda: hemispherical *daboyta*; one of two *daboytas* in a *daala* compound belonging to one of the wives of the host



Fig. 229: Logya, Dubti *woreda*: *daboyta* with a supporting pole inside

functions (see „Other means of reinforcing house structure“ page 151), (see „Olloyta“ page 203), has not only practical meaning for the design of a house, but it is also crucial for its structural stability and constitutes some rules of space use within the household (Mr Mohammed’s wife 22.02.2012, Mrs Moomina 12.04.2012, Mrs Zahara 12.04.2012, Villagers Ali adayto 9-10.02.2011).

### Variations of dome construction, structural reinforcements

Hemispherical *daboytas* of bigger dimensions may paradoxically need additional internal reinforcement in form of a forked central pole dug into the ground and supporting the armature at one of the central knots. Such need occurs if the ratio of the diameter of the branches or roots used for the armature and the actual span of the armature arches is too small to provide suitable structural strength and stiffness needed to bear weight of own structure, especially if mats are wet during the raining season, not to mention external forces of seasonal wind (Mr Mohammed 22.02.2012).

Some of the bigger houses encountered in the Lower Awash seemed to be slightly collapsing under the weight of their own construction, which gave them a slightly flattened shape, like it was the case of both *daboytas* of Mr Sale (21.02.2012) (Fig. 227), which did not have any internal support; among others an intervention in form of introducing an additional forked wood-pillar in the middle was already undertaken (Mr Mohammed 22.02.2012, settlement of Mrs Zahara near Dubti 12.04.2012). The hemispherical *daboyta* of Mr Mohammed and his wife (22.02.2012) of a diameter measuring 4,4m and of 2,25m height at the pick point, had a forked pole installed slightly outside the central part of *daboyta*, just next to the family bed, in the place where the structure appeared to be a little attenuated and collapsing (Fig. 229), (Fig. 230). Although it was not a big intervention, because the diameter of the pole was only about 6cm, it gave the construction this extra point of support, allowing

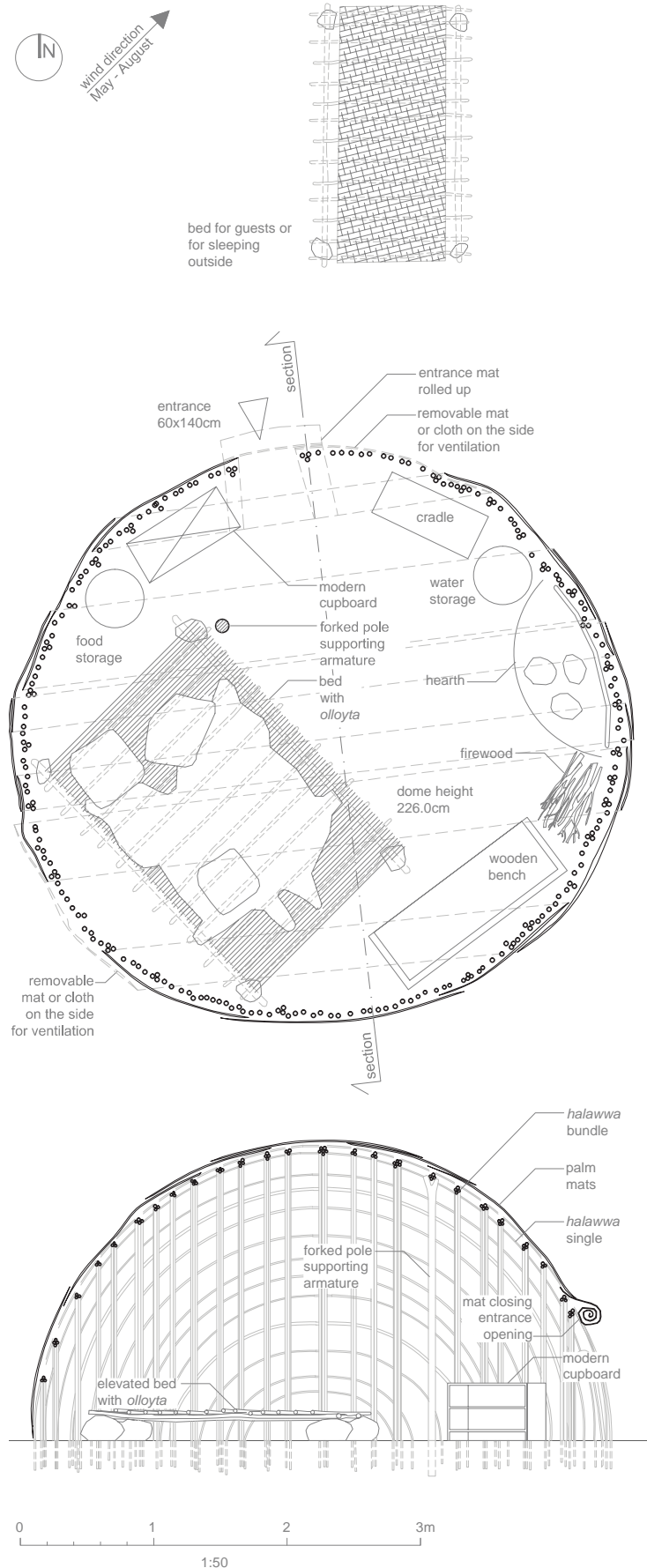


Fig. 230: Logya, Dubti *woreda*: *daboyta* with a supporting pole inside



for the relative stability of the frame - at least to some extent.

Not only “*dead loads*” of own structural components can affect the stability of the system, but also the so called “*live loads*” or “*forces*”, according to Oliver (2003:69), which “*are exerted inconsistently and at different times by the wind, the movement of occupants, the placing of furniture, the swinging of doors, or the pressure of farm animals against the walls*”. Interestingly the introduction of additional supporting poles is not the only intervention Afar pastoralists undertake to enhance the stability of their houses. One of the other techniques relies upon differentiation of frame members - as if designating primary and secondary function to its structural elements and giving them attributes according to the function foreseen. The longitudinal arches become the primary construction and are made of bundles of branches or roots tied together - working as reinforced arches (Fig. 230), (Fig. 231), (Fig. 232). These are anchored in earth every 25-35cm apart, with their

arrangement coinciding with the prevailing wind direction of the season, so that they can better carry its loads. The secondary construction - the transverse arches arranged in distances of 3-15cm apart (depending on the need and experience of builders) - remain single roots or branches placed on top of the primary members, tied to it with straps of bark, sisal rope or cloth (Mr Sale 21.02.2012, Mr Mohammed and his wife 22.02.2012, Mrs Moomina 12.04.2012, Mrs Zahara 12.04.2012, Villagers Ali Adayto 9-10.02.2011). Although one can have a feeling that the reinforced arches are the main load bearing construction and the transverse ones only give the house its shape and provide additional frame for fixing mats (Prussin et al. 1997), in fact the framework still remains a three-dimensional unified net that distributes forces in all directions - though with an emphasis on the longitudinal axis.

All the hemispherical domes recorded in the Lower Awash (in Logya, Semera and in Dubti) had such kind of differentiation of



Fig. 231: Logya, Dubti *woreda*: reinforced rafters *halawwa* of *daboyta* armature aligned with the prevailing wind direction in the season





Fig. 232: Logya, Dubti *woreda*: reinforced rafters of *daboyta* armature consisting of bundles of acacia roots and branches bound with bark strips

principal and secondary rafters foreseen and in all these houses the reinforced arches followed the prevailing wind direction of the current season. The house of Mr Mohammed and his wife (22.02.2012) was the only one, in which both reinforcements of the frame - introducing thicker primary arches and an additional supporting pole in the middle of the house - were introduced (Fig. 229), (Fig. 230).

There is also another simple technique implemented by the Afar women to reinforce the armature. Depending on the season in which a house is to be constructed, the number of arches forming a framework can vary. Mr's Mohammed's wife (22.02.2012) would construct a house in the cold dry period of about 50 arches: 25 longitudinal and 25 transverse ones (a total of at least 100 sticks, assuming that one arch is composed of two sticks). But in the raining season she would reinforce the armature and erect more arches, so that the construction would be able to better withstand active wind loads and bear cover

mats - at this time of year often heavy of water. "At the time of the rain, we make more than fifty arches, in order to make the construction strong" she concludes (22.02.2012).

Afar builders of the western part of the Afar Region show a different approach towards managing the stability of their houses. Though in visited compounds in Ali Adayto the domes of *daboytas* were constructed of pieces of bentwood of nearly uniform diameter (Fig. 233), (Fig. 234) – without differentiating primary and secondary members - the proportions of some of the constructions were visibly extended in height with their cross-section resembling a line of *parabola*, or inverted *catenary*, rather than a semicircle like in the *daboytas* in the Lower Awash (Field Study 2011/2012) (Fig. 197), (Fig. 235), (Fig. 291), (Fig. 296). This measure reduces the impact of horizontal component of thrust force in the dome to the advantage of the vertical component, which in turn reduces risk of its collapsing under "dead"- or "live



Fig. 233: Ali Adayto, Ewa *woreda*: armature made of uniform members



Fig. 234: Ali Adayto, Ewa *woreda*: armature made of uniform members





Fig. 235: Ali Adayto, Ewa woreda: *daboyta* considerably extended in height, such form enhances its stability in the windy area

loads”, because such shape corresponds to the curvature of the forces present in the dome. Afar are not the only vernacular builders, who benefit from this knowledge, but also many other representatives of African building cultures do, who apply clay masonry techniques, as well as wooden and grass constructions, similar to the armatures of Afar (Oliver 2003, Denyer 1978).

The proportions of the mean radius to height of the two exemplary houses in the Ali Adayto compounds (9-10.02.2011) (Fig. 291), (Fig. 296) amounted respectively to 1:1,5 in the first one (mean radius 1,3m and height 2,0m) and 1:1,3 in the second one (mean radius 1,5m and height 2,0m). The proportions of the *grass huts* accompanying these *daboytas* were similar, though as the field study findings have shown, this proportion is often changed even more to the advantage of the height, than it is by

the *daboytas* (Fig. 197), (Fig. 215) and (Fig. 216). In comparison to these, the ratio of the mean radius to height of the exemplary *daboytas* in the Lower Awash amounted to 1:1 and 1:1,1 by the houses of Mr Sale (21.02.2012) (Fig. 228), 1:1 by the house of Mr Mohammed (22.02.2012) (Fig. 230), 1:1,05 by Mrs Moomina’s *daboyta* (12.04.2012) (Fig. 226) and 1:1,15 by the one of Mrs Zahara (12.04.2012) (Fig. 222).

Apart from the structural benefits of adjusting house proportions, there are also the spatial ones: through this intervention much more usable space for house utensils and functions is provided along the perimeter of the house, because its sides are more vertical than in the hemispherical *daboyta* (Ali Adayto 9-10.02.2011).



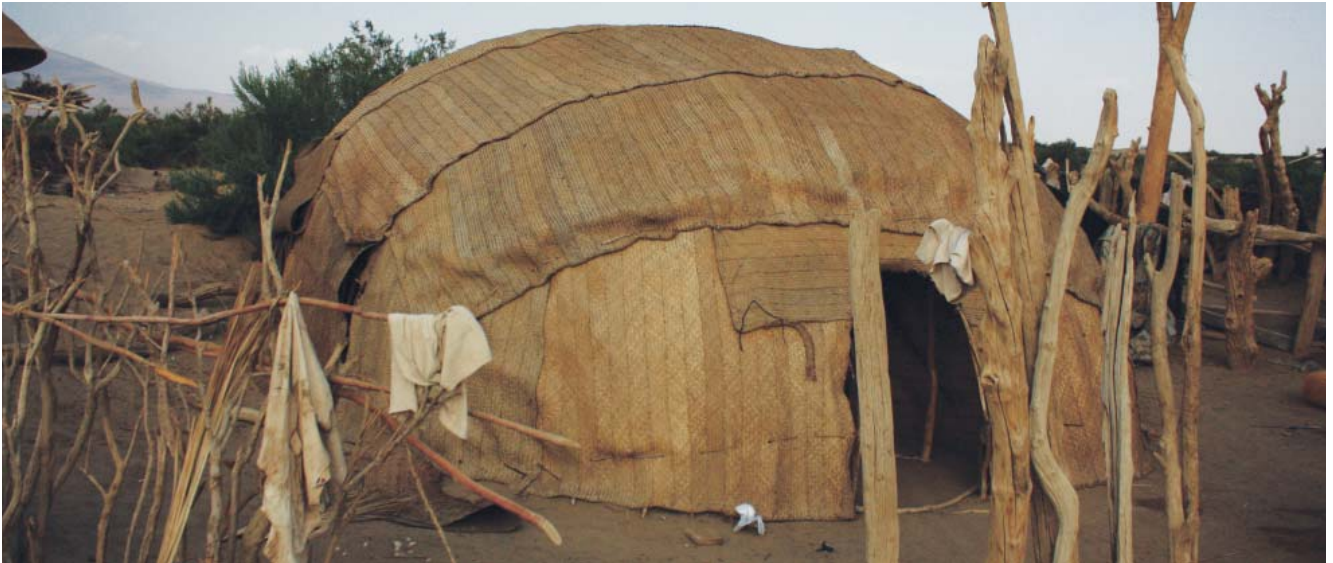


Fig. 236: Dodom area, Afdera woreda: elongated house covered with palm mats

### *Elongated typologies*

Elongated houses, which may be found in some central and western parts of Region, are very interesting examples of typological diversification in the Afar Region, though it is not clear whether they were developed parallel to the basic domical *daboyta*, or rather independently from it, which would be a very interesting topic for further investigations. During our study and research we came across two types of such houses, the first one in the Dodom area in Afdera woreda (Fig. 210), (Fig. 236) and in the nearby Berhale woreda (Mrs Hawa 22.03.2012) and the second one in the Middle Awash, in the Amibara and Gewane districts (Fig. 209), (Fig. 237). Both types resemble elongated *daboytas*, but of a bigger size and with some differences in the structure, proportions and cover material used.

Elongated domiciles of the northwestern part of the Region (Fig.

238) resemble squat beetle abdomen, or inverted boat hull - as such shape is often described in the literature (Prussin et al. 1997, Oliver 2003) - and it is not without a reason. Their proportions differ radically from the proportions of the almost round *daboytas* in the Lower Awash. Measuring roughly 4,0m to 5,0m on their shorter side, up to about 7,5-8,0m on their longer side and only about 2,0 to 2,5m in height, these constructions seem much heavier and collapse slightly at their top if not supported from the inside (Dodom 18.04.2012). These houses are also covered with palm mats, like the houses in the neighboring Ewa, Chifra and in the Lower Awash, but obviously many more of these are needed to cover such great a volume of a house. As far as a small *daboyta* in the main dry period camp needs about 5-10 such mats (Mr's Mohammed's wife 22.02.2012, Mrs Moomina 12.04.2012), the elongated hut needs almost twice as many of them (Field Study observations, April 2012).

Not much different are the proportions of the elongated houses



Fig. 237: Amibara woreda: elongated house covered with reed mats, Oliver 1997: 2015



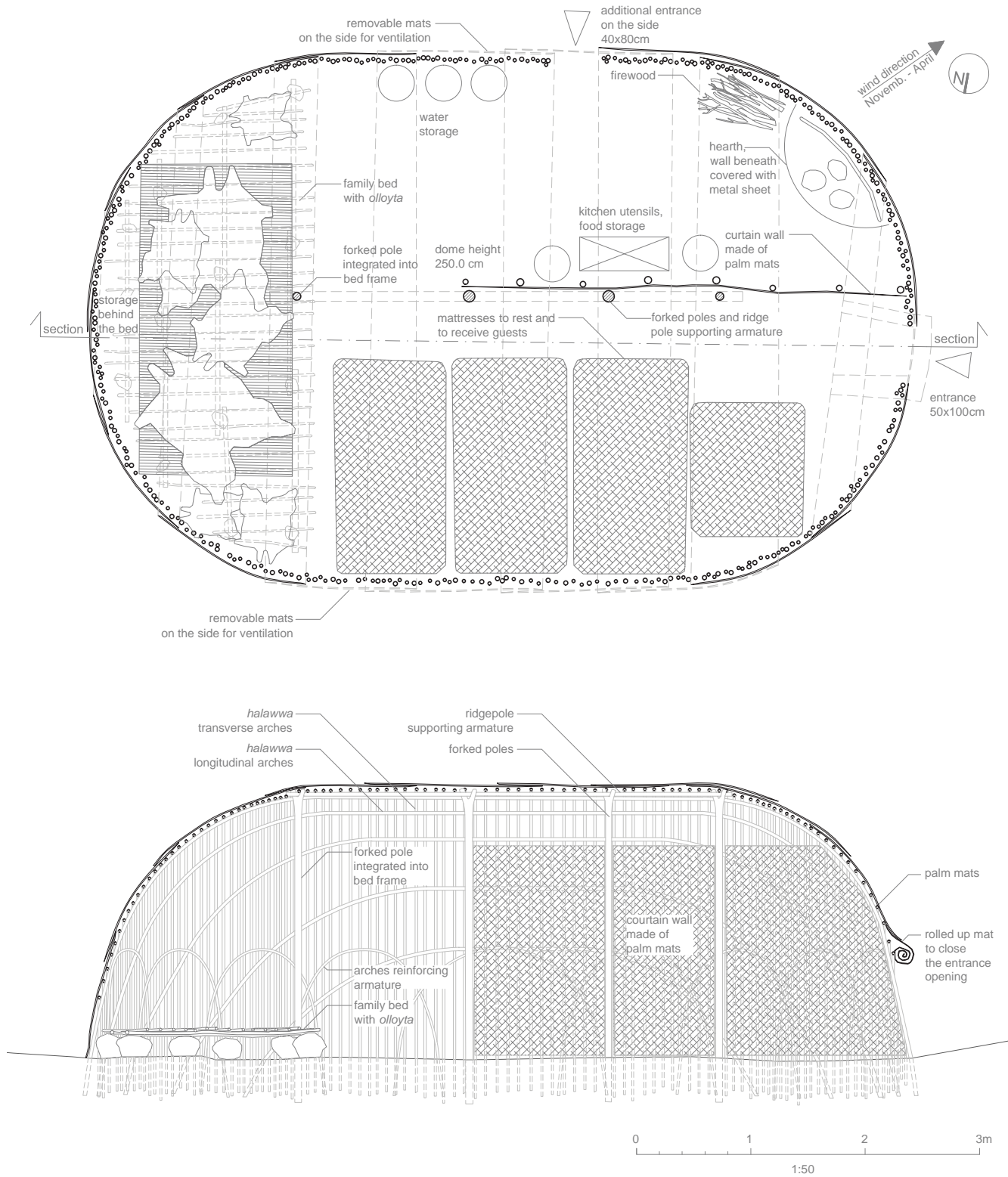


Fig. 238: Dodom area, *Afdera worda*: elongated house covered with palm mats, with additional supporting ridgepole inside held by forked poles



Fig. 239: Amibara *woreda*: armature of an elongated house, Oliver 1997: 2016

in the Middle Awash, around Amibara and Gewane *woredas*, though they seem to be a little smaller and rounder on their top than the houses in the north, due to the almost equal proportions of the radius and height of the transverse arches used in their construction. It is important to mention, that in this area both typologies of houses exist - the only-slightly elongated and almost round type of *daboyta* and a diversity of elongated houses of varied lengths (Oliver 1997, Rettberg 2009). The construction of an exemplary house recorded by Oliver (1997:2016) is a good example of a structure extended in length and also slightly in height (Fig. 237), (Fig. 239). The houses recorded during that study in the Middle Awash occupied a ground area from 6m<sup>2</sup> to 15m<sup>2</sup> (Oliver 1997:2016), their height being an average 1,9m. But also an exemplary house of a family in Angelile (Fig. 240), measuring about 3,5m at its shorter side, about 6,5m at its longer side and about 2,3m height is an example of such typology (BBC Two - Tribal Wives, Series 1, Afar/Ethiopia 20.04.2013).

Unlike the houses in the northern and central part of the Region, the covering of a house in the Middle Awash is made of reed mats, for reed grows in abundance on the nearby swamps of Lake Caddabassa (also known as Lake Yardi) (Hughes 1992, Rettberg 2009).

The principles of construction of elongated structures resemble the ones of the round houses *daboytas*. Also here the longitudinal and transverse arches are arranged at a right angle and the height of successive hoops diminishes towards the perimeters of the house (Fig. 239), (Fig. 240). Nevertheless, the arches are not uniformly arranged like it is in the hemispherical *daboyta* that resembles in fact a regular armature lattice. Some of the frameworks of elongated houses are much denser and consist of a great number of transverse members, only very slightly distanced from each other and bound with a relatively small number of longitudinal members on both sides and at the top. The number of the transverse semicircular arches, *halawwa*, in the Middle Awash can reach from 30 to 50 according to Oliver (1997), which is similar to the elongated houses in the

north. However, if the house is longer than six meters and its structure needs to be reinforced because of the raining season, this number may grow considerably. On the other hand there is only a very small number of longitudinal arches foreseen: 2 to 3 side arches and 2 to 3 roof arches on each side, amounting to not more than 8 to 12 longitudinal arches in total (Oliver 1997).

In this construction the longitudinal arches of a larger diameter are put up first, beginning from the side arches (Oliver 1997) to outline the main size and shape of armature. Serving as kind of leading guidelines for the remaining transverse arches, they are arranged every 50-60cm, often consisting of more than one root or branch tied together if the length of one piece is insufficient for the whole length of a house. The sequence of transverse bentwood is much more denser than in the round *daboyta* (Oliver 1997; BBC Two - Tribal Wives, Series 1, Afar/Ethiopia 20.04.2013), which enhances the stability of a house and gives better support for the mats (Prussin et al. 1997).

Because of their relatively big size in comparison to the typical central-Afar *daboyta*, some additional reinforcements may be introduced inside of the houses to prevent its roof from collapsing under dead loads and allowing better resistance to wind and rain pressure. The visited house in Dodom area in Afdera *woreda* (Fig. 238) had a ridgepole running along the axis of the house that supported the roof arches, which in turn was held by three forked posts dug into the ground. One of the posts was additionally connected to the bed construction at the rear part of the house, which provided the armature with additional stabilizing element (Dodom area, 18.04.2012). The house in Angelile (BBC Two - Tribal Wives, Series 1, Afar/Ethiopia 20.04.2013), on the other hand, had only one post supporting directly the roof at one of the intersection points of its framework members, which was placed close to the entrance to the house on its shorter side and incorporated into a light construction of a wall separating entrance from the main room of the house and a fireplace (Fig. 240).



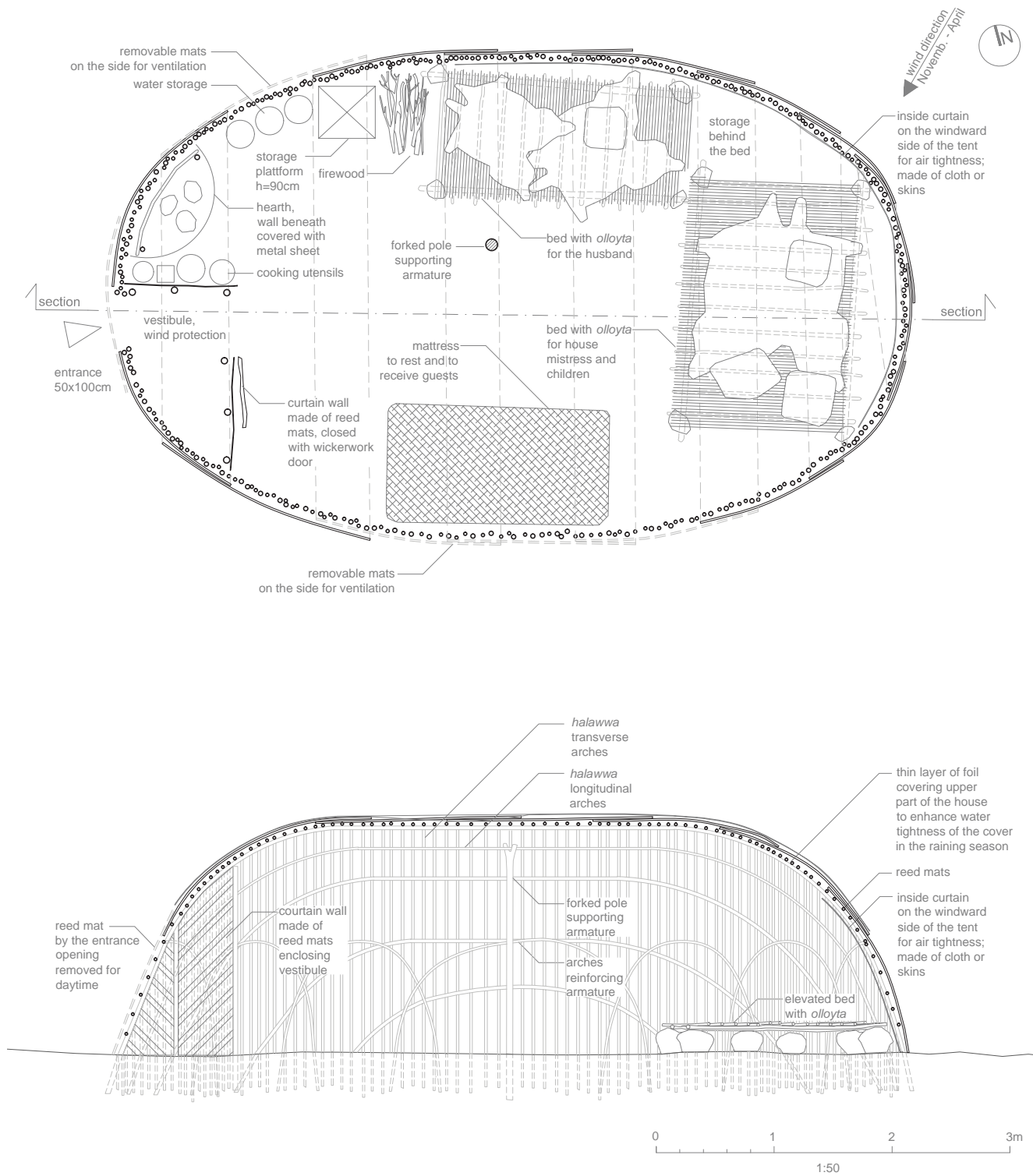


Fig. 240: Angelile, Gewane woreda: elongated house covered with reed mats, after: BBC Two - Tribal Wives, Series 1, Afar/Ethiopia 20.04.2013  
150



Fig. 241: Dubti *woreda*: complete armature of abandoned *daboyta*; in the background: some of the members have been removed and taken to the permanent settlement, where they will be used to construct a smaller *daboyta*

Despite the big volume, these elongated armature dwellings retain their aerodynamic shape, which allows the wind to slide on their surface, on condition that the alignment of the house follows with its longitudinal axis the prevailing wind direction of the season, just as it is the case among other nomadic tribes, which Prussin et al. mention in their study (1997), which inhabit elongated types of houses.

### *Other means of reinforcing house structure*

Integrating house furnishings into the structure of the armature, like it was the case in the visited house in the Dodom area in Afdera, is one of the other means of structural reinforcement applied to effectively enhance the stability of the system (Prussin et al. 1997) (Fig. 238). Because of its reasonable size and weight, the bed is one of these elements, which work best for such purpose. Especially during windy nights of the dry period, the weight of the inhabitants sleeping on the bed can lower the risk of the house being blown away if the bed is structurally connected to the windward wall. Not without reason the bed frame tends to be erected first when constructing a house, just after the outline of *daboyta* is determined. Only afterwards the remaining structure is built around and the arches of the windward wall are tied at multiple points to the frame of the bed (Mr Mohammed 22.02.2012, Mrs Moomina 12.04.2012).

However, just as such order of building - with the bed being constructed in first place - does not always have to take place (Browning 9-10.2011), the measure of joining its frame with a house armature is also not absolutely necessary to maintain the stability of the whole system of an Afar house. Unlike the Beja, whose houses would not even keep their shape without bed construction being part of the frame (Prussin et al. 1997) (Fig. 199), Afar nomads may voluntarily incorporate their bed frames into the system, because of the clear reinforcement benefits reached at a very small work cost. "As a consequence", writes Prussin et al. (1997:56), "the bed is turned into a framework integral



Fig. 242: Logya, Dubti *woreda*: entrance built in the armature





Fig. 243: Logya, Dubti *woreda*: entrance opening left free in the armature, with pal mat installed above it



Fig. 244: Semera, Dubti *woreda*: reinforcement arches installed at the bottom of an armature on both sides of an entrance replacing main construction arch that would run here otherwise if there was no opening

with the dome, thus enhancing the stability and equilibrium of the architecture". Interestingly, when a family is on the move, the skeleton of the dome and of the bed may stay in place and only the mats: the bed mat *olloyta* and the cover mats made of palm leaves are transported on camel to a new destination (Browning 9-10.02.2011, Mrs Zahara 12.04.2012, Mrs Moomina 12.04.2012) (Fig. 221), (Fig. 241).

A similar reinforcing effect is reached when division walls are erected. These are connected on one side to the frame and on the other to vertical poles inside of a house, which are dug fairly deeply into the ground (Dodom 18.04.2012; House Angelle, BBC Two - Tribal Wives, Series 1, Afar/Ethiopia 20.04.2013) (Fig. 238).

Not only the bed construction can enhance stability of the house frame, but also arranging other furnishings, so that they support the windward wall, can lessen the impact of the wind force on the house. Sometimes these considerations reach further to the layout of the compound and animal pens may be located just behind the huts, again on their windward side, so that the air can be diverted and exert less pressure on the tent structure (Prussin, et al 1997).

Apart from these, the construction may be also additionally weighed down with house utensils, which are often hung on the frame members: water-, butter- and milk containers made of the goat skins, various cooking utensils, cloth, men's traditional head-support and baskets make the equipment of each family, so they are always available.

The entrance opening of an Afar house tends to be kept relatively small. It should be big enough to allow members of the house to enter it with ease, but also as small as possible not to allow cold or hot wind and rain to penetrate its interior. Usually a height of about 0,8-1,4m and a width of about 0,4-0,6m is sufficient for this purpose (Field Study findings 2011,2012).

In hemispherical *daboytas* the entrances are placed between the members of the transverse arches, alternatively between members of the secondary construction, so that there is as little interference as possible in the arches bearing loads of currently prevailing winds - the longitudinal arches (Fig. 242) to (Fig. 244). In recorded elongated structures entrances were arranged differently: between the longitudinal members, but still opposite to the wind direction (Fig. 236), (Fig. 238).

Arches accompanying the entrance may need to be thicker or reinforced to make the structure stronger there where openings are to be done. Alternatively an additional bracing in form of small arches embedded in the ground, just next to the entrance may be foreseen as well.



## Building process



Fig. 245: Ali Adayto, Ewa *woreda*: women lead pack camels and donkeys carrying house components and various utensils to raining pastures

### *Building: domain of women*

Due to the range of duties and expectations that tradition and pastoral lifestyle impose on women, not only all the issues related to the upbringing of children, the cooking of meals for all family members and the general handling of the home matters lie within their competence, but also these activities, which are related to building and maintaining an Afar traditional house. According to customary practice, the house and all related artifacts belong to a woman: she is responsible for its construction, appearance, decoration within, furnishings and also its maintenance. The woman is equally responsible for planning relocation and transportation of her house in the event of seasonal migration to the rainy season pastures (Fig. 104), (Fig. 245) (Faegre 1979; Mrs Moomina 12.04.2012, Mrs Zahara 12.04.2012; Women of the settlement close to Gubiyra 11.03.2012; Mr Mohammed's wife 22.02.2012).

As far as every house mistress decides on the physical appearance, size and shape of her home, her endeavor as a builder would not be possible, or made only very difficult, without the help of other female members of her community. In order to put up an average-sized *daboyta*, a cooperation of two to four women is most effective; erecting it alone is much more difficult, because of the height of a house and spans of arches exceeding the possible reach of single woman's hands, as well as the need to undertake some building actions simultaneously (Prussin et al. 1997, Browning 11.03.2012, Mr Mohammed's wife 22.02.2012, Mrs Moomina 12.04.2012). The effort of building in the nomadic context is hence a collective one (Prussin et al. 1997). And what is perhaps even more important, it is a part of ritual strongly defining the position of a woman in her society, the one that accompanies her in the successive events in her life. Not only is it present in the ordinary effort of rebuilding *daboyta* after reaching a new camp destination, but it is also associated with celebration of marriage, the birth of a new baby, moving





Fig. 246: Gubiya, Yalo *woreda*: an *asida*, or *dakha* - thick porridge alternatively with spices and goat butter - is prepared for any special occasion: the death of a family member, when guests arrive, or after women finish constructing houses after they reach the new satellite camp destination or return after the raining period to the main encampment

to a stage of being a grandmother or widow, or even honoring of death of one of the female community members (Getachew 2001; Browning, Little 2008; Browning 11.03.2012).

The first house of a woman is built for her by the female family members on her mother's side and given to her, together with a traditional bed mat *olloyta*, as a marriage gift, or dowry (Browning 9-10.02.2011; Mrs Hawa 22.03.2012; Mrs Moomina 12.04.2012; Getachew 2001). Since that moment she is responsible for its demounting and reconstructing with each move her nomadic family makes to the new destination, for its maintenance - so that it serves her family long time - and also for helping other women in her community to rebuild their houses and eventually for passing the knowledge of building to her daughters and providing them with similar houses as soon as they marry (Prussin et al 1997; Mrs Zahara 12.04.2012).

Construction skills are passed down from a generation of married women to a generation of young girls just entering

an adult stage of their lives (Mrs Zahara 12.04.2012) - just as boys are taught animal husbandry from an early age when they help older boys and men grazing their flocks (Getachew 2001). "*Collective architectural creativity*", writes Prussin, et al (1997:190), "*is critical in the nomadic context of architecture because it also provides the medium through which women's skills are transmitted and inherited*". At the same time it has also a socializing aspect in which values are transmitted, ideas discussed, and a sense of social responsibility is developed. Women chat while building, exchange stories or news, sing and joke (Women settlement near Gubiya 11.03.2012, Browning 11.03.2012; Mr Sale 21.02.2012). After one house is finished, they proceed to the next house of another community member - one after another - until all houses are finished (Mrs Moomina 12.04.2012). The common effort is rewarded with celebrating a meal afterwards, which the house mistress for whom the house was constructed, or voluntary women, whose houses have already been completed, prepare for all engaged in the

construction process (Mrs Moomina 12.04.2012, Women settlement near Gubiya 11.03.2012, Browning 11.03.2012). *“On this day they take pot together and everybody brings a little bit of this flour. Probably when they eat normally, they wouldn’t eat this. This is considered special. The women who helped to build the house, they will make this ‘dakha’ which she is cooking now and bread and they will eat that together”* explained Valerie Browning (11.03.2012) during our visit to one of compounds (Fig. 246).

Not to undermine the role of men in the process of creating a compound, it is important to say that they also have their fair share in the building process. However, it amounts to collecting brushwood and woods of bigger size needed to construct and reconstruct animal shelters and compound fencing, which is not perceived as ritual connected to the erection of a house (see „Building activities: division of labor“ page 68) (Browning 11.03.2012).

### *Preparing materials*

Like with all building undertakings, the process of erecting an Afar house begins with designating a plot, as well as collecting and processing building materials that will be used afterwards. Both women and men are engaged in this process, though, as mentioned above, women have their biggest share in preparing materials for construction of the house (Mrs Moomina 12.04.2012, Mr Dewud 24.03.2012, Mr Mohammed and his wife 22.02.2012). Depending on the construction component, whether it is framework, covering, furnishings, or pieces used for binding or fixing, materials may be collected by the builders in the surroundings, or purchased in the town market if they are otherwise not available.

*1 Dakha - thick porridge of polenta consistency, cooked for special occasions: wheat, water, salt, red pepper powder, goat milk and butter; Browning 11.03.2012, Mr Ahmed 5.03.2012, Mr Tibo 12.04.2012*

Traditionally nomadic women, and among them Afar women as well, used these resources for construction, which were naturally provided in the area, most of them being of a plant origin and the remaining ones were stones and materials made of animal skins (Prussin et al. 1997). Nowadays the repertoire of building materials is complemented with modern ones - either synthetic, or metal - which are used mainly to enhance water- and wind-tightness of the house cover (Fig. 168), (Fig. 255). These do not require frequent exchanging like the building components of natural origin do. That is why increasingly more and more Afar become convinced of their advantages, also because of the cost-saving aspect of their maintenance calculated in the long run. What is however lost in this transition is not only the suitability of new components for transport in the nomadic context, but most of all the advantages of natural temperature regulation and air exchange provided by the covering made of materials of plant origin, which synthetic- and metallic ones do not provide.

### FRAMEWORK

The framework of a nomadic armature house is made of elastic parts of various jujube- and acacia species (Parker 2006, Prussin et al. 1997), which are either its branches, or roots. Branches are much easier accessible, but their length is often limited and especially shorter pieces may be too slender to provide sufficient stability of the frame. On the other hand roots admittedly require the effort to be dug out, but they provide much longer pieces of relatively straight wood, which has additionally much more regular thickness over the entire length, than the branches do. However, if the roots are of a slightly bigger diameter they tend to be less flexible and require pre-bending if they are to be used as arches (Prussin 1997) (Fig. 247).

*Halawwa*, the wooden sticks that will make the framework of a tent, are gathered for a couple of days in a row in the close neighborhoods and are tentatively preselected for their suitability for the building purpose. Only these sticks that are at least about 0,5-1,0 cm thick at their thinnest end will be collected. Most



Fig. 247: Northern Kenya: Rendille women pre-bend wooden members of the framework if these are not flexible enough; Prussin et al. 1997:31





Fig. 248: *halawwa* - members of the armature are gathered or cut when they are green and still easy to bend while constructing a house; with time they dry slowly till a natural yield is created and members remain in form of arches

of woods used for constructing enclosures will be remains of dead trees found by the river, but the branches and roots for constructing a house need to be cut from green woods, so that they still have the natural flexibility (Mr Mohammed, his wife 22.02.2012). Although some Afar pastoralists say they would never cut a living tree (Browning 9-10.02.2011), the others make an exception for trees growing on their own clan land, which parts are cut in moderation for special purposes like for construction of a house for instance (Mr Mohammed 22.02.2012, Mrs Moomina 12.04.2012). Mr Dewud (24.03.2012), whose family lives on a clan land in Dodoble, where flooding planes of the Awash River provide them with this material, explains: *"We can do it [cut trees], because we live there, but if the other people come here, they are not allowed to cut the trees"*. The same was told to us by other traditional families living around the Lower Awash, including Mrs Moomina (12.04.2012), who confirmed that because the land belongs to them and they come from here, they also have the right to cut the trees.

The number of wooden pieces needed to be prepared for constructing a single house varies according to its particular shape, size and planned reinforcements within the framework (see „Variations of dome construction, structural reinforcements“ page 143), (see „Elongated typologies“ page 147). Arches of the armature consist always of at least one pair of bentwood pieces put on the opposite sides of the house (Mr Mohammed and his wife 22.02.2012), so the average number of collected roots or branches for a small house needs to amount to at least 100 pieces if the frame is made of 25 longitudinal arches and of 25 transverse arches (Fig. 221). By the elongated houses this number may reach even over 130-160 pieces: 120 pieces for 60 transverse arches and remaining 10-40 pieces for 10 longitudinal arches, depending on how dense and strong the armature must be (Mr Mohammed 22.02.2012, Mrs Moomina 12.04.2012, Oliver 1997) (Fig. 239).

Unless the branches or roots are too thick to be bent easily, there is no need to prepare them in any special way for building (Browning 9-10.02.2011, Mr Sale 21.02.2012, Mr Mohammed and his wife 22.02.2012). Collected or cut wood is cleared of thorns and any green leaves and preselected according to its length and thickness, which allocates it in the group of arches that are either closer to the center, or perimeter of the future house, including their designation for the longitudinal and transverse group of members - if there is any planned differentiation in the construction (Mr Mohammed's wife 22.02.2012, Mrs Moomina 12.04.2012). If the number of available long pieces needed to overlap at the highest hoop is insufficient, a number of shorter pieces may be bound together to form one: *"if one stick is too short, we take e.g. three of them and we bind them together"* says Mrs Moomina (12.04.2012) (Fig. 249). The same applies if construction needs to be reinforced due to the bigger span of a house - a couple of thinner laths are bound together and form a thicker rib designated for the primary construction (Mr Tibo 12.04.2012) (Fig. 231), (Fig. 232), (see „Variations of dome construction, structural reinforcements“ page 143).

Usually, the laths of armature do not need to be pre-bent and they are easily adjustable while constructing: *"even if they have dry wood"*, says Valerie Browning (11.03.2012), *"they will bend, because it's small, it's not a big wood, so it will bend. Either they take them green or dry wood"*. Members of the frame deform permanently with time, as they stay in one position being part of an armature. The "yield" comes about naturally without need to tension branches before they are used for building (Oliver 2003) (Fig. 248). When nomads are on the move, one of the most distinguishing part of their transportation are these pointing arches bound to a camel saddle, which remind of sales of a ship (Fig. 104), (Fig. 279), (Fig. 286). The roots or branches of bigger diameter, which unlike slender branches of the transverse arches, cannot be bent easily during the building process, need to be prepared before they are used, so that they do not break





Fig. 249: Dubti *woreda*, acacia members of an armature of a *daboyta* left behind in the main dry season compound; shorter pieces are tied together in bundles to form longer members needed to cover the longitudinal or transverse span of a house

suddenly while being bent too fast (Oliver 2003). In such cases the plastic deformation into arch needs to be created before, like the Rendille women in Kenya do: pieces of future framework are tightened between the branches of a growing tree or bush; they are bent gradually, left for some time so that material gets used to the tension and finally deforms (Prussin et al. 1997) (Fig. 247). Oliver (2003) describes another technique for pre-forming roots by heating them while they are still green. Their ends are connected in the form of a tightened arch - in such shape they are left to dry until they deform plastically into a desired shape.

#### COVER

Mats used for cover of an Afar house are mainly rectangular in shape, though round and oval ones may be also produced if there is such need. Because rectangular mats can be woven in

various extendable lengths, this shape is commonly preferred as the one, which may be adjusted accordingly to the changing size of a house (Vellinga et al.2007, Prussin et al.1997).

Depending on the resources available in particular part of the region, there are two main sources of plant origin, which are used to produce mats for house covers among the Afar people: the *Doum* palm leaves and the reed. Both these raw materials are appreciated for their lightness and flexibility, and the ease with which they undergo manual treatment without the need for tools. An important feature of both materials is their high thermal insulation, which is especially important under burning sun or during cold night, but also the fibrous structure that allows the rainwater to drain rapidly without being absorbed by the material. The porous structure of mats provides also appropriate ventilation, so crucial in the dry and very hot climate (Vellinga et



Fig. 250: diagonal braiding of palm mats and fibrous structure of palm leaf allow the water to drain fast from the house cover; the porous structure of material provides both heat and cold insulation, as well as sufficient ventilation





Fig. 251: Mrs Fatuma weaving palm mats

al. 2007) (Fig. 250).

*Doum* palm grows mainly in the deserts of the north-eastern part of the region, in the Afdera and Elidar *woredas*, where it is harvested and either plaited straight into mats, which are then sold on the market in Asayita or Elidar, or the palm leaves and fronds are tied in bundles and sold as a raw material as well. From here both the ready-made mats or palm leaves are redistributed to various parts of the region, mostly the central and western ones, where *Doum* palm does not grow (Browning 11.03.2012) (Fig. 102), (Fig. 137).

Reed on the other hand may be found in abundance in the Middle Awash, where swamps around the river and the Lake Caddabassa are overgrown with it (Fig. 185). Women living in the surroundings cut it during the dry period and then tie it into thick mats, which are sold on the market in Amibara or Gewane. Similarly to the palm mats, they are delivered from here to the remote areas of the Middle Awash (Rettberg 2009).

It depends on the preference of the builders and the skills they possess, whether the ready-made mats are purchased for the house covering, or only the raw material, which is afterwards woven into mats by women. Our hostesses in the Lower Awash would make the mats themselves (Mr Mohammed's wife 22.02.2012, Mrs Moomina 12.04.2012, Mrs Zahara 12.04.2012). The self-woven mats were found to be of a much better quality than the purchased ones, thanks to which they would eventually last much longer than the others. Mr Sale (21.02.2012) claimed the mats made previously by the women in his community wouldn't need exchanging for about two to three years, whereas the purchased ones lasted only one year. Interestingly it is much more expensive to buy materials for one mat, than to buy a ready-made one: Mr Mohammed and his wife (22.02.2012) paid about 300ETB for palm leaves which were enough to produce one mat, which size was about 1-1,5m x 4-6m, whereas Mr Sale (21.02.2012) purchased similar ready-made mats for about 100ETB each. Mrs Moomina (12.04.2012) and Mr Mohammed's



Fig. 252: palm mat is made of strips of woven palm leaves, which are sewn together; the number of strips depends on the desired length of the mat



wife (22.02.2012) attributed the quality of the self-made mats to the tighter and more careful weaving, which admittedly uses up more raw material, but it gives the mat better water and wind tightness.

In comparison to the palm mats, the reed mats of similar size, sold in the market in the Middle Awash in 2009, cost only about 30ETB each (Rettberg 2009). The fabrication of reed mat takes however a little less time than the fabrication of a single palm mat due to the use of other working technique and size of the threads. In fact the reed mats aren't like palm mats literally woven, but the stalks and leaves are tied together by means of interweaving a sisal rope or reed leaves in-between (Oliver 1997:2015, Rettberg 2009) (Fig. 237). Rettberg (2009) found out, that it would take three days for a woman to finish one reed mat of a size of about 6m<sup>2</sup>. The women plaiting palm mats in the Lower Awash needed about one to three working weeks - depending on the amount of other responsibilities, which they had towards their family and animals - to complete one mat (Mr Mohammed's wife 22.02.2012).

The production of a palm mat proceeds in a couple of stages. First the leaves are soaked in water, so that they gain flexibility, otherwise they would break too easily. When soaked, they are plaited with use of a diagonal braiding (twill technique according to Prussin et al. 1997) into about 1-1,5m long strips, about one to two-palms wide (Fig. 253). As soon as all strips are ready, they are sawn one by one into a rectangular mat (Fig. 252). Depending on the desired length of a mat, about 20-40 such strips need to be woven to cover one length of a hemispherical *daboyta* of a 2,2m radius (Mr Sale 21.02.2012, Mr Mohammed 22.02.2012). Mr Mohammed's wife (22.02.2012) needed one hour to make one such strip, but a total of 140m are needed to complete the cover of one *daboyta* (average 5 mats per *daboyta*, each 1,2m wide and about 4,5m long). Taking into account other responsibilities she had in the compound, she was able to complete only one mat within twenty days. Mrs Fatuma, who was also living in our



Fig. 253: woman in Ali Adayto weaving mats while the family migrates to a satellite camp



Fig. 254: natural bark, sisal ropes or thongs are used for tying elements of armature together; thorns and ropes are used to tie mats to framework





Fig. 255: Mile *woreda*: the use of modern cover materials complements the repertoire of natural ones

compound, would spend almost whole days on weaving mats for the use of the local organization APDA and for own compound and she alone was able to complete one mat within a week, but not sooner (Fig. 251).

Because the mats can be arranged on a house either along longitudinal- or transverse arches, or even in two layers with change of orientation in each of them, there is no need to weave longer mats for the elongated typologies, but they may be only just as long as to overlap the house at its width (Fig. 210), (Fig. 236). In such case a bigger number of these mats are needed to cover the whole house, reaching even up to 20-30 mats. In comparison to this, a small *daboyta* in the raining season may need only 10 mats, whereas the bigger one - in the dry period compound - like the examples in the Lower Awash (diameter about 4,5m and 2,5 height) may need from 15 to up to 20 mats including the mat, which covers an entrance and the side mats (Mr Sale 21.02.2012). Some of these may be also kept as a reserve in case guests arrive, so that they can be used for sleeping or resting. Mats are also used as curtain walls, or membranes giving shadow and relief from burning sun (Browning 9-10.02.2011).

#### TYING MATERIALS, FURNISHINGS

The construction of an armature requires use of ropes, strips of materials or fibers, so that a uniform entity with flexible knots can be completed. Natural ropes hand-made of sisal fibers, ribs of the *Doum* palm, or the bark of some acacia species work best for this purpose, but also the thongs cut finely of goat- or cattle hide, or even pieces of cloth will likewise fulfill the purpose (Browning 9-10.02.2011, Prussin et al. 1997, Vellinga et al. 2007) (Fig. 232), (Fig. 254), (Fig. 261), (Fig. 262).

Afar pastoralists produce ropes for many different purposes. There is always enough natural material to be found in the surroundings, so that there is no need to purchase it on the market (Browning 9-10.02.2011). With ropes the legs of donkeys and camels are tied, so that they do not scatter too far from the

compound. These are also used for binding a couple of bentwood pieces to form a longer arch for the house framework (Prussin 1997). Women use them also to tie the mats to the frame, which can also be made with longer thorns of acacia bushes. Mats are often additionally pinned together with such thorns, so that they do not elevate when wind blows, but stay in place (Fig. 264).

Strips of goat- and cow skins, apart from binding, are used for making a traditional Afar bed mat *olloyta*, but recently also for plaiting furniture like stools, or benches, which can be found in the houses of rather sedentary communities (Mrs Moomina 12.04.2012) (see „Elements and furnishings of the house“ page 201). Apart from the main materials needed to erect the house, there are also other, which need to be collected to complement its stability and furnishings. There is a row of stones, which is intended for weighting down the house, but also three stones for a fireplace. Alternatively four stones are needed to support the bed frame if the construction is to rest on them instead on the forked poles dug into the ground. Also the very frame of the bed requires finding relatively straight branches of a bigger diameter to hold the weight of all house inhabitants (Fig. 257), (Fig. 258).

#### OTHER MATERIALS, RECENT DEVELOPMENTS

Only recently Afar started complementing the repertoire of natural materials with these marketed from the towns, but it is mostly in the areas close to the urban centers. Often these are not purchased, but collected from the abandoned sites, or roadsides - left or lost by the truck drivers - and incorporated in the covering of a house, making a patchwork of natural and synthetic materials. Often along the roads one can encounter houses covered in tarps instead of palm mats; paper boxes, cloth, various foils and nets are also used for this purpose. A natural ring of thorn bushes, which is supposed to prevent the mats from being devoured by household animals, is replaced by artificial plastic net or again plastic foil and metal sheet. Also naturally made house utensils like baskets and goatskin containers are gradually replaced with plastic oil tanks or metal cans (Fig. 227), (Fig. 255), (Fig. 266).



Fig. 256: Ali Adayto, Ewa *woreda*: bed frame resting on forked poles embedded in the ground; bed mat *olloyta* is laid on the bed platform

### Constructing the house

It does not take much time to construct an Afar house if there are enough women in the compound to help, and materials are already collected and prepared: *“If you get enough of help”, says Valerie Browning (11.03.2012), “it could be completed in a week. But if people are scattered because of the drought, it might take up to two weeks”*. Naturally a bigger house, like the one in the Dodom area and in the Middle Awash, may require much more time for construction, unless all women in compound help by erecting it.

When a family moves, a house needs to be constructed as soon as possible, regardless of the time of day, but it is not a priority. The practical approach, as in any other area of the life of the nomads, makes Afar women adapt their building responsibilities to their other daily duties and to the duties of the other women in their compound (Prussin et al. 1997).

If there is a good windless weather and no other responsibilities are on the way, women may begin the process of erecting houses (Mr Sale 21.02.2012). First effort needs to be put in the selection of the site. Relatively flat areas, which are free of running water, are preferably chosen: *“if it rains and we think, that the water is going to come from a specific direction, we will not construct the house in the place where the water will supposedly run. We will build it away from the running water”* explains Mrs Moomina (12.04.2012). If the ground is uneven, it can be slightly leveled, but otherwise the site is only cleaned of the stones, twigs and thorns, and alternatively brushed clean of remaining pebbles and plant remains.

In order to estimate the sufficient size of a house, first of all women need to put up the family bed, because it always occupies the largest area in the house and often becomes a part of the structural framework supporting the main construction (Mr



Fig. 257: Ali Adayto, Ewa *woreda*: bed platform resting on four stones; the bed platform is erected before the house is built and thatched



Fig. 258: Ali Adayto, Ewa *woreda*: bed frame resting on stones; elements of the bed platform may be decorated with carving





Fig. 259: members of framework of *daboyta* embedded in the ground

Mohammed and his wife 21.02.2012, Mrs Moomina 12.04.2012). The house is literally built around the bed and other functions foreseen: *“The bed is a design basis of the house”* says Mr Mohammed’s wife and continues to explain: *“We start building with a bed - the metric area of the house depends on it”*. But not the whole bed needs to be erected at once: A far bed consist always of the underlying frame and the bed mat *olloyta*, but only the frame is relevant at this stage of building (Mrs Moomina and Mr Tibo 12.04.2012).

For the bed construction deep holes are dug in the ground with a spear or other pointed tool at about 20-30 cm in the four designated points, into which thick forked poles of about 5cm to 8cm diameter are driven. These need to be long enough, so that the ready frame is elevated at least 20-30cm above the ground, which should prevent the scorpions and other vermin to climb the bed at night (Mr Youssef 21.03.2012, Browning 9-10.02.2011). Two longitudinal and two transverse wooden beams are laid afterwards into the forked ends of the bed poles and the loose knots on the four corners are bound with sisal ropes to provide adequate rigidity and stability of a bed. On this basic structure a series of transverse branches is laid and then tied to it, which altogether forms a frame of a bed, on which a bed-mat *olloyta* with animal hide will be laid afterwards (Fig. 256).

The bed frame can alternatively rest on four stones brought under four corners instead of on forked poles dug into the ground, but then it may contribute only very little to the overall stability of the house. However, this kind of reinforcement is not necessarily

needed for a frame to be rigid and as we have managed to record in the visited houses, only in some cases women take advantage of it (Fig. 257).

It is only after the bed has been built that additional space for fireplace and food preparation, storage of food, kitchen utensils, and for other functions chosen according to the preferences and needs of the occupants of the house is taken into account. At this stage women decide also where the house entrance will be placed, according to which the layout of the house with position of the bed and other functions is set. If there is any other furniture of bigger size to be placed in the house, like a bench or a shelf for instance, it needs to be done also at this stage - firstly, because it also requires a sufficient amount of space and secondly, because the entrance opening of a finished house is too small to bring anything of a bigger size in. Hence all furniture needs to be in place before the erecting of the house armature begins (Mr Mohammed and his wife 22.02.2012)(Fig. 260).

After sufficient space is reserved for all pieces of furnishing, a circle on the ground is drawn by means of a rope and a stick, rotated at the central point, which marks the boundaries of the future frame (Mr Omar 22.02.2012). Alternatively, if there is no rope at hand, a long stick with marked radius of the intended house area is rotated at the center and the distance is marked at a number of points. When points are connected, they outline the approximate edge of the house (Mr Tibo and Mrs Moomina 12.04.2012)

The armature dome construction does not have a foundation in a



Fig. 260: Frame of an Afar house under construction: a frame is erected around the bed; source: Sebastian Morales 2011 (access 18.12.2016)

literal sense, but the members of its frame need to be restrained in the earth, so that this system may work at all. Depending on how compact the earth is, either a single small hole for each member is dug with use of a pointed tool (Mrs Moomina 12.04.2012), or a common shallow ditch of about 50cm is dug along the marked outline of the house (Browning 9-10.02.2011, Mr Mohammed and his wife 22.02.2012). As soon as it is ready, the woods are placed in the holes or arranged in the ditch - taking into account the position of the entrance opening - while the remaining room is filled up with earth, which is additionally compacted around each piece to firm its position (Mr Mohammed and his wife 22.02.2012) (Fig. 259). Prussin et al. (1997) mention, that if the ground is too compact and the nomads do not have strong enough tools, they may try to dig the ends of the bentwood only as deep into the ground as possible and place heavy stones around the frame to reinforce its structure from the outside. As long as they are not strained, the construction is prone to unfold and fall, but when the armature is finished and all members are tensioned and joined at knots, it works as a domed net and stones are enough to keep the shape of the house even if the bentwood is not driven deep into the ground (Prussin et al. 1997).

The number of single bent-poles and spacing between them varies according to the type and size of a house, as well as the season in which the house is erected (Mr Mohammed 22.02.2012) (see „Variations of dome construction, structural reinforcements“ page 143).

The entrance to the house, which position depends in most cases

on the main wind direction in particular season, is designated in first place - already while the woods are being restrained in the ground. The space for it left between the laths in a row is at least 35-50cm wide (Fig. 242). The position of the door determines the orientation of house axes and arrangement of longitudinal and transverse bracing, according to which the construction will proceed (see „Other means of reinforcing house structure“ page 151). Depending on the structural concept of the house, either pairs of single acacia members, or bundles of leading reinforced frame are successively bent over on the opposite sides of a house - till they converge at the top - and are tied together at the crest or beyond it (Browning 9-10.02.2011, Mrs Moomina 12.04.2012). First one series of parallel arches is erected in the longitudinal axis and after it is finished, a second series of arches perpendicular to the first one is erected in the same manner. Both laths of the secondary set of arches, which mark the entrance to a house, may be additionally reinforced with either another bentwood of a bigger diameter, or a bundle of thinner branches tied together (Prussin et al. 1997).

The number of longitudinal and transverse arches in a hemispherical *daboyta* is almost equal, so that it forms practically uniform structure of a net (Fig. 221). The framework of the elongated house on the other hand has clearly defined primary and secondary construction, which is built in specific order. The longitudinal arches, which number is seldom bigger than 10-12, are erected in first place. They serve as leading frame for the 30 to 50 transverse hemispherical arches *halawwa*, which make the





Fig. 261: framework members tied at intersection

load-bearing structure of the house. "After a coherent structure has been made, the longitudinal and transversal arches are connected by threading in a small cord (*maderto*) made of the bark of *Cordia sinensis* all along the longitudinal arch starting from the base" writes Oliver (1997:2016) (Fig. 239).

Elongated houses may have additional semicircular bracing running along their sides at the bottom, if the longitudinal arches are insufficient to provide stability in this direction (Fig. 238). In the hemispherical *daboyta* such bracing may accompany the entrance of the house on its both sides, replacing the main framework arch that would otherwise be placed here if there was no entrance on this side (Fig. 244).

If there is an additional internal support for the armature foreseen, it can be either installed just after the framework is finished, like it was a case of Mr Mohammed's house (22.02.2012) (Fig. 230), or just before the transverse arches are put up - if the supporting construction is much more elaborate (Faegre 1979). The elongated house visited in the Dodom area had three forked posts installed on the longitudinal axis of the house, on top of which a ridgepole was placed and lashed to its supports. The thin members of the secondary construction were bent over it, lashed together and finally tied to the ridgepole. One of the poles, at the rear side of the house, was additionally connected to the family bed, thanks to which the structural framework of a house gained more stability at the windward side of a house (Fig. 238).

Once the structure is finished, women will start to cover the armature with mats. On the hemispherical *daboyta*, but also on the one extended in height, they begin with the upper side-mats, starting from the entrance opening and encircling the house just about 0,5m to 1m above the ground. Mats are attached to the structural armature with strips of bark, cloth, or thongs, so that they stay in place and sway with the house when it's windy (Fig. 264). The lower part of a house is for now left open, because the mats, which will cover it, come in the last stage of the



Fig. 262: longitudinal and transverse arches tied at their intersection

process. After the upper side-mats are put in place, successive overlapping layers of remaining mats are laid towards the crest of the frame until last cover will be unrolled across the roof to finish the dome (Fig. 211), (Fig. 223), (Fig. 224), (Fig. 263). In the visited houses the first layer of mats would always be laid along the reinforced longitudinal arches, perpendicular to the entrance placed between the secondary arches (Mr Mohammed and his wife 22.02.2012, Mrs Moomina 12.04.2012) (Fig. 222). The entrance, *afa*, would be treated separately: a smaller mat would be fixed just above it, under the roof mat, and rolled up or down according to the time of day or need to close the opening (Fig. 211), (Fig. 243). Finally the lower part of the armature would be covered either with one long mat, or a series of smaller mats running along its sides, or even with any other lightweight material, which can be easily rolled up like e.g. plastic foil (Fig. 266), (Fig. 274), (Fig. 275). These mats are fixed to the actual cover from the outside, so that they can be completely removed or partly unwound in case the house needs ventilation. They are pinned to the remaining mats with thorn bushes and are easy to demount if such need occurs (Fig. 274).

The covering of an elongated house typology is treated differently. In the visited areas in the Dodom area mats were arranged in such a way, that they would overlap the house along its transverse arches (Fig. 210), (Fig. 236). The first layer of mats would be laid from the bottom of the arches on one side to their bottom on the other side, and the second layer would proceed in the perpendicular direction - along the longitudinal arches of the frame. There also, between two arches of the leading frame an entrance opening, *afa*, was left uncovered, which just like in the typical *daboyta* would have own mat rolled at its top - adjustable according to needs (Fig. 236). The second layer of mats would be placed beginning about 1m above the ground, so that the mats of the first layer could be easily unrolled to let the air flow through the house.

In the Middle Awash this principle of arrangement of the mats





Fig. 263: mats of the cover are arranged from the bottom to the top of the framework with sufficient overlap foreseen for each layer of mats

along the transverse arches would be repeated, with the difference, that the bottom and side part of the house would be additionally encircled with one big mat or a couple of smaller mats arranged vertically instead of mats laid longitudinally across the roof. Here also the *afa*, the opening, would be placed on the shorter side of a house, between the leading arches of a frame (Oliver 1997) (Fig. 209), (Fig. 237).

The oldest mats, most worn and therefore porous and less water resistant, are either put on the sides of the house, where they are not directly exposed to the sun radiation, or make the second layer of the cover to enhance its water and heat tightness. Newer mats tend to be placed on the top of the house, for the water does not enter the dense and still closed structure of the weaving that easily (Prussin et al. 1997).

Apart from being pinned or bound to the frame, mats may be

also stabilized on the house by means of bringing a sisal cord around them and fixing it to the frame (Faegre 1979). This is the same technique as often encountered in the thatched houses in the region, especially on its western border, where ropes keep the straw and grass material together (Fig. 235), (Fig. 265).

While covering is already on the frame, the house is yet to be finished. Lower parts of the framework still need to be clad with stones for additional stability and wind protection and encircled with thorn bush corral to prevent the animals from eating or destroying house parts (Browning 9-10.02.2011) (Fig. 265), (Fig. 266). While this is done, optional internal partitions are installed - either in form of mats on lightweight frame or wicker wood constructions made on the spot (Fig. 238). Three stones for the hearth are brought in and placed by the wall next to the door to provide natural light for coking and various utensils are hung on the armature around. The wall behind the hearth is



Fig. 264: thorns and ropes are used to tie mats to framework





Fig. 265: Ali Adayto, Ewa *woreda*: the cover of *daboyta* may be additionally bound with sisal rope, which keeps it in place when its windy; the house is encircled with a thorn bush to prevent the animals from destroying the mats



Fig. 266: Logya, Dubti *woreda*: the cover of *daboyta* may be complemented with modern materials, or ones found around

plastered, or covered with metal a sheet to prevent the wooden construction and mats from catching fire when it is lit. Last but not least, the bed mat, *olloyta*, is brought in and unrolled on the bed frame, cowhide and wooden pillows for men make the bedding complete (Mrs Moomina 12.04.2012, Browning 9-10.02.2011). The fire for cooking water for tea is lit, light smell of smoke fills up the air, the family may move in.



Fig. 267: Logya, Dubti *woreda*: mats gradually lose their flexibility and water tightness due to the sun radiation

## Maintenance



Fig. 268: Logya, Dubti *woreda*: mats gradually wear out while houses are disassembled and rebuilt many times throughout a year when families migrate between permanent dry season settlements and satellite compounds near the raining pastures

The nature of materials used for the construction of nomadic house makes them wear out naturally with time under the impact of various environmental factors. The room and functionality of a house, which are reconstructed each time the pastoralists move, stay always the same, but the frame surrounding it changes constantly. It is fixed and adjusted, single laths are removed, the others added; new mats arrive, the old ones are laid with bigger overlap as soon as their edges decay, or completely fall apart. All elements of the nomadic dwelling are gradually exchanged, just like the cells of a human body, though the house stays unchanged at the same time (Prussin et al. 1997). Mr Sale (21.02.2012), who told us the story of his family, explained laughingly that the oldest house in this compound was about twenty-two years old - it was built by his mother when they first came to Logya from Kori, after his father had died: *“One of these daboytas had to be already exchanged, because we moved it so many times before. These things, which I brought from Kori - we have lost all those things. We destroyed them because we travelled so many times at that time: from Kori to Asayita, from Asayita to Tibhari, so many times we changed the place with the same house”*.

Palm and reed mats wear out the soonest, because being part of a cover they are constantly exposed to various natural factors. Especially the solar radiation, rain and frequent sandstorms may damage the structure of palm mats very quickly, but also insects and animals may undermine their durability (Mr Sale 21.02.2012, Mr Mohammed 22.02.2012, Browning 11.03.2012, Mrs Moomina 12.04.2012). They gradually lose their flexibility while they dry out, turn dark brown, and eventually break and fall apart (Fig. 267), (Fig. 268). With each seasonal move older mats are moved from their previous strategic position on the top of the house, to the only supportive one - as additional coat complementing the main layers made of newer mats (Prussin et al. 1997, Oliver 2003). Palm and reed mat is also vulnerable to fire (Vellinga et al. 2007) and though precautions are taken to avoid spreading it, there is

always risk of cover catching fire as long as the fireplaces are installed inside of the houses (Browning 9-10.02.2011).

Depending on the quality of the produce, the mats are exchanged every one to three years (Mrs Zahara 12.04.2012). Their cost on the market is moderate to relatively high: about 100 ETB for one finished mat (Mr Sale 21.02.2012) to 300 ETB for raw material for one mat (Mr Mohammed and his wife 22.02.2012). But taking into account how many of them are needed to cover the whole house, the amount paid for exchanging a minimum of 15 mats reaches from 1500 ETB up to 4500 ETB every one to two years. Not mentioning the houses of a bigger size that require up to twice as many mats for their cover.

But the armature frame alone is also prone to decay due to the vermin living in the ground like the white ant, which eats the construction from the bottom, or other insects feeding on the woods. Though not as often, as the mats, the armature needs to be also exchanged every ten to twenty years, depending on the type of tree used for construction and the maintenance (Mr Sale 21.02.2012, Browning 9-10.02.2011, Mrs Moomina 12.04.2012, Prussin et al. 1997).

The actual cost of erecting an ordinary *daboyta* - and it amounts in practice only to mats, because wood for frame is free to harvest on own land - is about 3000 ETB (Browning 9-10.02.2012). These pastoralists, who cannot afford exchanging worn out materials for the ones of the similar quality, replace the mats with other materials found near the urban centers like foils, cardboard, metal sheeting, or tarps (Prussin et al. 1997, Browning 11.03.2012) (Fig. 227), (Fig. 266). Although 3000 ETB is a high cost to pay for a house, in comparison to other building techniques found in the region, which are additionally not possible to transport on camels and donkeys (Fig. 218), (Fig. 219), (Fig. 220), it is anyway the least expensive building technique due to the common availability of the raw materials and traditional knowledge of processing them which people still possess (Browning 11.03.2012, Mr Sale 21.02.2012).





Fig. 269: insulating qualities of palm mats allow to keep the inside of the tent relatively warm during cold nights and cool during the heat of the day

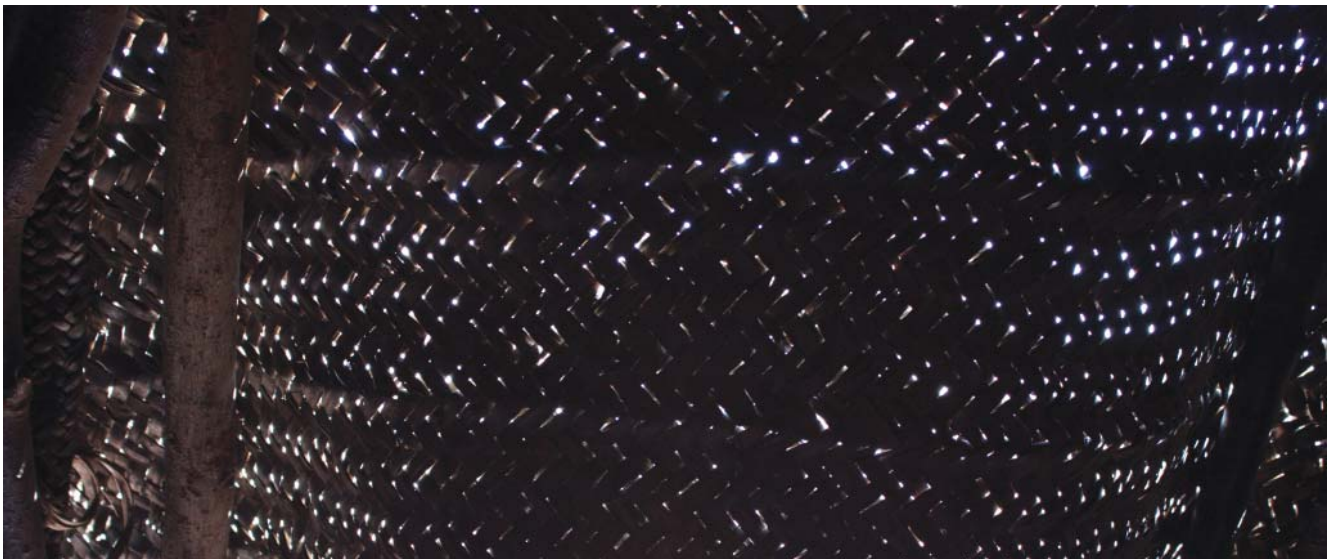


Fig. 270: the porous structure of palm mats allows for sufficient micro-ventilation

## ***Daboyta* and environment: building physics**

An ingenious adaptation of an Afar house to nomadic lifestyle is not only visible in the lightweight and portable armature system, which can be easily demounted and rebuilt within hours. It is also reflected in how easily it can be adjusted to the climatic circumstances and current needs of the inhabitants in response to them, without making significant changes within the structure. And it is only when one takes a closer look at it that the fine details proving its success in the given environment become apparent. How pastoralist manage the diurnal temperature shifts, strong winds bringing either cold or hot air or even sandstorms, how they shelter themselves from the strong sun radiation, make their houses waterproof and how they improve living comfort during hot periods - these are the challenges the dwelling has to meet.

### *Temperature regulation*

The cover of the tent is the only barrier between the outside atmospheric conditions and the climate inside of the house, but it is a very efficient one. Because it consists of a lightweight porous material of a plant origin, it provides a natural insulation between the temperature inside and outside, so that the diurnal temperature fluctuations especially in the cold dry period are bearable. The insulating cover allows maintaining warmer atmosphere inside during the cold of the nights if the cover is tightly closed and relative coolness in the heat of the days if additional ventilation techniques are applied (Prussin et al. 1997) (Fig. 269), (Fig. 270).

Mats provide also shadow from the burning sun and place to rest during the hottest hours of the day: *"The mat house is pleasant*



to live in. Its semidarkness, pierced by a few gleams of light sliding through the holes of the mats, is a respite from the harsh daylight" writes Prussin et al. (1997:114). The porosity of the mats and their woven structure allows constant ventilation on a micro-scale, which – when paired with partly rolling up mats that are close to the ground and allowing air circulation - maintains relative coolness inside of the house even if the temperature outside is high (Faegre 1979, Prussin et al. 1997, Mrs Moomina 12.04.2012, Mr Mohammed and his wife 22.02.2012).

When it rains, mats become relatively heavy because some of the water is absorbed in the pores between the threads. The framework needs to be prepared for bearing additional weight and hence specific reinforcements are introduced within it (see „Variations of dome construction, structural reinforcements“ page 143). But the same woven structure of the mats allows the rainwater to drain from its surface relatively fast to the sides, leaving the entrance of the house relatively dry thank to their particular arrangement on the house. At the same time this porosity causes additional cooling effect while the water absorbed between the woven palm leaves evaporates (Prussin et al. 1997). The same technique is used for keeping drinking water cool in containers or skin bags: they are wrapped in cloth, which is now and then soaked in water, and while the water evaporates, it keeps the contents of the containers or skin bags cool (Dodoma area 18.04.2012, Mrs Moomina 12.04.2012) (Fig. 347).

### *Water tightness, impregnation*

The natural texture of the palm mat weaving and the fibrous structure of the palm leaves allow leading off the raining water naturally along its threads. Because mats are very compactly woven and arranged in multiple overlapping layers, the cover of the houses is to a great extent impermeable to water (Mrs Moomina 12.04.2012, Faegre 1979).

Yet, in some rural areas, like the ones in Ewa or Chifra, there is a ritual of smoking of the inside of a house early in the morning while preparing tea, which should additionally enhance the water tightness of the mats. If it rains and the cover of the house is unintentionally touched from the inside, it may leak at this point, but otherwise it provides an excellent tightness.

The smoke goes up and through the porous texture of the mats, while the soot closes the holes sealing the cover so that it completely waterproof (Browning 9-10.02.2011, Mrs Moomina 12.04.2012). The mats and the framework become black with time and start to gleam, but their structure is not weakened, but rather the opposite is the case - the soot makes them more durable when it rains, but also deterrent to vermin like ants and other insects which often eat up the members of the framework or the mats (Browning 9-10.02.2011, Faegre 1979, Denyer 1978) (Fig. 271), (Fig. 272).

Though such smoking of the inside of a house may have benefits for its durability, it definitely does not serve well the health of its inhabitants. The lack of a proper ventilation paired with staying for a longer time in a smoked environment leads to problems with the respiratory system, which is very frequent among the

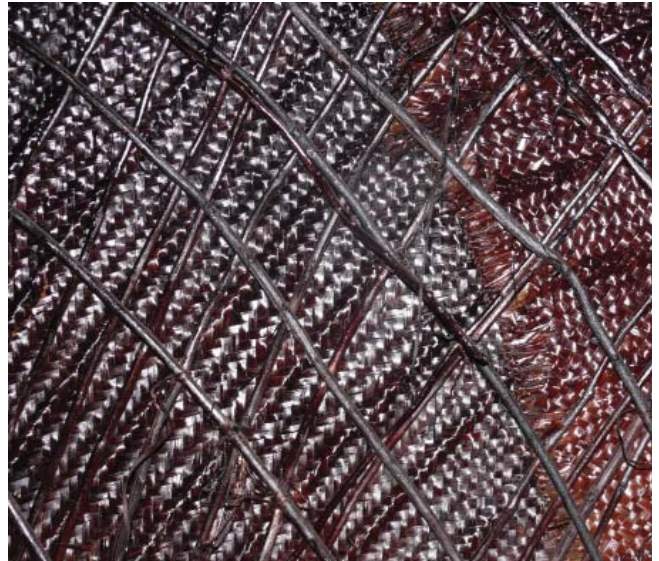


Fig. 271: armature and mats impregnated with soot



Fig. 272: when houses are smoked, the atmosphere inside is pungent



nomadic rural societies in the Afar region. The traditional belief, that a house and its inhabitants should be smoked whenever an illness comes upon them instead of being better ventilated, makes the situation work strongly to their disadvantage and such habits are difficult to eliminate (Browning 9-10.02.2011, Meir 2004).

### *Wind direction, entrance to the house*

The cover of the house plays also an important role in sheltering from the strong winds at the turn of the seasons. We have already discussed in the chapter on the settlements the changing size of a house according to the intensity of winds in particular area (see „Small and scattered: central-eastern Afar Region: Elidar-, Dubti-, Kori woreda; Alta ecology“ page 81). Low pitched houses, for example, would be found more often on the barren planes like in Elidar or Kori *woredas*, where wind finds no other obstacles on its way and houses could be otherwise too easily blown off if their dimensions were too big. Yet, not only adjusting geometry and size of the whole house lessens the impact of winds, but also simple repositioning and narrowing of the house entrance can bring sufficient improvement for the stability of the house and the comfort of living for its inhabitants. Such intervention is commonly put in practice by nomadic builders in response to the changing pattern of the prevailing wind directions during successive seasons of the year (Prussin et al. 1997). Openings of the houses are positioned at the opposite side to the direction from which the wind blows, so that in front of the house there is still sheltered space for daily activities available. This prevents also the rain or sandstorms from penetrating the house directly through its entrance (Browning 9-10.02.2011, Mrs Moomina 12.04.2012, Mr Mohammed and his wife 22.02.2012) (Fig. 226), (Fig. 228), (Fig. 230), (Fig. 238).

When this measure is additionally paired with weighting down the construction with utensils, or anchoring it to bed or other house furnishings on the windward side of a house, it provides enough resistance against strong winds and sandstorms (Prussin et al. 1997).

Winds coming from the northeast direction are typical for the *giilal* - the cold dry period (Mr Tibo 12.04.2012, Rettberg 2009, Van Bodegraven 2006). Before it starts the house is carefully prepared, so that especially cold night air does not enter the house through the cover and the openings. The cover on the windward side is complemented with an additional layer of mats, cloth or animal skins hung inside to provide the maximum air tightness (Prussin et al. 1997). The entrance is designed smaller, only as big as to allow the house inhabitants to slip inside, and positioned on the northwest- to ideally southwest side of the house - the leeward side of the house. It is carefully closed at night with mats or wooden boards (Browning 9-10.02.2011, Mr Sale 21.02.2012, Mr Mohammed and his wife 22.02.2012, Mrs Moomina 12.04.2012).

This principle changes with the beginning of the *sugum* - short

reining period from March to April (spring rains), through *hagay* - hot and dry period from May to June and towards the main hot raining period in summer - *karma* from July to August/September (Mr Tibo 12.04.2012, Rettberg 2009, Prussin et al. 1997, Denyer 1978). During these periods the pattern of air movement shifts, bringing sandstorms in the early spring months, which are then followed with fierce hot winds and rains coming from the southwest direction. The sandstorms and tornadoes turn to be much more frequent and hence also more dangerous for people, animals and dwellings than the rains (Prussin et al. 1997; Mr Tibo 12.04.2012; Browning, Little 2008), which is the reason why in the raining-season-settlements houses are built much lower to the ground and tend to have a more rounded shape. This allows also the water to drain much faster from the house surface (Prussin, et al. 1997).

The orientation of the house entrance is accordingly adapted to the changed wind conditions and the house is literally turned, so



Fig. 273: Logya, Dubti *woreda*: entrances facing northwest direction at the beginning of a hot season





Fig. 274: Logya, Dubti *woreda*: lower side mats are rolled up to allow air movement through *daboyta*



Fig. 275: Logya, Dubti *woreda*: lower part of *daboyta* is uncovered so that the air can enter the house; containers with water are placed next to it, so that the water may be kept cool





Fig. 276: air movement lessens the impact of heat and makes the atmosphere in the house more comfortable

that its entrance and the openings can be found on the northeast side of the hut (Mr Mohammed, 22nd Feb. 2012). This protects it from the very hot, dry and sandy wind, *haahay*, which blows from May to June (Mr Sale 21.02.2012), by many our interviewees compared to a fan-forced oven bringing masses of gritty sand (Mr Youssef 21.03.2012; Browning, Little 2008).

Replacing the house entrance requires the whole structure to be rebuilt - it cannot be achieved by merely changing the arrangement of the mats of its cover. It is not as simple as to just "close one side and open the other" says the wife of Mr Mohammed (22.02.2012) and explains further: "We take all the sticks out ... because the design of this house requires it". Because the alignment of the primary and secondary arches plays here an important role, the whole construction needs to be literally turned at least about 45 degrees against the direction of the wind, so that it can accordingly respond to its loads. The process of rebuilding of the house takes place while the family changes their residence from dry period camp to the one in the raining areas. Within more sedentary communities it takes place while the seasons shift, before the impact of the summer winds becomes harmful. The women of Mr Mohammed's wife's community needed one day to rebuild each of the houses in their compound in response to the changed wind direction (22.02.2012).

The wind directions, though predominant in some parts of the Horn of Africa, show locally some aberrations, or have not that much impact on positioning the entrances as the other factors do (Prussin et al. 1997). In the visited Ewa settlements at the end of *giilal* - the cold period, the alignment of most of the houses with the entrances faced the direction of the rising sun, the Southeast, though the winds in this time of year blew predominantly from the northeast direction (Fig. 291), (Fig. 296). The intention of the builders was to harvest as much sun as possible in the chill of morning hours, for performing daily duties in front of the houses. The entrances to the huts were at the same time kept very small, so that the cold night air would not enter the house at night (Villagers Ali Adayto 9-10.02.2011). In the same settlement



Fig. 277: ventilation opening by the bed at the rear side of *daboyta*, opened in the morning and closed at night

some houses were placed near the perimeter of the compound enclosure, with the house opening facing its center - disregarding the wind direction and also against the rising sun. The inhabitants of these compounds aimed at having more control over their herd by means of making the door of the houses face the animal pens, so that they could see and hear them better at night and react faster in case something happened (Villagers Ali Adayto 9-10.02.2011).

Only once did we obtain information, that a house entrance would always face the north direction regardless of the seasons - the direction of Mecca (Mrs Zahara 12.04.2012). But this settlement was placed near a natural bush-forest, so perhaps this was sheltering the house from the winds of the cold period. When it comes to the hot period, positioning the door on the north would be anyway of a great advantage for the house inhabitants, because the wind at that time of year blows from the Southeast (Fig. 222).

### *Ventilation, air exchange*

In some circumstances, however, a constant movement of the air through a house may be desired and even triggered on purpose to enhance the living comfort inside of it. On the days of relative air stillness, when sun burns and scarcely any shade can be found around, houses provide both coolness and shadow if their cover is slightly adjusted. Mats encircling the lower part of the construction - the same ones that are placed on the house in the last order - may be now partially rolled on two sides, or even removed completely to allow airflow through a house (Mr Mohammed's wife 22.02.2012, Mr Tibo 12.04.2012, Oliver 2003) (Fig. 274) to (Fig. 277). Through the members of uncovered framework light enters a house - this is a window of a nomadic house (Browning 9-10.02.2011, Mrs Moomina 12.04.2012). The mats are again closed or reattached to a frame in the evening to prevent cold night air to enter the house (Mr Mohammed 22.02.2012).

## Migrating to raining pastures



Fig. 278: both dromedaries and donkeys are harnessed for transporting shelters, food and all kinds of household equipment

Before the seasonal shift from dry to raining time of year brings spring rains, the pastures start to slowly diminish and pastoralist may begin preparations for another migration venture (Browning, Little 2008, Mr Tibo 12.04.2012). The range of movement and direction in which a family and their animals should next proceed, are discussed by the clan elders *idoola*, who collect necessary information from various sources before they settle the case. Not only is here exchanging news *daagu* with the neighbors or further clan members about the situation in the other areas of a great importance (Mr Tibo 12.04.2012), but also the ability to predict rainfalls in the upcoming season. There are traditional ways of weather forecasting, in particular estimating the probability of rainfall events or upcoming drought, which some rural communities are still able to perform to some extent on the basis of examining indicator plant species or particular astral alignment and environmental events at specific points in time (Eriksen, Marin 2011, Browning 11.03.2012). If these are not available, often groups of scouts are sent to the adjacent areas

to observe the quality and capacity of rangelands after latest rainfall, which helps to estimate the situation (Eriksen, Marin 2011, Prussin et al 1997).

Given all the information, they arrive at a decision and the arrangements may begin. Women are responsible for organizing the striking of the camp and transporting the houses and possessions to the chosen area, whereas men take over guiding the herd of camels and remaining dry stock to the new grasslands. Because the wellbeing of animals is of the primary importance, they may proceed to the new pastures long before their camp and family follow (Villagers Ali Adayto 9-10.02.2011).

On the day of departure, after the family had a morning tea and a meal, the women will start demounting the tents and group all the house belongings according to which animal is going to carry it. The striking of a tent proceeds in an opposite order it was built. The bed mat *olloyta* is taken out of the house in first place, rolled up and tied together; then the cover mats are unfastened





Fig. 279: Ali Adayto, Ewa woreda: an extended family *daala* on their way to the raining season encampment



Fig. 280: Logya, Dubti woreda: elements of *daboyta*, which are left behind are packed and covered with foils, so that they stay protected

and likewise rolled up. Afterwards, the tying of framework is undone - if a whole framework is transported - and members *halawwa* are taken out of the ground, gathered in bundles and tied together (Browning 9-10.02.2011) (Fig. 248), (Fig. 280). If the women have certainty, that bentwood will be also available in the new destination, they may as well choose to carry only the cover with them and leave both the house armature and the bed frame in the dry period compound (Fig. 221), (Fig. 241), (Fig. 260). "You are seeing it in lots of places", explains Valerie Browning (11.03.2012), "just a framework standing and they are taking the mats off. They are taking the mats off, to go somewhere else. When they are living somewhere else, they live there a shorter time and so they don't build the whole house structure, they build much smaller version". So they may actually take out only some members of the former house frame and rebuilt it in the new place, but this time of a smaller size, or collect the new bentwood as soon as they reach their goal destination (Villagers Ali Adayto 9-10.02.211, Mrs Moomina 12.04.2012, Mrs Zahara 12.04.2012, Faegre 1979, Browning 11.03.2012) (Fig. 241).

Heavy items and pieces of furniture, bed- and tent frame and alternatively some mats, which are not going to be taken with to the new camp, are grouped in one place, tied together and covered with foil or a mat to stay protected throughout the season (Mrs Moomina 12.04.2012, Mrs Zahara 12.04.2012). The communities in Ewa and Chifra woreda leave also their grass huts behind, which along with compound- and animal enclosures will be waiting for their return at the begin of the dry season (Villagers Ali Adayto 9-10.02.2011, Browning 11.03.2012).

The underlying essence of nomadic architecture lies in the possibility to demount and transport it. Prussin et al. (1997:44) emphasizes that the interface between the "transport technology and the building technology" relies on meeting similar challenges that both of them pose and involves analogous planning and constructing activities, which are repeated in specific time intervals according to the season and needs. The "balance,



Fig. 281: Ali Adayto, Ewa woreda: a family with their animals on the way to the raining season settlement

*distribution of forces (i.e. weight or wind), movement..., rigidity*” of a structure (Prussin et al. 1997: 47) need to be taken into account while erecting both a house and a pack-saddle used for transport. Moreover they involve applying similar natural resources available in specific environment and circumstances. In this regard transforming the primary construction of a house into a sophisticated saddle structure or even palanquin that is again rebuilt into a house after arriving at a new campsite seems to be a very logical solution in the given circumstances and it is commonly practiced among various nomadic societies (Prussin et al. 1997).

Although Afar nomads use some elements of the house to construct the saddles, unlike among other nomads observed by Prussin et al. (1997), these are intended primarily for transporting of house components and various household items, including food and water. Lightweight litters placed on the back of a camel, in which a person may travel, would not be encountered here. Instead simple pack saddles are constructed and people proceed to their new camp on foot (Villagers Ali Adayto 9-10.02.2011) (Fig. 279), (Fig. 281).

Both dromedary and donkeys are harnessed for transporting the household elements, but they carry different loads according to their physical possibilities (Fig. 278), (Fig. 286), (Fig. 287). Special saddles need to be erected for camels, which consider morphological characteristics of their body and in particular their single hump, as well as the way they can be burdened according to it. The saddle needs to be constructed in a way that it avoids putting pressure directly on the hump, but instead it distributes the loads to the rib cage and further on the front legs and behind legs of an animal. Moreover, the loads need to be balanced on both sides with the emphasis on the front part of an animal, whose center of gravity is placed on its withers (Prussin et al. 1997). This can be achieved when a total of four pieces of wood are placed on both sides of a dromedary diagonally (two pieces on each side), so that they cross in two points at the top: in front of- and behind the hump, as well as in two points

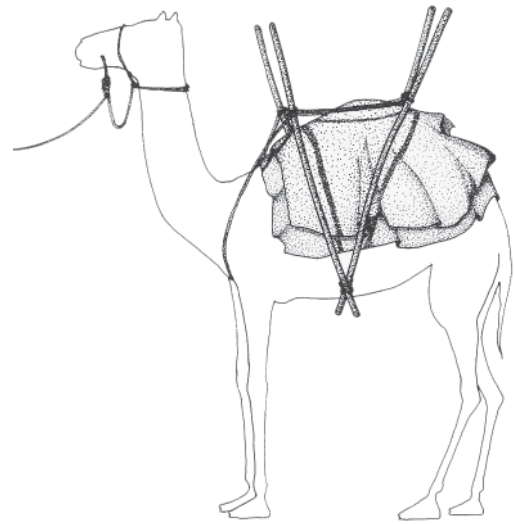


Fig. 282: Pack saddle of Somali pastoralists, which Afar pastoralists also use; view from the side; Prussin et al. 1997:48

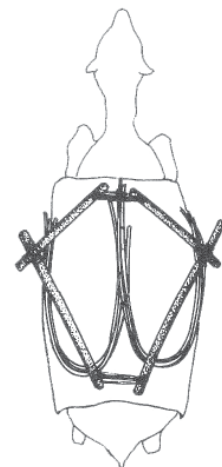
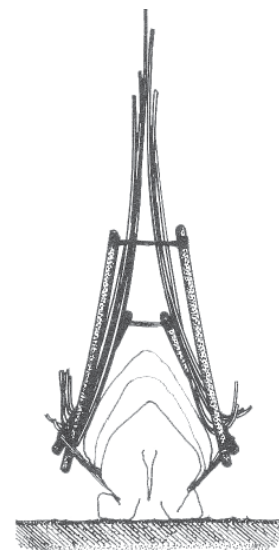


Fig. 283: Pack saddle made of straight poles with arches of tent framework fixed to it; view from the back and top; Prussin et al. 1997:47





Fig. 284: A dromedary carrying a saddle, to which bundles of bentwood *halawwa* are tied; in between other elements of the dwelling are placed and fixed



Fig. 285: The pack saddle is only then stable when it is weighted symmetrically on both sides of an animal



beneath its belly (Fig. 282), (Fig. 283). Afar utilize for this purpose long poles used usually for bed frame because of their bigger diameter and sufficient length. When these poles are tightened at the cross points with ropes or throngs, and stabilized with a rope underneath the belly of an animal, four rigid triangles are created and the whole saddle takes virtually form of a stable tetrahedron straddling the animal. Similar saddles are installed on the donkeys (Villagers Ali Adayto 9-10.02.2011, Prussin et al. 1997).

The dromedary, which is to carry the house, has his back covered in first place with skins or cloth, so that the saddle does not chafe his skin while moving. As soon as the saddle is installed and fixed in place, women begin to load and tie the items to it. Such saddle allows distributing weight equally only if it is loaded evenly on both sides, so the items and elements of frame need to be placed symmetrically (Fig. 285). First, two bundles of tent framework members *halawwa* are installed on both sides of the saddle and tied to it in two points: at the bottom, where the saddle poles cross, and at the top to the rear diagonal pole (Fig. 278), (Fig. 284). When additionally both bundles are joined together with rope in half their length and at their top where they meet, they increase the stability of the whole system. If observed from the side, the bentwood members that rise high from the dromedary's back resemble sails of a ship moving slowly through the deserts and savannahs (Villagers Ali Adayto 9-10.02.2012) (Fig. 279), (Fig. 286). But it is not the only way the *halawwa* can be transported: the bundles of bentwood may be also laid horizontally and fixed to the saddle at two horizontal knots - not pointing to the top, but rather to the back like folded wings of a bird (Fig. 287).

Only after tent members are put in place, mats are secured on both sides between the poles of the saddle and bentwood rafters. To achieve balance, the heavy *olloyta* is placed on one side and on the other side the rolled cover palm-mats are installed. On top of that remaining elements of the bedding may come, which are tied tightly to the saddle (Villagers Ali Adayto 9-10.02.2011, Mrs Moomina 12.04.2012). The remaining animals are loaded with various kitchen utensils, bedding, remaining personal items, skin containers filled with water and sacks with sorghum (Villagers Ali Adayto 9-10.02.2011).

On their way to the new campsite the caravan may make intermediate stops, because the road may take up to a couple of days. As soon as they arrive, the women begin unpacking the saddles and prepare the site for building the houses in the new spot. But this time it will be built much smaller than in the main camp, because the family may soon have to move further following their dry herds (Browning 9-10.02.2011, Mrs Moomina 12.04.2012).



Fig. 286: *halawwa* pointing up to the sky, tied to the saddle in two points and at the top with the bundle on the opposite side



Fig. 287: Amibara *woreda*: dromedary on its way to new encampment



# PERMANENT GRASS HUT



Fig. 288: Gubiyra, Yalo *woreda*: a free standing *grass hut* of a newly married couple

## Principles of structure: static system, size and form, variations and reinforcements

Whether it is a freestanding house for a newly married couple (Gubiyra, 11.03.2012) (Fig. 288), or an extension to a living space of a bigger family to receive their guests or relatives (Ali Adayto 9-10.02.2011, Oliver 1997) (Fig. 290), a *grass hut* differs considerably with its construction principles and used materials from a *daboyta*. This results from different expectations that users have towards the performance and functionality of both dwelling typologies, making one of them demountable- so that it can be taken on the migration ventures (*daboyta*)- and the other permanent (*grass hut*)- for enhancing their living comfort when they return to the dry period compounds. Depending on the desired function and whether the *grass hut* is of a temporary or permanent character (a temporary house is e.g. then erected when a family plans to build soon a bigger house and a temporary shelter is needed for the meantime), its construction

and fixings may show different levels of elaboration, allowing even decorations to some extent if the house is intended for permanent use. Also the extent to which a family migrates may define the size of the house: more provisional and smaller versions are erected there, where a bigger range of movement is expected, or the opposite- if a family leads a rather settled life, houses of much bigger sizes may be built (Oliver 1997, Browning 11.03.2012) (Fig. 294).

Structurally seen the construction of a *grass hut* frame consists of a single set of bentwood members of the same length, which are arranged in a radial manner: on the bottom embedded in the ground and at the top gathered in a central point, so that they form a dome (Denyer 1978) (Fig. 289), (Fig. 291), (Fig. 296). The silhouette of this typology nears either a hemisphere (Fig. 288),

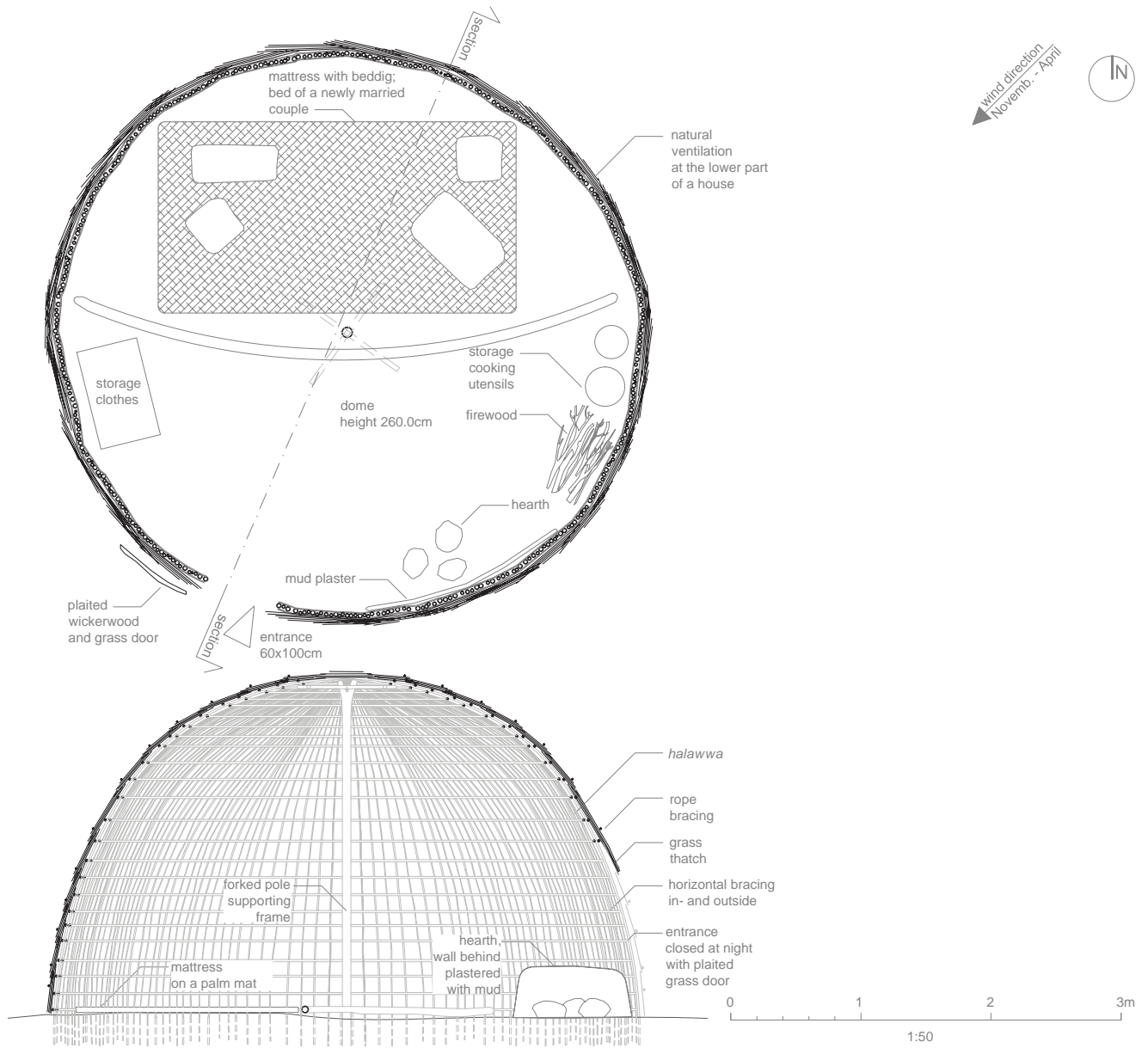


Fig. 289: Gubiyra, Yalo woreda: free standing grass hut with additional supporting post inside

(Fig. 290), (Fig. 292), or it is extended in height like it is a case with some mobile *daboytas* (Fig. 197), (Fig. 213), (Fig. 294). But instead of a second row of perpendicular transverse arches to stabilize the structure like in the portable armature, a horizontal bracing in form of rings is introduced here (Fig. 293), (Fig. 298). Each element of bracing consists of two thin pieces of flexible bentwood placed on the inner- and the outer side of the primary framework and bound together with straps of bark or cloth, so that the vertical members are immobilized between them (Fig. 308). These horizontal rings are arranged from the bottom to the top of the hut, every 20-30cm, giving it the desired shape and stability. In a less elaborate version, a ring of single members may be placed either only on the outside or inside of the primary construction, but it is found rather in the frameworks of a smaller size (Fig. 302). Houses bigger in size require double bracing to ensure sufficient stability and wind resistance. Because this construction is not meant for transport, the number of vertical members is much bigger than in the mobile

armatures and so is the number of knots that are made with the horizontal bracing (Fig. 301). These enhance the overall stability of the construction and its ability to carry heavier loads. Also the cover is adapted to the permanent function, which the *grass hut* serves: the thatch brought onto a house in many layers replaces prefabricated mats- also because these are much more expensive than the natural grass cover.

Unlike the shape of typical *daboytas*, proportions of a *grass hut* are rarely close to a hemisphere. The houses encountered in the western parts of the Region had the radius of their floor always noticeably smaller than their height, which made them resemble an extended dome- a shape most suitable for the effective distribution of dead loads (Oliver 2003) (Fig. 289), (Fig. 291), (Fig. 296). This proportion would be always considered while building, regardless of the size of a framework and construction nuances introduced in the *grass huts* by particular communities. It would also be applied in the mat dwellings accompanying the *grass*





Fig. 290: Ali Adayto, Ewa woreda: grass hut accompanying mobile *daboyta*

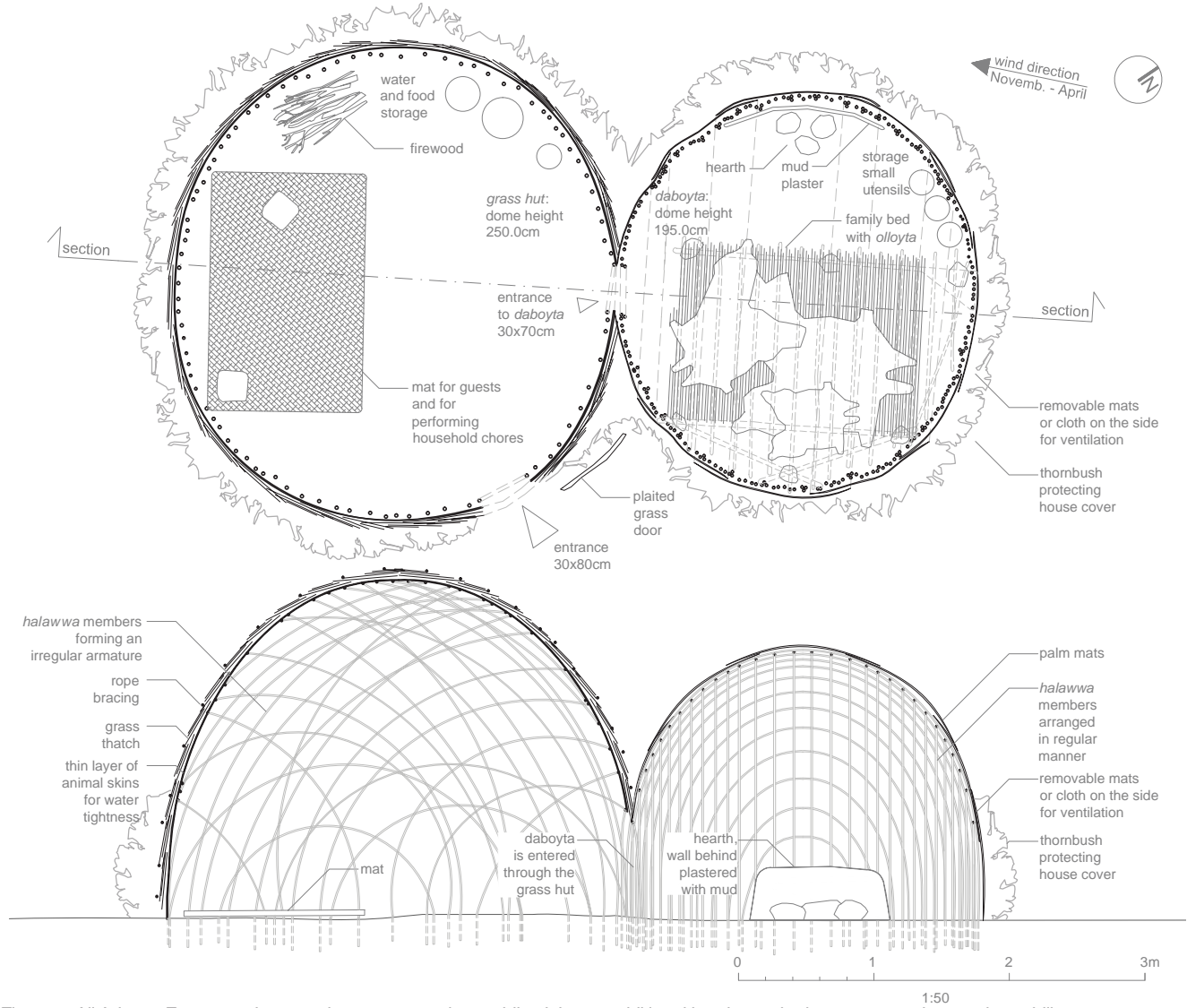


Fig. 291: Ali Adayto, Ewa woreda: grass hut accompanying mobile *daboyta*; additional bracing at the bottom part enhances its stability





Fig. 292: Ali Adayto, Ewa woreda: silhouettes of some *grass huts* may near a hemisphere, though structures extended in height are more common

*huts* (see „Variations of dome construction, structural reinforcements“ page 143) (Fig. 197).

The smallest of these structures recorded during our field studies was a *grass hut* in a dry period settlement in Ali Adayto (9-10.02.2011). It's diameter measured about 3,1m and its height as much as 2,55m. However, the average size of the permanent huts found here was bigger and almost the same as the average size of the mobile dwellings *daboytas* found throughout the region: it amounted to 3,5-4m in diameter and 2,2-2,5m in height (Ali Adayto 9-10.02.2011; Chifra 11.03.2012). These *grass huts* were mostly combined with mat tents and served as *guest-houses* for the visitors, or an extension of a living space for the nuclear family *buda*, which would accommodate extra beds for the husband and sons or for the children. The biggest permanent *grass hut* we managed to encounter had a ground floor diameter

of about 8m and height reaching about 5m (Alele Subula 11.03.2012) (Fig. 294). The visited *grass hut* close to the town in Gubiyra measured in comparison to it only 4,5m in diameter and 2,6m in height, but it was still bigger than the average-sized permanent houses encountered in the western *woredas*. The female inhabitants of this compound assured us it was a rather small version of a *grass hut* and that they could build it of a much bigger size if it was to accommodate the whole family instead of only a newly married couple (Female inhabitants of compound near Gubiyra 11.03.2012).

Variations within this permanent typology do not amount only to the size and proportions of the silhouette of the structure, but also to the structural principles of the frame. The kind of framework with primary members of same length arranged concentrically



Fig. 293: Awash Fentale woreda: framework of a *grass hut* consists of vertical members gathered at the crest and horizontal bracing



and stabilized by horizontal bracing is not the only type of armature applied in the permanent typologies, though it is the prevailing one. In Ali Adayto some armatures of *grass huts* built next to *daboytas* resembled the structures of the very mat tents. The longitudinal and transverse arches were partly arranged in hoops declining in height towards the perimeter of the house, but they did not meet at the right angle. Instead they were arranged in a rather random manner, so that the construction seemed fairly chaotic (Fig. 297). Moreover the branches used to construct the frame had a relatively small diameter, which altogether gave an impression of a rather unstable system. Yet, both ends of each of the arches were embedded in the ground and bound together at the intersections, which allowed the framework to act the same way in which the typical *daboyta* framework acts under occurring wind loads.

The application of such an irregular framework surprises however, if one takes into account the rather considerable size of one of the houses in which it was recorded. With the diameter of 3,45m and height of about 2,5m in the exemplary house, the applied

construction seemed to be insufficient to withstand the wind loads and carry weight of the thatch, especially in the rain. Perhaps it did manage to keep stability only because it was somehow leaning on the adjoining family *daboyta*, whose construction was very regular and well balanced, and its silhouette was clearly extended in height (ratio of the radius to height amounted to 1:1,5).

In remaining cases houses bigger in size may require additional reinforcements of the structure, similar to the ones found in the mobile tents. Introducing an additional supporting post in the middle, so that the roof does not collapse, is one of such interventions. The house close to Gubiyra had a forked stout post of a 10cm diameter positioned in its center, so that it could support two crossed beams connected to the last element of horizontal bracing (Fig. 299). To some extent it reminded of the roof construction of the *sar bet*, Amharic house standing nearby, with the difference that its members were directly embedded in the ground without being supported by a palisade of wall like it



Fig. 294: Alele Subula, Ewa *woreda*: the size of some *grass huts* may reach even up to 7-8m in diameter and 5 m in height





Fig. 295: Ali Adayto, Ewa woreda: grass hut and daboyta are joined with a middle structure, from which both can be separately entered

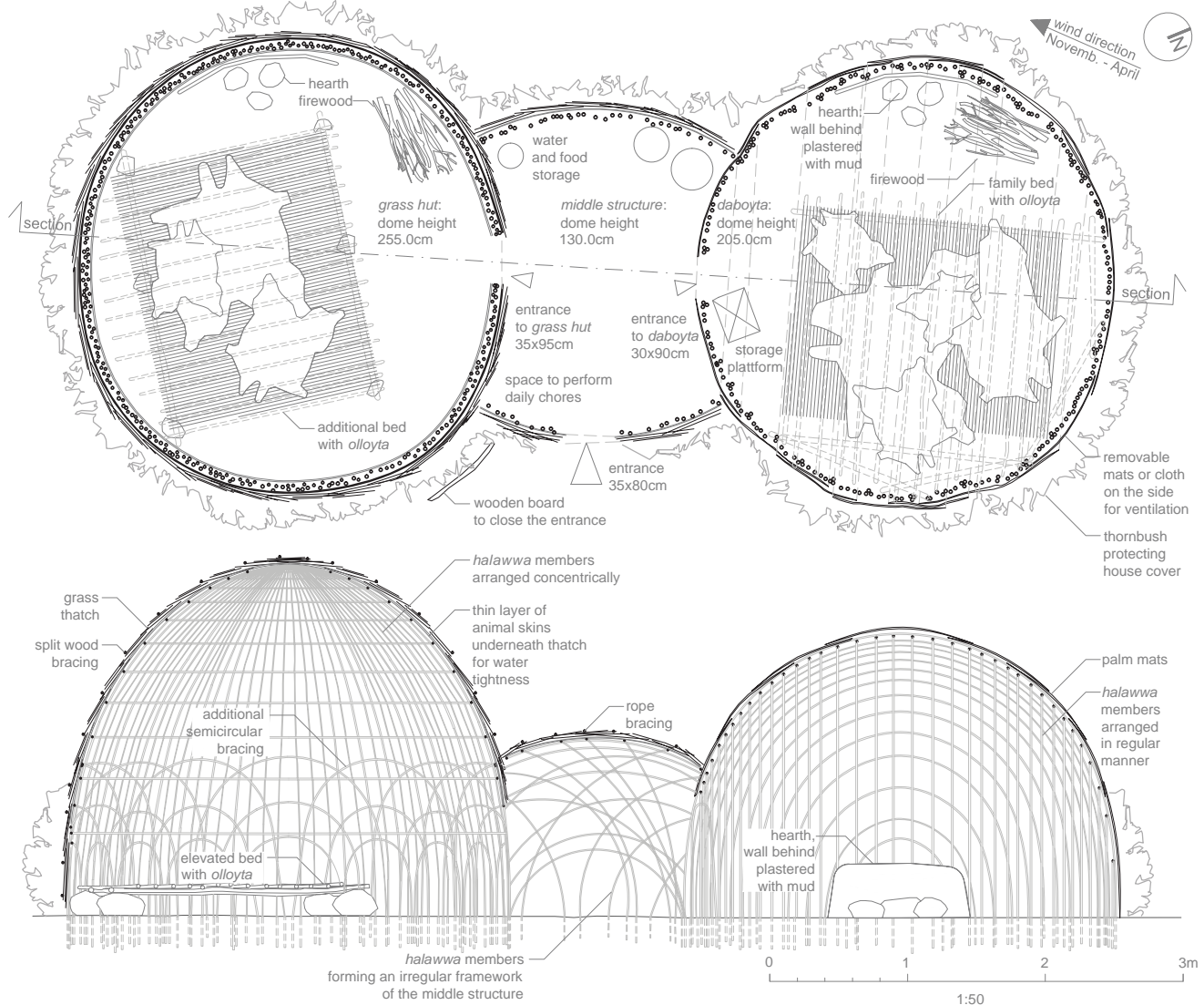


Fig. 296: Ali Adayto, Ewa woreda: grass hut and daboyta are joined with a middle structure, from which both can be separately entered





Fig. 297: Ali Adayto, Ewa *woreda*: chaotic arrangement of two exemplary *grass hut* frameworks



Fig. 298: Gubiya, Yalo *woreda*: regular framework of vertical members stabilized with horizontal bracing

was a case in *sar bet*. They were also tensioned into form of arches unlike the straight roof laths of the Amharic house (Fig. 217).

Not only does the presence of the central supporting post enhance stability of the frame, but it also allows constructing houses of much bigger dimensions like the ones encountered in Ewa and Chifra (10-11.03.2012).

Additional stability of the construction can be also achieved, when an additional bracing of arches is introduced, which runs around the perimeter of the house at its bottom and is joined with the vertical members of the framework (Fig. 300). One of the permanent houses visited in Ali Adayto (9-10.02.2011) had such bracing set up at the bottom of the frame, which reached about 60cm above the ground. The horizontal circular reinforcements started just above this bottom bracing and were placed every 20-30cm towards the top of the structure. The members were finally gathered at the top and tied together with straps of cloth and leather.

*Grass huts* very often occur together with *daboytas*, either directly adjoining them, or connected through an additional intermediate structure, which is similarly to a *grass hut* thatched (Fig. 214), (Fig. 295), (Fig. 296). If such additional structure is erected, the entrance to both *daboyta* and *grass hut* leads through this structure. If *grass hut* adjoins directly the mobile tent, the main entrance is placed in the frame of the permanent hut and the *daboyta* is reached through an opening mounted inside the *grass hut* (Fig. 290), (Fig. 291). Though it occurs less frequently, also freestanding permanent structures are encountered in the region, like e.g. the mentioned house in Gubiya (10-11.03.2012) (Fig. 288), (Fig. 289). Their framework is carefully erected and much stronger than the framework of the permanent structures built in tandem with mobile houses, because they need to withstand the weather occurrences without additional support.





Fig. 299: Gubiyra, Yalo *woreda*: vertical members are gathered at the crest; the framework is additionally supported at its central point with a single post



Fig. 300: Ali Adayto, Ewa *woreda*: *grass huts* of bigger size may have additional bracing introduced in form of arches encircling the bottom part of a framework; the horizontal bracing starts at the height of about 60cm above the floor - just above the bracing of arches





Fig. 301: dense arrangement of vertical and horizontal members, which are joined at the intersections, gives the framework desired stability

## Building process

Erecting a *grass hut* is also a female domain, just like erecting the other traditional typology of *daboyta* and its elongated variations. Men and children may help collecting necessary components of the framework and covering materials, but the women are the ones to possess the traditional knowledge of building frameworks out of flexible members (Browning 11.03.2012).

The bentwood for armature is collected or cut in the forests found in the surroundings. The preferred species are these of acacia family, because they possess the needed flexibility and length. For the cover straw is harvested around, often complemented with stalks of dry bushes and other desert plants of lengthy shape. Hay may be also purchased on the market if there is too little material available in the surroundings. It is transported from the highlands where it grows and sold on the local markets (Browning 11.03.2012). Strips of bark or thongs made of animal skins are used to tie the elements of the frame together. Bark is soaked for this purpose in the water, so that its fibers gain strength and needed flexibility. The sisal ropes on the other hand are used to fix the bundles of thatch to the framework - to prevent it from being blown away by the wind (Browning 11.03.2012).

The process of erecting a permanent hut begins with planning its functions and furnishings, which are then put in place and the outline of a house is marked on the floor. After alignment and position of the main house doorway are set and the required size of a house is estimated, the construction process may begin. First a shallow ditch is dug out, into which the members of the vertical framework are inserted and buried shortly after with the remaining earth so that they sit stable. Next they are gradually bent inwards till they meet at the crest, where they are gathered at one point and tied together. The horizontal bracing comes soon after: *"it's outside and inside and it's after they put the sticks up and then they put it round to bind it"*, explains Valerie Browning (11.03.2012). The rings are placed successively from the bottom to the top of the framework, each of them 20-30cm apart from the

remaining ones. The number of the horizontal rings depends on the size of a house. The *grass hut* visited in Gubiyrá had thirteen horizontal rings installed to keep its stability and the house was about 2,6m high (Mrs Fatuma 11.03.2012) (Fig. 298). The points of intersections formed by the vertical members and inner- and outer horizontal braces are one by one tied firmly with straps of materials until a uniform framework entity is formed (Browning 11.03.2012) (Fig. 301), (Fig. 302). Such horizontal bracing keeps the whole structure together and gives it a rounded shape, which is very crucial in the windy times.

As soon as the outer framework is completed, alternatively a central pole is installed in the middle of the house. It is embedded in the ground, about 30-50cm deep, and supports directly the highest circle of bracing at the top of a hut (Villagers Ali Adayto 9-10.02.2011, Mrs Fatuma 11.03.2012) (Fig. 289), (Fig. 299). Such intervention is needed especially then, when wooden members used for an armature are too slender to provide sufficient stability of the frameworks, especially due to their bigger spans (Prussin et al.1997). Without them the frame could collapse under the weight of the thatch, not mentioning the wind forces and rains, which soak the thatch, so that it becomes very heavy (Oliver 2003). This is the case by the houses, which floor plans reach at least about 4m in diameter - regardless of their height. The houses, which were smaller than that, did not need such additional support. Their high stability was due to the carefully made framework of horizontal bracing complemented with arches installed at the bottom part of it (Ali Adayto 9-10.02.2011). Such completed dome-like construction is ready to be thatched. First an intermediate layer of plaited mats or cloth may be arranged on the framework to increase the wind- and water tightness of the future house envelope. In the areas closer to urban markets, where also synthetic materials are available, plastic foils or tarps may replace these as well. Yet, if both are not available, builders begin to thatch directly the wooden frame in numerous overlapping layers. Beginning at the bottom of the frame, women work the layers of grass successively upwards





Fig. 302: bark is used to tie framework in knots

(Oliver 1997). The thatching of an Afar permanent house is rather plain, without stepping of the successive layers (Denyer 1978), to keep the cover possibly smooth in case of wind.

When all layers of grass are on their place, the cover is yet to be finished. The last but not least important step is to ensure the proper binding of the thatch with the frame from the outside to prevent it from being blown away from the roof in windy weather. This can be done in at least two different ways. The easiest variant includes use of split bentwood arranged around the house cover in multiple horizontal circles, which is tied through the thatch to the main load-bearing frame - literally clamping the thatch between the split wood and the frame (Fig. 304). The more elaborate one involves use of a sisal rope, which is carefully interwoven between the bundles of thatch and the frame, starting from the middle line of a hut and over its top. Applying this method



Fig. 303: Ali Adayto, Ewa *woreda*: thatch wrapped around with ropes

allows introducing decoration on the house cover, but it depends on the imagination and skills of the builders whether and how it is done. While most of the encountered houses were simply wrapped around several times with a single long sisal rope (Fig. 303), there were also some others, which displayed a decorative motif resembling cross-stitch embroidery with additional radial strings carefully attached at the top of the cover (Fig. 305), (Fig. 306). Though simple wrapping of thatch is probably the simplest way to fix the cover, it seems to be as effective as the remaining two (Oliver 2003).

When finished, such a house resembles a “conical beehive”, as Denyer (1978) names it, which similarly to a mobile mat house, *daboyta*, performs very well its residential function in the given surroundings.



Fig. 304: Gubiyra, Yalo *woreda*: plain thatch stabilized with split branches, which are tied to the frame and literally clamp the thatch in between



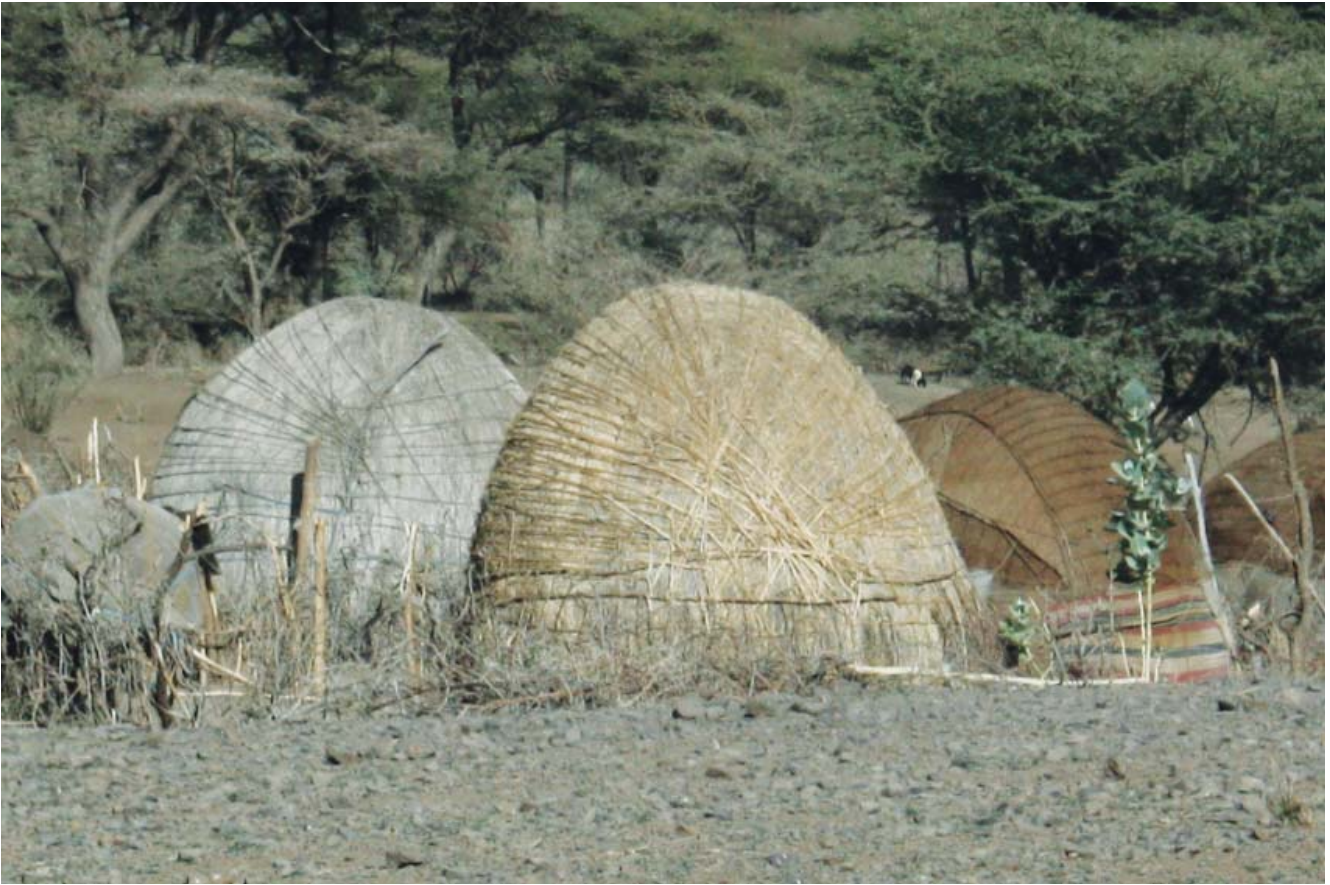


Fig. 305: Chifra *woreda*: thatch stabilized by a series of ropes arranged in a decorative manner

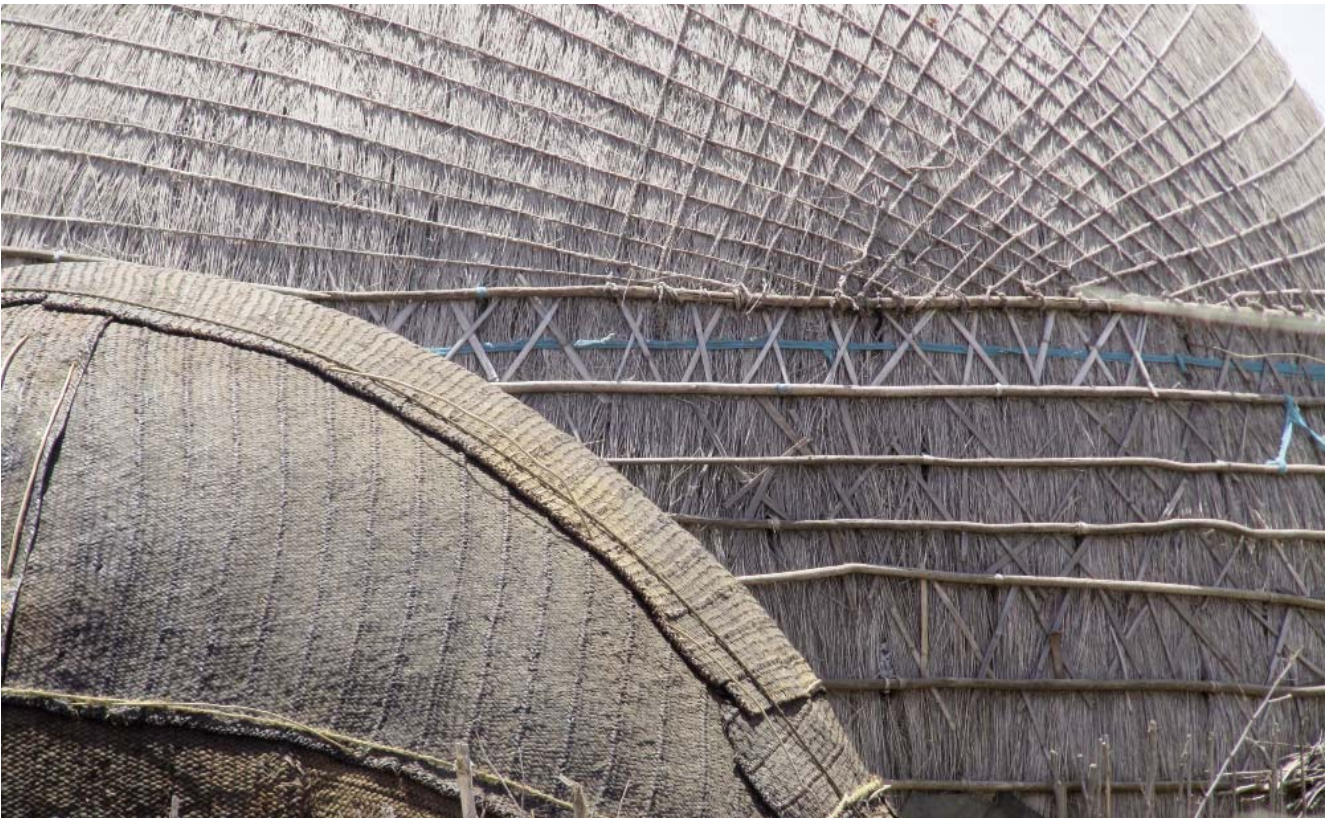


Fig. 306: Alele Subula, Ewa *woreda*: thatch of this *grass hut* is held in place by a set of split wood, pieces of tree bark and ropes arranged and combined in a decorative manner



## Maintenance

Though everything is done to ensure the highest wind stability of the house, the inhabitants of the visited compounds in Gubiyra complained, that it is not always successful and the thatch needs to be replaced now and then to maintain the overall performance of the house cover in case of other weather occurrences. That is also the reason why they would prefer the Amharic typology of a *sar bet* (house thatched with grass) instead of the Afar *grass hut*, which seemed to them more stable due to the higher rigidity of the wall and roof construction, although its roof is also thatched (Women compound Gubiyra, 11.03.2012).

Permanent houses are also smoked inside like the mobile tents, which should preserve the wooden armature and grass cover from being consumed by e.g. termites or other insects (Villagers Ali Adayto 9-10.02.2011, Prussin et al. 1997). The women in various parts of the Region complained about white ant that lives in the ground and devours the wooden parts of the house from the bottom (Women of the compound in Gubiyra 11.03.2012, Mr Mohammed and his wife 22.02.2012, Mrs Moomina 12.04.2012). Oliver (2003) found out that these could consume a roof of a house within six months if no preservation was performed, but even smoking of the house does not ensure its longevity and particular parts need to be exchanged every couple of years (Mr Mohammed's wife 22.02.2012, Mrs Moomina 12.04.2012).

Though the type of cover of the *grass hut* is not as easily adjustable as the one of the mobile mat tent, there is still possibility to maintain sufficient ventilation if there is such need. The lower part of the hut may be left uncovered so that the thatch starts about 10-20cm above the ground (Fig. 308). This gap is enough to allow the air pass through the house, and on the other hand it is small enough to be easily closed with a mat, ring of stones, bush, or cloth (Browning 11.03.2012) (Fig. 307), (Fig. 309). This was the case in the house in Gubiyra in Yalo *woreda* and some houses of the visited settlement by the water dam in Chifra *woreda* (11.03.2012).

In the houses of the community in Ali Adayto in Ewa *woreda* on the other hand, the domes were thatched to the very ground and the air circulation was possible only through the small entrance opening. Because there was only little air exchange possible, these *grass huts* would remain relatively cool throughout the day thanks to the insulating layers of the cover and would not allow the cold night air inside (Villagers Ali Adayto 9-10.02.2011). Though such a solution seems very practical in the cold season of the year, it proves not to work that well in the hot time. Without sufficient air exchange and high temperatures at both night and day, the atmosphere inside becomes very dense and dusty, especially when a fireplace in the adjoining *daboyta* is lit. This proves to be very unhealthy for the inhabitants of the house, which is why women are encouraged to ventilate their houses regularly, to avoid developing health problems related to poor air inside (Browning 9-10.02.2011, Browning 11.03.2012).



Fig. 307: Ali Adayto, Ewa *woreda*: lower parts of *grass hut* are protected by thorn bushes



Fig. 308: Gubiyra, Yalo *woreda*: lower parts of *grass hut* are left open for ventilation; at night the lower part is covered with mats, foils or stones



Fig. 309: lower part of a *grass hut* encased in stones; the house is thatched to the ground



# SPACE USE AND FUNCTIONS, DAILY ROUTINES



Fig. 310: Logya, Dubti *woreda*: the space in front of a house is an extension to the living space in *daboyta*: here guests are received, men's second bed is placed and some of the household chores are performed

## Space differentiation

### *Space inside: multi-purpose versus single-purpose*

The nomadic way of life puts particular requirements on the choice of dwelling people make. Houses need to be lightweight and relatively small to be easily transported, but on the other hand they need to be big enough to house all the needed functions. Also their structural system and volume it encloses need to be compact to minimize the use of materials and keep the time required for reconstruction short, but at the same time they have to be flexible to allow adjustments within the domicile - both structural and functional in accordance to the family situation or time of year. In this regard it is the level of mobility of each community, which defines how elaborate architecture in each case can be afforded. The more independent and mobile the lifestyle that a family leads, the more flexible - both structurally and functionally - its dwelling structure must be to meet the requirements of the constant adjustment to the situation (see „Traditional settling strategies“ page 77). This results in the attempt to combine all needs and functions of the everyday life under the same roof, which seems to be uniform among all pastoralist households in the region.

The multifunctional one-room dwellings are the most frequently encountered ones among the mobile Afar communities in the rural areas of the region, for they meet the need to house all the common functions within the smallest possible space. Denyer (1978) notices very close similarities in the expectations which nomadic communities have towards their shelters throughout the world and it certainly concerns the Afar pastoralists as well. The basic functional requirements, which a homestead should meet, is providing a place to sleep for each member, place to cook and prepare food, place for storage of food and various utensils and somewhere to keep the animals safe. Also place to eat meals,

rest and work, as well as to pray and receive visitors, are of great importance here and these also need to be accommodated under the same roof (Mrs Zahara 12.04.2012, Denyer 1978). All the houses recorded in the rural areas of Yalo, Afdera, Amibara, Gewane, Mile, Dubti and Elidar *woredas*, regardless of their size and shape, comprised in prevailing instances all required functions in a single house (Fig. 228), (Fig. 230), (Fig. 222), (Fig. 238), (Fig. 240).

Yet, the single-purpose dwellings may be also encountered in some parts of the region, in particular closer to the urban centers, or also in the rural areas in the Ewa and Chifra *woreda*. These families, who lead a more sedentary lifestyle, may erect additional permanent *grass huts*, or even more urban-like structures with walls made of a vertical wooden palisade and roof covered with tin sheets, which serve as an extension of the living space additional to the one found in the mobile *daboyta* (Fig. 311), (Fig. 312), (Fig. 315). In the visited compounds in Ewa and Chifra (Fig. 313), (Fig. 314), where most families had more than one dwelling structure to their disposal, each of the structures - the mobile and the permanent one - was perceived as a separate room. The functions were distributed between these two houses according to the criterion of privacy, leaving *daboyta* for the use of the nuclear family *buda* and the permanent *grass hut* for the use of the visitors and further family *daala*. Not without a reason is the *grass hut* often named a *guest house*, for it is mostly used by men or women to receive their guests or other family members, who stay overnight or often even much longer in the area (Villagers Ali Adayto 9-10.02.2011). But apart from its conventional use, the additional permanent structure may also be treated as a bedroom and living room of a husband if a couple has already adolescent daughters, or many small children, who sleep with their mother on one bed in the main *daboyta* (Villagers Ali Adayto 9-10.02.2011, Mrs Moomina 12.04.2012).

Because the area of a nomadic house is compact, it must be

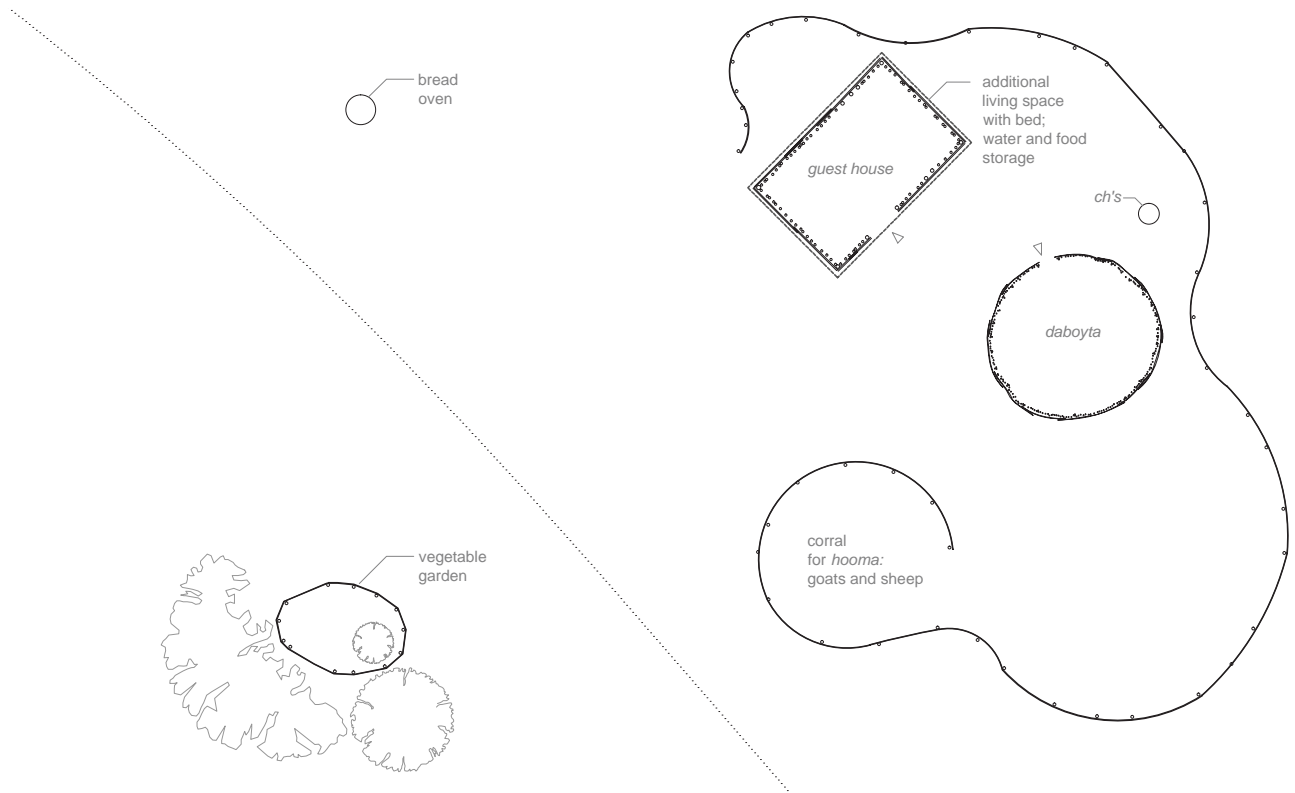


Fig. 311: Logya, Dubti *woreda*: household comprising *daboyta* for a house mistress and her daughters and an additional rectangular house with a bed for her husband and sons; here also food and water are stored; a small garden is placed nearby



Fig. 312: Logya, Dubti *woreda*: household comprising *daboyta* for a house mistress and her daughters and additional rectangular house with a bed for her husband and sons



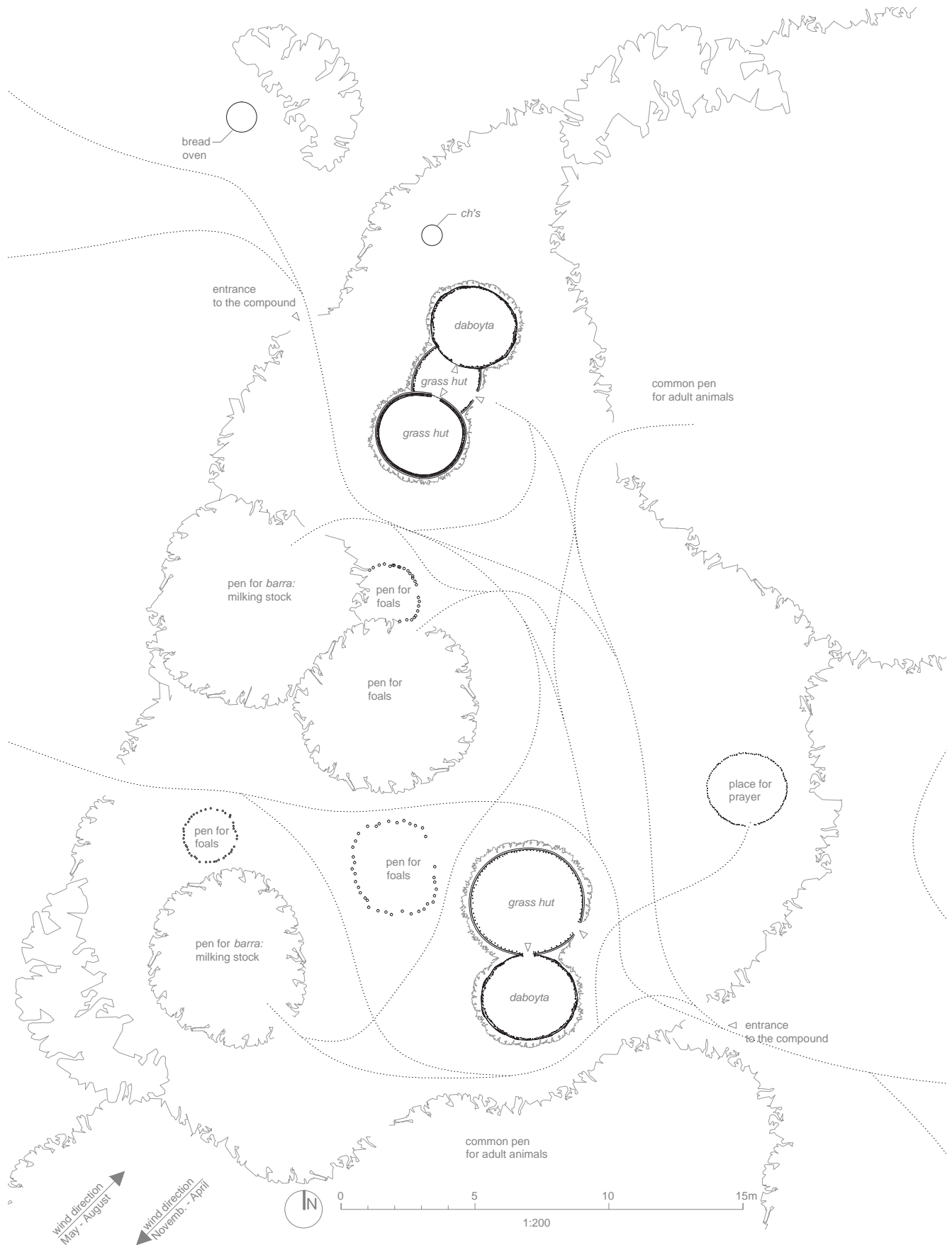


Fig. 313: Ali Adayto, Ewa woreda: households comprising mobile *daboytas* and permanent *grass huts*; various functions like a place for prayer, *ch's*, and a bread oven are placed either directly in the compound, or outside the enclosures;



Fig. 314: Ali Adayto, Ewa woreda: household comprising mobile *daboyta* and permanent grass hut

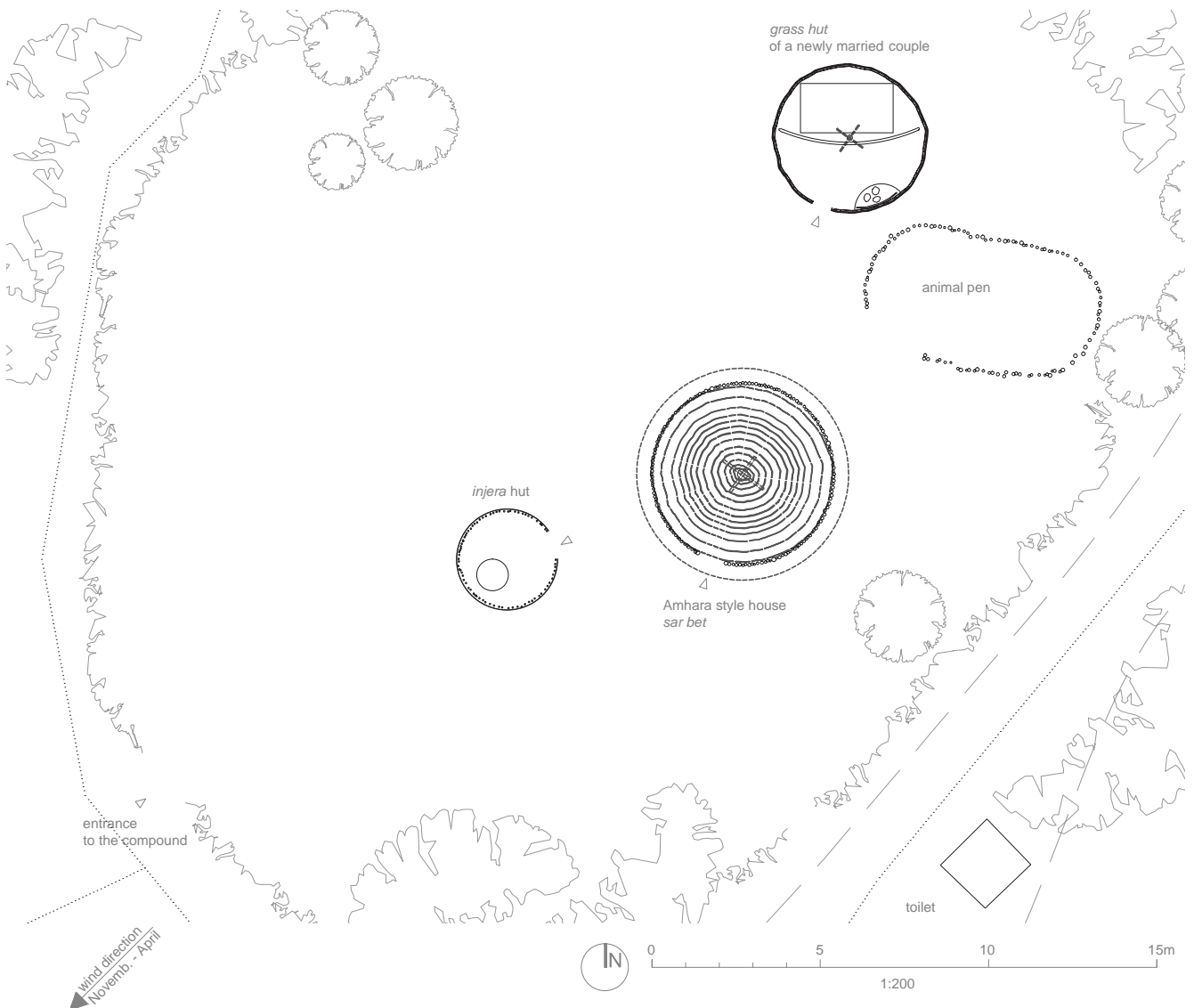


Fig. 315: Gubiya, Yalo woreda: household of a young couple comprising a *grass hut* where all functions are placed; next to it a house for the parents is placed - the Amharic typology *sar bet* and the *injera* hut - both adopted from the neighbors in Highlands





Fig. 316: space in front of the house is used for performing housework



Fig. 317: guests are received in front of the house

well organized and many functions, though not all of them, have a specific place ascribed (Faegre 1979). This concerns e.g. placing these functions, which need natural light closer to the house opening and others, which need less of it in the rear of the homestead (Mr Mohammed's wife 22.02.2012, Mrs Moomina 12.04.2012). Also the use of the volume of a house is physically differentiated: „*Low spaces are used for storage and higher spaces for human activity and movement*” remark Prussin et al. (1997:156). But organizing a dwelling requires considering also non-material factors that root in social organization and traditional custom. These determine e.g. behavior of various house users, including their interaction and to which extent they are granted an access to more private parts of a house, which in turn influences the specific arrangement of particular functions and alternatively introduction of physical or virtual divisions within it (Browning, Little 2008; Getachew 2001; Mr Moomina 12.04.2012; Faegre 1979).

### *Outside space: extension of the usable space*

Just as it is a case among many other traditional nomadic communities in Africa (Denyer 1978, Prussin et al. 1997), also Afar include the space found just next to their houses and also in the surroundings into the functional usable area of a homestead. The boundary between the enclosed space and the open one outside is rather conventional: depending on the time of year and weather conditions various activities may be performed either inside or outside the house (Faegre 1979, Denyer 1978). Apart from the obvious functions, which need to take place outside of the compound, like water harvesting in the rivers or wells, placing the bread- and charcoal oven in the vicinity of the compound, or “*the use of fields and bush in lieu of latrines*” like Oliver (2003:166) puts it, the remaining functions are most commonly situated directly within the enclosures of the settlement. When it comes to some activities concerning receiving guests, or resting during the hottest time of a day, they must take place in the outdoors, for there is literary no space available for them inside a *daboyta*. The bread and charcoal oven is placed more commonly near some bushes next to a compound, but also on the rear side of it, however significantly further from a house. It would be too risky to burn open fire in the enclosed space of *daboyta* or *grass hut* because of the danger that the structure could ignite (Browning 9-10.02.2011, Browning 11.03.2012, Mrs Hawa 22.03.2012, Mrs Moomina 12.04.2012) (see „Bread oven” page 215). Within the fenced space of a compound also piles of cow dung used as fuel are stored and even small sheds containing grass or straw to feed the animals may be found here (Ali Adayto 9-10.2011, Oliver 2003).

There is always some space in front of the house foreseen for reception, so that if the family does not have a separate house for guests, a palm mat may be taken out of a house and additional bedding prepared, so that the visitors may rest there over night or even stay with a family for longer time if needed (Villagers Ali Adayto 9-10.02.2011, Mr Omar 22.02.2012, Mr Ali 22.03.2012,



Fig. 318: wild cherry tree *kusra*

Mr Tibo 12.04.2012) (Fig. 310), (Fig. 317).

In the cold period of year, a whole family sleeps inside the huts on a common family bed, or alternatively on two beds if there is a bigger number of children there, but in the hot period mats are taken out of the house and placed nearby its entrance for men and boys to sleep on them, because the outdoor temperature is much more pleasant and one can find relief from the heat of the day (Browning 9-10.02.2011, Browning 11.03.2012, Mr Sale 21.02.2012, Mr Mohammed 22.02.2012). Women, however, are supposed to sleep inside of the house, regardless of the season (Mr Mohammed's wife 22.02.2012, Mrs Moomina 12.04.2012) (see „Olloyta“ page 203).

The outdoor space is also a comfortable place to work for women, especially in the morning hours when sun can warm them up and in the late evening when they can hide in the shadow of their own hut. Also during the day a windy spot under a tree casting shadow is always preferred to the inside of the closed tent where the air is still thick of smoke and warm. Many activities like churning butter, weaving mats, or grinding cereal are willingly performed there. Only during the cold windy season, or when it rains, will they perform all these activities indoors (Villagers Ali Adayto 9-10.02.2011, Faegre 1979) (Fig. 316).

Though it is not often the case because of high mobility of some communities and very restricted access to permanent water sources in some areas, there are parts of the region, where small gardens may be set close to the homesteads, but only if enough water is provided. Soils are fertile enough to sustain watermelons, *habhab*, tomatoes, onions, corn and green peppers (Browning Feb.2011). Closer to the permanent rivers, potatoes may be cultivated, as well as ayso, grass, to feed young animals (Mrs Moomina 12.04.2012). Also fruit trees like *kusra*, wild cherry, mangos and papayas may be grown if taken care of appropriately, though they give fruits only at the turn of cold and hot season (Mr Ahmed 5.03.2012). It is always a good survival strategy for these communities who lack milk, especially



Fig. 319: small garden next to a house with date palm and *kusra*

for women who stay in the compounds while the animal stock is away on pastures with men, to complement their diet with wild fruits growing in the surroundings (Rettberg 2009) (Fig. 318), (Fig. 319).

### *Mobility versus permanence, space differentiation, gender separation*

#### MOBILITY VERSUS CONTINUITY

There is a certain paradox in the notion of a permanent space enclosed in a mobile shelter, yet it precisely describes the characteristics of a nomadic dwelling. The shell is demountable and portable, yet the virtual homestead and functional space it contains is by no means temporary, as Prussin et al. explain it (1997:42): *“Its ‘permanence’ is in the minds and behavior of those who build it, from the repetitive reassemblage and reconstruction of the architectural elements into an almost identical assemblage at each new point in space”*. The human body perceived as universal measure and room it needs to perform particular movements are the key elements used to create an autonomous dwelling space. The functionality of it and the relation of a user to its artifacts are consolidated while the habits of performing particular daily activities in particular order and place are set. Repetition is the key and it helps the women to continuously recreate their living space in the new surroundings, though in a physical sense it is deconstructed each time a community moves (Prussin et al. 1997).

#### SPACE DIFFERENTIATION: ROOM DIVISIONS, LEVELS OF PRIVACY

Similarly virtual in most cases are the physical divisions of inhabited space according to functions, or their accessibility to particular user groups. Most functions have their specific place assigned in the house, but additional walls or curtains very seldom separate these. The middle size *daboyta*, as an example of a circular house to which Oliver (2003) refers in his study, is simply



too small to introduce vertical partitions, which would create only rather unpractical in use, dark and poorly ventilated spaces. All the more that there is only one source of light foreseen in the house, which is its entrance opening and alternatively one on the side - if some mats are rolled up (Mr Sale 21.02.2012, Mr Mohammed and his wife 22.02.2012, Mrs Fatuma 11.03.2012, Mrs Moomina 12.04.2012) (Fig. 228), (Fig. 230), (Fig. 226), (Fig. 222), (Fig. 291), (Fig. 296), (Fig. 289).

Unlike the smaller *daboytas*, the extended huts found in Dodom area in Afdera, or some of the houses in Amibara like the one recorded by Oliver (1998), or the other in Angelile (BBC Two - Tribal Wives, Series 1, Afar/Ethiopia 20.04.2013) may have some physical partitions introduced inside. The visited house in the Dodom area had a screen made of mats spread between the supporting posts that separated the cooking- and food storage area from this part of a tent, which was used to welcome guests and to rest (Fig. 238). The houses in the Middle Awash



Fig. 320: a mat on the floor and a piece of wood laid across visually mark the boundary between various realms of a house

on the other hand had a modest vestibule erected inside, which separated the entrance from the main body of the house, so that the wind would not get that easily inside (Oliver 1998, BBC Two - Tribal Wives, Series 1, Afar/Ethiopia 20.04.2013) (Fig. 240), (Fig. 327).

There are however also alternative ways to define spaces, if these need to be differentiated. One of it is the introduction of additional rooms to the house in form of permanent huts adjoining the main house structure or erected just next to them, as the *guest hut* described above, but this is not always possible if the community migrates frequently. The others may amount to diversifying the materials used for covering of the surfaces, or manipulating levels of the floor and furnishings, so that they are clearly distinguishable (Villagers Ali Adayto 9-10.02.2011, Mrs Moomina 12.04.2012, Mrs Fatuma 11.03.2012). The stamped earth of the house serves the movement of the inhabitants. The mats and skins, which are laid on it, become a place to sit, work and rest (Fig. 320). The bed of the house mistress is elevated of the floor, not only because of the vermin, but also due to its symbolical connotations and status of a private sphere of a house (Villagers Ali Adayto 9-10.02.2011, Mrs Moomina 12.04.2012) (see „Olloyta“ page 203), (Fig. 256) to (Fig. 258). A part of a floor may be stamped a little higher and if a wedding mat *olloyta* or a mattress is laid on it and additionally a boundary on the floor is marked with a horizontally laid piece of wood, it also gains a special status of a private space, which is visibly clearly demarcated (Mrs Fatuma 11.03.2012) (Fig. 320), (Fig. 340).

What poses challenge in differentiation and arrangement of spaces inside a house, if no- or only modest physical subdivisions or other markings are introduced, is the distinct level of accessibility granted to particular users of the house, including its inhabitants and their guests. If there are no apparent visible cues, which would indicate whether or not one could enter a house or stay in one or the other area inside of it, or use one or another item, there must be some set of unspoken rules, which - though not tangible - are commonly known to everybody and are accordingly followed. And this is precisely the case of the Afar dwellings. The gradation of privacy levels, though not visible at first sight, may be recognized according to the behavior patterns, which its users show. *Daboyta*, as a family- and woman domain, should not be entered without an invitation; the same concerns the *grass hut* if such is built (Mr Mohammed and his wife 22.02.2012). The receiving of the guests takes place in front of the house, were they are offered stools or mats to sit on before they are invited inside, if they are invited at all. The non-related visitors, who have only some negotiations to do, or business to settle, will be received in front of the house (Browning, Little 2008), however, with all respects being paid to them. “*The guest is much respected in the Afar culture*”, says Mr Sale (21.02.2012). But “*if the relatives visit a compound*”, explains Mrs Moomina (12.04.2012), “*and if there is enough space in the Afar house for the visiting people, you can share it with them. If this is not the case, but the family has two houses, they may take guests to the second one. If not, they can give them mats, so that they can rest*



Fig. 321: Ali Adayto, Ewa *woreda*: women chatting in the late afternoon

*under the tree, in the shadow”.*

Yet alone within the *daboyta* there are some areas that are considered more private than the others. The common division into a front and back part of a house with a family bed placed close to its rear wall opposite the house entrance divides the house into the less- and more private realm. If a non-family visitor is invited inside, he may be allowed to sit on the mats and skins, or even mattresses if such are available, which are put on the floor in the front part of the tent, but very seldom will he be invited to sit on the family bed (Browning 9-10.02.2011). Among communities living closer to the towns this custom may be of a lesser importance and if a guest is already invited inside, he may as well be invited to sit on the bed if there are no mats or skins provided in the house (Mr Sale 21.02.2012, Mrs Fatuma 11.03.2012, Mrs Moomina 12.04.2012). Yet, it does not always have to be a case and most Afar still prefer to receive their guests just in front of their houses (Mrs Barka 8.03.2012) (Fig. 310).

Such strict rules do not however concern the use of house utensils and various items, which are in possession of a household. The property in the meaning we know it in the western world does not exist here and everybody is allowed to borrow items without even asking for them. These are borrowed, then returned or not, but it is of no concern to the pastoralists (Browning, Little 2008). The only exception here is the traditional bed mat, *olloyta*, which is a gift to a woman upon her marriage and should never leave the house (see „*Olloyta*“ page 203). Only the children are carefully looked after, so that they do not get too easily access to provisions or do not approach the open fire (Prussin et al. 1997). The food is therefore stored on elevated platforms, or hidden in the fold of one of the roof mats, or at the intersection of a roof of *grass hut* and *daboyta* (Ali Adayto 9-10.02.2011) (Fig. 327), (Fig. 343), (Fig. 344).

#### GENDER SEPARATION

Unlike it is a case among many others Muslim nomadic societies (Prussin et al. 1997, Denyer 1978, Faegre 1979), among Afar the traditional separation of both genders on the domestic level is not

necessarily sanctioned with introducing visual boundaries and any sort of separations, or divisions to men’s and women’s sides. The already mentioned set of unspoken rules regulates also the behaviors of spouses and no spatial attributes are needed to maintain the traditional *status quo*. In fact, the interaction is not forbidden at all, it just does not happen that often (Fig. 321), (Fig. 322). Among traditional rural societies there is not much talk going on between women and men on a daily basis, as Browning (9-10.02.2011) puts it. Each of the group confronted with their duties, which tradition and custom demand of them, spend the days separately, only to meet in the house for the meal and rest. And if the raining period comes, it may as well be the case, that they do not see each other for much longer periods of time if men are away with herds, *magida*, on the remote pastures (see „Traditional roles and domains, gender interaction“ page 30).

The unspoken interaction etiquette is discreetly followed by each of the members of the community. If an unrelated guest arrives at the compound, either Afar men or women will tactfully leave the house when visitors are invited inside. But more often, if the visitors are male, will the man move with his comrades to the shaded space inside or outside a compound, or to a *guest hut* if one is build in the compound, so that the women are not disturbed in their home activities and men may discuss or negotiate freely (Browning, Little 2008; Browning 9-10.02.2012). The duties of receiving visitors are divided between the spouses<sup>1</sup>:

*1 The tradition of Afar to give shelter and provide food and water to anyone, who arrives at their homestead is deeply rooted in their need for mutual help and is certainly of great importance to maintaining good social relations within the broader community, as well as for the means of potential information exchange. Visitors of a family either from close or remote areas are very frequent, so that there is a custom to always prepare more food, in case somebody arrives unexpectedly (Mr. Osman 29.02.2012, Mr Youssef 21.03.2012; Mr. Ali 22.03.2012).*

*Valerie Browning (Browning, Little 2008:94) wrote in the book: “The Afar have a communal way of life. If someone has a bit of food or place to sleep, they’ll always share it with others who are less fortunate”.*





Fig. 322: Ali Adayto, Ewa woreda: in the rural areas Afar men and women spend time rather separately

“The women take the responsibility of providing food and water to the visitors” explains Valerie Browning (9-10.02.2012), “but men take the overall responsibility of taking the news of the visitors, entertaining the visitors and maybe negotiating with visitors if there’s a negotiation to be done, so the men sit and discuss in the visitors house”. Under circumstances, which are considered special, like e.g. when a woman is giving birth, her female relatives, including her mother, arrive at a compound at about the 8th month of pregnancy and stay with the house mistress in her *daboyta*, taking over the duties of keeping a household (Mr Sale 21.02.2012). During this time her husband is sent off to his family for a while, until she recovers after giving birth (Browning 9-10.02.2011), or moves to a house of his second wife if he has one (Mr Sale 21.02.2012).

Meals are also served and eaten separately, either inside or outside of the huts depending on the weather conditions and season of the year. If the weather is not windy and it is warm outside, women eat in the shadow of the tent, and men stay at some distance from them, so that there is no visual contact between them. In prevailing instances the serving of the food proceeds in a following order: first the unrelated guests are taken care of, afterwards the men and in the end the women and children. If the visitors are family’s relatives, they may as well dine together with the hosts, but the order of serving and separation of sexes is respected (Mr Osman 29.02.2012, Browning 11.03.2012, Mr Sale 21.02.2012, Prussin et al. 1997). Most nomadic families eat two meals a day: in the morning before men go out to the pastures and in the evening after they return. Children may eat more often depending on their age and health (Mrs Moomina 12.04.2012). Among communities in the urban centers, having an additional meal around noon is nothing uncommon, especially among town workers, though not everybody practices it (Mr Osman 29.02.2012, Mrs Moomina 12.04.2012).

Afar diet consists traditionally of bread *gaambo*, which is baked by women in the compound and milk of camels, goats, sheep or cattle. Also milk products like fermented yoghurt and butter are

produced for own use and consumed every now and then. Meat is prepared only very occasionally, during important communal events like e.g. weddings. For special occasions, which occur on the daily basis, women prepare also different kinds of thick soups like *sorba* or porridges like *dakha* or *asida*<sup>2</sup> with various additives (Browning, Little 2008; Browning 11.03.2012, Mr Tibo 12.04.2012, Mrs Moomina 12.04.2012) (see „Building: domain of women“ page 153), (Fig. 246), (Fig. 324).

Most of times the meal would be served as one big loaded shared plate or bowl with food, which would be forwarded after meal is finished to the ones, who are next in the line (Mr Osman 29.02.2012, Browning 11.03.2012, Mr Sale 21.02.2012, Prussin et al. 1997). During our stay in the compound in Logya, but also during our visits to other compounds in Dubti and Yalo *woredas*, we were always served a meal first, if a meal was served, and otherwise offered to enjoy the tea together with our hosts. The tea, which is part of many community meetings, may be enjoyed together, but it is an exception to the rule (Mr Osman 29.02.2012, Browning 11.03.2012, Mr Sale 21.02.2012, Prussin et al. 1997). During the afternoon rest, the women will stay in *daboyta*, and men will look for some shadow under trees or next to the rivers, unless there is an additional *guest hut* available (Browning 9-10.02.2012).

The exceptions to some of these rules may be encountered within some semi-sedentary communities around the towns, where the attitude towards traditional customs is less strict than in the rural

<sup>2</sup> *dakha* or *asida* is made of flour cooked in salty water till it has a consistency of a porridge. After it is cooked, it is placed in a bowl and a small pit is formed in the middle, into which butter, yoghurt, milk or spices like e.g. red pepper powder are poured. A small amount of dough, just enough for a mouthful, is taken with fingers of the right hand and formed into small balls, which are then put into mouth. Refusing common meal would be considered impolite, because *dakha* or *asida* are served only on special occasions (Gubiyra, Yalo woreda 11.03.2012, Mrs Moomina 12.04.2012)



Fig. 323: Logya, Dubti *woreda*: in the urban areas both men and women may gather in the morning or afternoon for tea and social exchange



Fig. 324: *dakha* or *asida*: thick porridge made of flour prepared for special occasions served with goat butter and spices like *berbere*, pepper powder



areas. In some of the visited compounds around Logya men and women would admittedly dine separately, but afterwards they would rest and chat and have some tea together under the same roof with the neighbors and family, regardless of their age and gender. The children would be running around the property and elder people would rest on mats inside *daboyta*. The host would lie on the family bed and play with the children; the hostess would serve the tea and chat with the women (Mrs Moomina 12.04.2012) (Fig. 323), (Fig. 325). Mr Sale would also rest together with his second wife in her *daboyta* and if he wanted to meet his friends, it would be in one of the coffee shops in the town center after visiting the Mosque (Mr Sale 21.02.2012).

There are, however, also in the rural areas such common social gatherings, which are traditionally sanctioned, and it is when women and men meet together to celebrate important events like e.g. weddings. It is when they dance and sing together and the whole spectacle is truly moving and interesting to observe. Valerie Browning (Browning, Little 2008:33) described in the book the characteristics of such dances, which we were also given a chance to enjoy twice during our first field study in 2011 in Ali Adayto: *“Afar dancing is very dramatic. The men, holding knives and sticks, stand in one spot and jump up and down. It’s a competition of manliness. They push their bodies harder and harder, jumping higher and higher. The women dance in lines. They call out to the men, strange, melodious cries which come from the back of the throat, and the men answer them. Each dance tells a story, rather like the corroborees of Australian Aboriginal people”* (Browning, Little 2008:33) (Fig. 326).



Fig. 325: Logya, Dubti *woreda*: a couple of generations may share one compound or household



Fig. 326: Ali Adayto, Ewa *woreda*: Afar dance



## Elements and furnishings of the house

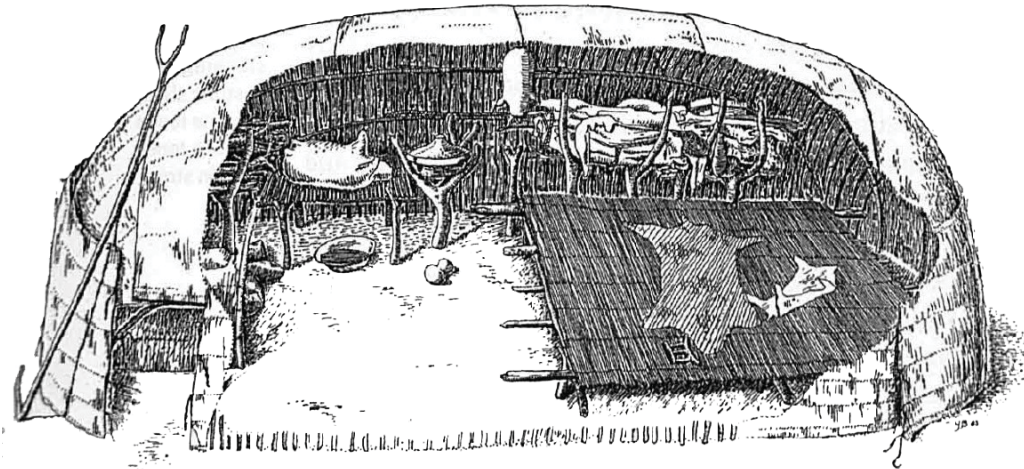


Fig. 327: Amibara *woreda*: a cross section of an elongated house with functions like vestibule, family bed, storage and hearth; Oliver 1997: 2017

The repertoire of furnishings of the Afar houses, though it differs across the region according to the size of the dwelling, needs of its inhabitants and their wealth, remain almost the same in all dwellings. Wooden beds, elevated platforms to store food and utensils, hearthstones, additional mats and goatskins and alternatively some stools and wicker wood baskets to keep the wardrobe and small items in it, is all that is needed to furnish a house of a nomad. “*The nomad’s possessions*”, writes Faegre (1979:8), “*are necessarily few since everything must be moved frequently, so each object has its exact place where it can be found the moment it is needed*”.

### *House entrance*

The size of an entrance to a *daboyta*, elongated hut, or a *grass hut*, could seem quite small to a westerner, for it is in some cases very difficult to pass through without bending considerably, or even slipping inside in a side-squat. With the average size of about 40-60cm in its width and 80-140cm in its height it is indeed kept rather modest. Afar pastoralists are admittedly very finely built, but even for them such entrances seem to be a little too small. So why would they build it this way, if there are no structural constraints, which would explain the need for such choice? The answer is a very simple and practical one: not to allow too much cold air, rain or dust entering inside during the night or the sandstorm, but also to prevent hot air, which is often gritty of sand, from getting inside during hot period wind blasts (Browning 9-10.02.2011, Mrs Mohammed and his wife 22.02.2012, Mrs Moomina 12.04.2012) (Fig. 290), (Fig. 292), (Fig. 303), (Fig. 328), (Fig. 329).

This is especially important in the regions where communities migrate often and *daboyta* is their only shelter. Not only is it important there to align the entrance so that it is placed on the opposite side to the direction of the wind, but also to be able to close it tightly if there is such need (Fig. 228), (Fig. 230), (Fig. 226). The *daboytas* in the western part of the region, which are



Fig. 328: house entrance closed at night by means of unrolling a mat





Fig. 329: a middle structure joining *grass hut* and *daboyta*

often accompanied by an additional *grass hut*, are not entered directly from the outside, but through the *guest hut* (Fig. 290), (Fig. 291). As soon as the family proceeds to another area and the *grass hut* stays behind, one can notice it has two openings: the main entrance and a doorway leading previously to the mat tent (Chifra 10-11.03.2012). The same applies if there is an additional thatched structure joining the *daboyta* with a grass hut. In such case both *daboyta* and the guest hut are entered indirectly through this joining hut (Fig. 296), (Fig. 332).

The door stays open while women are busy looking after daily duties, but it is closed as soon as they leave to visit another compound. This way no animals will enter the house and help themselves with provisions or destroy items stored inside. Depending on the preference and availability of materials, a carved wooden board, a plaited bentwood screen, or less traditionally a metal sheet, can make a portable door, but most



Fig. 330: the entrance is closed with a wooden board

traditionally the opening is closed by means of unrolling an entrance-mat, which is installed while the house is built and rolled up over the door when it is not in use (Fig. 328) to (Fig. 331). When it is unrolled, it is fixed at the bottom with ropes of pieces of bark, so that it stays in place when it is windy (Villagers Ali Adayto 9-10.02.2011, Mr Sale 21.02.2012, Mr Mohammed and his wife 22.02.2012 Mrs Fatuma 11.03.2012).

Like in many cultures the door has also a symbolical significance and crossing it means entering a private realm of a family (Oliver 2003). In Afar culture entering somebody's house is a humbling act, and it is not just because you have to stoop double through the door. It is also an honoring one, as Valerie Browning (9-10.02.2011) underlines, because of the act of trust and respect shown to a visitor and to the host: "*When you enter somebody's house, you enter a house humbly. You don't enter the house like if you would own it; you enter the house to greet people,*



Fig. 331: palm mat is most commonly used to close the entrance to the tent; often it is complemented with wooden boards, or wicker wood panels





Fig. 332: Ali Adayto, Ewa woreda: both *daboyta* and *grass hut* may be entered from the middle structure joining them, here a view from *daboyta*

to respect people. So the door always makes you stoop down. That's necessary in Afar culture. You don't burst in a door. You stand outside and you say: 'Are the people of the house home?' And then somebody replies to you and then you are allowed in".

### *Olloyta*

*Olloyta* means in Afar language literally *a bed* (Parker 2006), but in the nomadic context it often relates to the traditional bed mat, which is put on the wooden armature anchored in the ground that lifts the bed platform off the floor (Browning 9-10.02.2011, Mrs Moomina 12.04.2012). The bed occupies very often almost the entire house area in the round *daboytas* and almost one third of it in the elongated ones, depending on how many family members inhabit the house (Villagers Ali Adayto 9-10.02.2011, Dodom area 18.04.2012) (Fig. 291), (Fig. 238). In the surroundings of Logya all the visited houses had two beds installed inside to enhance the sleeping comfort of the users (Fig. 228), (Fig. 226). Because the number of the people living there was too big to occupy one bed, often additional beds were built inside, or outside in front of the house (Fig. 222), or even in the additional rectangular huts with vertical walls and sloping roofs, constructed specially for this purpose (Fig. 311), (Fig. 312) (Mr Mohammed and his wife 22.02.2012, Mrs Moomina 12.04.2012, Mrs Zahara 12.04.2012).

The size of an *olloyta* may vary according to the size of a bed, but unlike the frame, it has always a regular, rectangular shape. It has to be big enough for the whole family, so its size is planned always slightly larger. The exemplary beds seen in Ali Adayto measured almost 4 sqm (1,9m x 2,0m), but there were also smaller ones in the *guest hut* measuring about 1,6m x 2,0m (Fig. 291). On the other hand beds recorded in the visited houses in Dubti woreda were smaller, measuring in average 1,0-1,2m at their width and 1,8-1,9m at their length, but because the overall

measurements of the houses were much bigger there, it could have even two beds installed inside if there was such need (Fig. 228), (Fig. 222) (Mr Sale 21.02.2012, Mrs Zahara 12.04.2012). In elongated houses a couple of such mats must be laid across the bed frame, both because of the irregular and partly rounded shape of the bed platform, and its considerable size (Fig. 238) (Dodom area 18.04.2012).

The mats may differ according to the used materials and elaboration of the produce. It depends on the financial means of women, their skills to produce mats, the available materials in the surroundings and finally on the designation of these mats for a particular use, according to which various types can be in use (Mr Tibo 12.04.2012, Mrs Moomina 12.04.2012).

The traditional ritual marriage mats are the most carefully and decoratively made, because of their symbolical meaning to a



Fig. 333: traditional *olloyta* made of wooden sticks joined with thongs





Fig. 334: traditional *olloyta*: various textures and colors may be achieved when using various types of animal skins



Fig. 335: traditional *olloyta* made of wooden sticks joined with thongs in a decorative way

newly married woman. They are perhaps one of the few objects of the Afar handcraft, which may have a decorative character, the other ones being baskets and bowls for milking camels. These mats are made of best types of wood available in the surroundings, or on the market, which are carefully selected according to their diameter and straight shape, thanks to which they are much more rigid than the palm mats covering the roof and may last for the whole life cycle of a house and his inhabitants (Browning 9-10.02.2011) (Fig. 333) to (Fig. 335).

Structurally seen a bed mat is made of straight wooden sticks cut to the same length and aligned according to the needed length, which are very tightly bound with thongs and strips of tanned cow-, goat- or even sometimes camel skin. The strips of various widths are interwoven between the ribs of the mat and tightened in decorative knots either in parallel lines - a rather plain and simple version - or following more complicated patterns of lines and zigzags or cross-stitch. Also colors and textures may be alternated by means of applying different types of skins (Fig. 333)

to (Fig. 335).

The wood species utilized for this purpose are e.g. *kelayto* tree growing in the rural areas in Dubti *woreda*, which is also used for construction of the armature frame in these areas (Mr Sale 21.02.2012, Mr Mohammed's wife 22.02.2012), or any other strong woods of relatively straight branches (Browning 9-10.02.2011).

The fact that the mat is very decorative does not mean it is used only on special occasions. It is an item for everyday use, just as are the remaining artifacts of the house. What makes it special is that it is initially a mat of a newly married couple and later also their children, which it remains throughout the whole life cycle of the house inhabitants (Browning 9-10.02.2011, Mrs Moomina 12.04.2012).

If there is more than one bed foreseen in a house, also other mats are needed to serve the remaining family members, in particular the children, or the husband and adolescent boys if





Fig. 336: plain *olloyta* made of wooden sticks and ropes



Fig. 337: *olloyta* made of palm fronds bound with sisal ropes

these sleep separately. These do not necessarily need to be less elaborate than the wedding mats, but often they are made in a much more simple way and without additional decorations, because they do not have the symbolical connotations.

Materials used for such mats may vary: either wooden species similar to these used for producing wedding mats are applied (Villagers Ali Adayto 9-10.02.2011), or simple Date palm stems or fronds replace the bentwood. Ribs are tightened with either thongs, sisal-, or high quality palm leaf ropes without additional decorations (Fig. 336), (Fig. 337) (Mr Sale 21.02.2012, Mrs Moomina 12.04.2012).

Traditionally women take pride in doing these mats themselves - it is a part of a ritual, but also it guaranties that the mats will be of an excellent quality and will last much longer. This is also a part of creative crafts, with which some women busy themselves if they have time and interest for this kind of activity (Browning 9-10.02.2011).

The mats may be purchased on the market as well, especially

if there is no material available in the area so that women could create them themselves (Browning 9-10.02.2012). The ones made of stiff palm fronds bound with ropes can be found in the Asayita market where they are made by Afar women living in the surroundings and they fetch a price of about 300 ETB each. The *olloyta* made of woods and skins is much more expensive and it is not sold everywhere. In Chifra one can be purchased for about 700 ETB a mat because it requires the use of more valuable materials and work time (Browning 9-10.02.2011, Mrs Moomina 12.04.2012, Mr Tibo 12.04.2012).

For the bedding additional palm leaf mats, the same as the ones covering the roof, may be laid on the *olloyta*, but also goat- and cow hide to enhance the sleeping comfort. Traditional scarves, or longer shawls, are used as cover during the cold of the night; the blankets can be found only seldom. Men use traditional wooden headrests resembling the ancient Egyptian ones to rest their head on during the night, so that their hair is kept in good shape,





Fig. 338: bedding made of nothing more than a couple of cow hides spread across the bed mat *olloyta*



Fig. 339: bedding in an town-based household with plastic mat, pillows, blankets and mosquito nets

but apart from these, traditional Afar sleep on the almost plain bed without any cushions or mattresses (Browning 9-10.02.2011) (Fig. 338), (Fig. 339). Only closer to the towns, where modern bedding can be purchased, mattresses and pillows can be found also in the houses of Afar, but mostly only among the sedentary ones (Yalo 11.03.2012) (Fig. 340). In the suburban settlements also imported plastic mats are often in use, because they are cheap, light to transport and easy to keep clean, but it is only a recent development (Browning 9-10.02.2011, Mr Sale 21.02.2012). Also mosquito nets are installed over beds in the settlements close to *kallo* areas, which should prevent developing Malaria spread by mosquitoes (Mr Omar 22.02.2012) (Fig. 339).

None of the elements made by Afar women carries so much symbolical meaning like the traditional bed mat *olloyta*. Passed to the daughter from her mother on the wedding day, it becomes the main and obligatory component of her mobile house. It is a property of a house mistress, just as the remaining elements and



Fig. 340: a simple mat and a mattress laid on it make a modern bed among more sedentary communities



the furnishings of a house and it constitutes the private realm of a married couple and their small children (Browning 9-10.02.2011, Mrs Moomina 12.04.2012). But most of all moving into a new house with own *olloyta* symbolizes the beginning of a new stage in a woman's life - a life of a married and respected woman.

The symbolism of bringing in an *olloyta* into a new *daboyta* and beginning a new life cycle of a family is to such an extent important for the Afar women, that they believe, that taking it out of a house in times other than while migrating to another area, may break a spirit of the homestead (Browning 9-10.02.2011). The frame of the bed does not have such symbolical meaning - it may be left behind together with an armature if it is also to be left in the main compound and only a mat is rolled up and installed on a camel for transportation. In the new place a house is rebuilt and after it is finished, an *olloyta* is brought inside and installed on the frame (Browning 9-10.02.2012, Mrs Moomina 12.04.2012).

No other people are allowed to sleep on the wedding *olloyta* than the house mistress with her husband and their small children. When girls grow up, but before they are married, they occupy the bed with their mother, while the husband and the boys have to move onto another bed, to a *grass hut*, or to sleep outside if the weather allows this. Afar believe that allowing other unrelated people to sleep on the marriage bed would desecrate it (Browning 9-10.02.2011, Mrs Moomina 12.04.2012). Only when encouraged to do so, a visitor is allowed to sit on the *olloyta*, but it is very seldom among the rural communities. Being granted such invitation means being paid highest regard and respects from the hosts (Mr Omar 21.02.2012, Mr Tibo 12.04.2012).

If an additional place to sleep is needed for a guest, or if a man wishes to rest outside, some cow skins and palm-frond mats will be taken out and placed on the tarps or on the flat barren ground in front of a house (Browning 9-10.02.2011, Mr Mohammed and his wife 22.02.2012). If a family has a *guest hut* (Villagers Ali Adayto 9-10.02.2012), or an additional room built next to the *daboyta* (Mrs Moomina 12.04.2012), these may be installed inside: on a framework, or on a clearly swept floor. In the visited compounds in Dubti some houses had an additional permanent bed frame built just next to the house entrance for men and guests to sleep on them during the hot time of the year (Fig. 341), (Fig. 342). Such positioning of the bed would allow for having control over the house entrance and looking after the homestead, and at the same time still being sheltered from dusty wind in case it came at night from the southwest direction (Mr Mohammed and his wife 22.02.2012, Mr Zahara 12.04.2012). This bed would be also elevated off the ground and the sleeping platform would rest on forked sticks embedded in the ground. In the evening a palm mat and bedding would be placed on the frame for a man or a guest to sleep on and then rolled up in the morning and stored in *daboyta* to prevent it from being destroyed by the animals or the sun radiation. These beds may be also used when receiving guests during the day and having conversations with them (Mr Mohammed and his wife 22.02.2012) (Fig. 310).



Fig. 341: bed mat made of palm leaves spread on the outdoor bed



Fig. 342: outdoor bed for guest or male family members during hot time: an elevated platform on the forked woods embedded in the ground





Fig. 343: storing fruit on the house cover - out of reach of children and animals



Fig. 344: elevated platforms are used to store dough, fruits or butter



Fig. 345: various hand made baskets and sacks are used for storing grains and dried fruit

## *Storage, containers, other possessions and furniture*

Apart from some settlements in the urban areas, it is seldom the case among the mobile communities that an additional building is erected for storing food or goods. It is more often the case that some parts of already existing housing structures, whether in the main house, or in a *grass hut*, are designated for this purpose, so that the food and water may stay under control of the house mistress in case animals, rodents, or even children try to help themselves to it.

Grains like sorghum and lentils are usually purchased in bigger batches for a season and stored in sacks at the back of the tent, in the dry, shaded spot away from the house entrance (Fig. 345).

Next to it water is stored in goatskins, which like most of other containers found in the tent, are produced by Afar women (Browning 9-10.02.2011) (Fig. 346). There is always enough supply of water stored in the house, and it needs to be replenished regularly. It is perhaps the most time consuming activity for women, who can spend even a couple of hours a day fetching fresh water if the source is far away: *"They have to walk to the source and back at least once a day carrying the load on their backs, and often a baby as well"* says Valerie Browning (2008:xii). Some communities have access to water wells in their surroundings, but the remaining ones must look for intermittent rivers on the raining planes bearing water after rainfall (Browning, Little 2008; Mr Youssef 19.03.2012, 18.04.2012) (Fig. 347).

The water meant for drinking is cooked in first place, cooled and only then stored in sealed goatskins. If properly stored, the water from this natural container is pleasantly cool, though it may have a slight taste of the skin it is kept in (Dodom area 18.04.2012). These natural water containers can keep anything from a dozen to a couple of dozens of fresh water, depending on how big the animal was. Because goatskins tend to start to crack after about a year of use, they need to be regularly replaced by the new ones





Fig. 346: goatskin containing water

(Prussin et al. 1997). Also the imported yellow plastic containers, the so-called jerry cans, gradually find their way to the nomadic households and they tend to replace the goatskins because they are just as light and they last much longer than the skins (Fig. 115), (Fig. 347). However, they are not as comfortable to carry as the soft natural containers, which can be especially painful if water needs to be carried from a very far distance to a house on own back (Browning 9-10.02.2011). In order to keep the water cool in such containers, they are dressed in cloth, which is kept moist all the time. The evaporative process of water on the surface cools it and prevents the water inside to heat up (women from the compound of APDA, 2012).

The goatskins are either suspended from the tent armature, or are laid on a small table-like elevated platform erected of four gable sticks embedded in the ground, on which a board is laid (Fig. 344). On the same platform also other containers with milk or butter may be placed, or a bowl with dough prepared for baking



Fig. 347: woman fetching water in a plastic jerry can dressed in foil

bread, so that it is not easily accessible for animals and children (Villagers Ali Adayto, 9-10.02.2011; Semera 21.03.2012, Oliver 1997: 2016). Small plastic sacks suspended from the exposed tent construction conceal also some supplies of tea, spices like e.g. *berbere* pepper powder, salt and sugar used for preparing some meals. Fresh fruits are also kept out of reach of children and may be hidden from them in various places in the house, or even on its roof (Fig. 343).

Among other traditional containers made by Afar, a milking bowl, *amur*, can be found (Fig. 349). It is a wide-rimmed basket made of palm fronds, which are fumigated inside and outside so that the vessel does not leak (Browning, Little 2008). Its shape diminishes to the flat base, which is narrower than its rim. One *amur* is always available at the main homestead for women to milk the home based stock, *hooma*, and the other one is used by men, who carry it with them while they migrate with the dry herd, *magida*, to the remote areas. Men use it communally for





Fig. 348: Ali Adayto, Ewa *woreda*: the milk of home based stock, *hooma*, is used to produce yoghurt and butter, fresh milk is drunk in tea

drinking milk while they are on the move (Villagers Ali Adayto 9-10.02.2011, herders Alele Subula 9-10.02.2011).

The home based lactating stock, *hooma*, is regularly milked by Afar women (Browning, Little 2008) (Fig. 348). Freshly collected milk is added to the morning tea, or used to complement the diet of the small children. The curdled one is a refreshing addition to a meal consisting of bread or porridge. The remaining excess milk is placed in a goatskin similar to the one in which water is stored and churned by means of rocking it forth and back when suspended on the lines till it settles to butter (Villagers Ali Adayto 9-10.02.2011, Mr Sale 21.02.2012, Browning 11.03.2012, Mr Youssef 18.04.2012; browning, Little 2008). The ready butter is stored also in a leather sack made from camel skin. Not only it is used to prepare meals, but also for various cosmetic purposes. Traditionally men apply *ghee* on their hair as means of beauty treatment for their sophisticated hairstyles. That is also the reason why they use headrests during the night - to prevent their hair to collapse, because it needs much work to maintain it (Browning, Little 2008; Villagers Ali Adayto 9-10.02.2011).

Apart from the milking bowl, containers for water, grains and butter, only some other items may be found in the house. *Sahfa*, a big round flat bowl is nowadays commonly found also in the Afar houses (Fig. 351). It is used to wash clothes, but if it is not available, women can also do without it: they take the cloth to



Fig. 349: fumigated milking bowl *amur*





Fig. 350: various cooking utensils like pots, water containers, bowls and pots are stored on the floor around the hearth or hung on the framework



Fig. 351: *sahfa* - flat bowl used for washing

the river and wash it there (Browning 9-10.02.2011). One of the other necessary utensils is the grinding stone, on which women prepare a daily portion of sorghum flour for baking bread (Villagers Ali Adayto 9-10.02.2011) (Fig. 360). A cooking pot, or a bowl is also a must, but no longer are the clay-pots used to cook like it used to be before (Faegre 1979), but rather lightweight aluminum ones, which can be easily purchased in the town markets (Fig. 350). Apart from these, a kettle may be found in the house, some cups or gourd vessels and baskets to keep kitchen items along with some bits and pieces inside (Browning, Little 2008; Browning 9-10.02.2011; House Gubiyra 11.03.2012). All these items are arranged along the walls of the tent armature, preferably closer to the stone hearth, so that they are always handy when they are needed. By means of hanging the tools on the frame women additionally weight it down, which stabilizes its performance during windy times.

The exposed framework of the houses is a good place to store all sort of items, not only the kitchen vessels. If a rope is hung between two bentwood ribs, it can serve as storage for additional clothes, shawls or blankets, but these may be put in some woven baskets as well, or - in the more modern version - in the suitcases or other provisional shelves built of the materials found around (Ali Adayto 9-10.02.2011, Mr Sale 21.02.2012, Gubiyra 11.03.2012). Here also personal items like headrests or combs are placed (Fig. 352), (Fig. 353).



Apart from all these basic items needed to perform everyday duties, in some cases additional furnishings may be also available and to these count stools and benches made of hardwood and animal skins, small cupboards and additional mats for payer, or for guests to sleep on (Fig. 354).

The permanent furniture is, however, more common rather in the settlements of the semi-sedentary communities, who do not migrate frequently.

If remaining time in a day allows it, some women engage in handicraft, especially in supplying their own houses with mats, ropes, baskets and alternatively making some decorations. As Faegre (1979:7) remarks, “*One of the most important things the women do in the tent is to make more tents*”. Yet because it is a part of housework understood as necessary maintenance activities, women seldom perceive it as art (Prussin et al. 1997). Many of these tasks are performed collectively, in company of other female compound inhabitants. House cover is repaired while daily matters are discussed and tea is served; baskets are plaited and decorated with thongs while other women churn butter or plait mats or ropes (Mrs Zahara 12.04.2012) (Fig. 353).

### *Inside hearth*

On the opposite side of a family bed, or just next to it, three relatively big stones are installed on the ground that will form a hearth (Fig. 356). These are arranged in a way that a large pot or kettle can be easily put on it to cook water for tea or a simple meal consisting of thick sorghum porridge, *asida*, served with spices (Mrs Moomina 12.04.2012; Browning, Little 2008). The positioning of a hearth inside a house is not so much of a symbolical importance, as it is of a practical one. Sheltered with closed walls of the tent, it does not pose risk to other buildings and enclosures in the compound in case of hazardous and strong winds. That is the reason why fireplaces in the nomadic



Fig. 352: traditional men's headrest



Fig. 353: Afar women engage in basketry, weaving mats, producing sisal ropes and decorations for a house



Fig. 354: modern furniture like benches, cupboards and suitcases are frequently encountered closer to towns among semi-sedentary families



Fig. 355: Ali Adayto, Ewa *woreda*: women collecting wood in the nearby forests

settlements are either installed inside the houses - or in any other sheltered room - or if outside, then can be found only at a considerable distance from the settlements (Prussin et al. 1997) (see „Bread oven“ page 215).

The position of a hearth inside an Afar house is chosen according to personal preferences of the users. Some women place it closer to the house entrance, so that they have more daylight while cooking and the smoke can easily get outside (Mrs Fatuma 11.03.2012) (Fig. 289), the others prefer to have it a little deeper in the tent to take the most advantage of the warmth it produces (Mr Sale 21.02.2012, Mrs Moomina 12.04.2012) (Fig. 228), (Fig. 230), (Fig. 357). The heating effect is especially important at nights in the cold dry season, when temperatures outside may drop to a couple degrees below zero Celsius and a small hearth lit inside warms up the air in the tent to a relatively comfortable temperature.

Additionally, if a fireplace is situated further from the entrance, an impregnating effect of smoke depositing soot on the framework and mats can be taken advantage of (Women Ali Adayto 9-10.02.2011). Among traditional communities living in the rural areas, a custom of smoking a house is still very common (Fig. 271), (Fig. 272). Every morning a fire is lit inside to prepare some tea and heat the house a little bit. If all mats are closed, the smoke may only seep through the crevices and pores of the mat cover and the atmosphere inside becomes very pungent and unhealthy. Especially by the households comprising both permanent and mobile structures the smoke does not have a direct outlet in form of an entrance: the access to a mobile house *daboyta* leads only through the *grass hut* (Fig. 291), (Fig. 296), (Fig. 332) and so is the airing of a mat tent only possible when the side mats are lifted (Ali Adayto 9-10.02.2012; Browning, Little 2008).

In round *daboytas* the fireplace hardly ever is separated visually from the remaining functions of the house by means of vertical division walls (see „Mobility versus permanence, space differentiation, gender separation“ page 195), whereas it is not seldom at all in

the elongated ones. In the house visited in the Dodom area, the hearth was placed behind a curtain wall, which divided the house into a living space and the “kitchen” (Fig. 238). Next to it a side-entrance to a house was placed, which provided the space with light and fresh air (Dodom area 18.04.2012). Apparently Oliver (1998:2016) found a similar solution introduced in the houses visited during their study in the Middle Awash, where elongated houses may also be found. Here however, a hearth was placed behind a small partition found in the front part of the house, just behind the entrance (Fig. 240), (Fig. 327).

Understandably, an open fire in a tent poses a great threat to the wooden framework and mats, for which reason some precautions need to be taken to prevent it from spreading on the construction. The wall behind a fireplace is plastered with a thick layer of clay or covered with stones, or a screen made of any fireproof material like e.g. a tin sheet, which needs to shield a sufficient area around the hearth (Ali Adayto 9-10.02.2011, Mr Sale 21.02.2012, Mr Mohammed and his wife 22.02.2012, Mrs Moomina 12.04.2012, Mrs Zahara 12.04.2012, House Dodom area 18.04.2012) (Fig. 357) to (Fig. 359). Yet, the best prevention is to simply avoid an open fire in the house, so one has to cautiously choose materials, which are used as fuel. As far as it is possible, women will prepare charcoal beforehand to use it instead of raw pieces of wood, which can easily burst with flames. Charcoals are prepared outside the house in the pits, which are specially designed for this purpose, and then only smoldering pieces of wood are used for cooking. In the rural areas also dry animal dung will be burnt (Browning 9-10.02.2011).

Some traditional Afar communities, who have power to treat burns, believe that they are not allowed to extinguish a burning house or any other kind of fire with water because of the power, which was granted to them. If a house in their community catches fire, it will burn down (Browning 9-10.02.2011).

When the temperatures outside rise high, with the peak in May, June and July, a hearth may be moved outside from a house to a





Fig. 356: Gubiya, Yalo *woreda*: a hearth consisting of three stones is placed close to the entrance so that the smoke can easily leave the house



Fig. 357: Ali Adayto, Ewa *woreda*: a hearth inside *daboyta*: smoke seeps through the pores of the roof; a proper ventilation is difficult when all mats are closed, because the entrance to *daboyta* leads through the *grass hut*, there is no direct outlet to the outside but through the mats



shaded place in a compound, so that cooking may be performed there in the hot time of year (Mr Sale 21.02.2012). Alternatively a provisional shelter may be erected for the meantime, so that the utensils and food are shaded from dusty air (settlement Gubiya 11.03.2012).

### *Bread oven*

Apart from the hearths inside of the houses, additional pits for baking bread, *gaambo*, are installed in the vicinity of the settlement. A couple of families living in one compound may share commonly one bread oven if they wish so, otherwise each *buda* may have one to its own disposal. It should be located at some distance away from the compound enclosures and houses, so that fire does not spread while it is unattended, preferably somewhere close to shrubs, which provide a natural windscreen for it (Ali Adayto 9-10.02.2011, Mrs Moomina 12.04.2012) (Fig. 86), (Fig. 313).

For an oven a knee deep and forearm wide hole is dug in the ground, evened and rendered on four sides with flat stones found by the river, which are hammered vertically into the hole providing four flat surfaces to bake bread (Fig. 362). Early in the morning, when bread is to be baked, just before sunrise, a fire inside the oven is lit and left to die out while the stones are preheated.

In the meantime dough of ground sorghum, salt and water is prepared. The sorghum, which is soaked the night before in water, is ground freshly each morning to the consistency of flour or porridge. Traditionally a flat quern stone laid on a piece of cloth or foil and a cylindrical grinding tool are used to prepare the flour. During cold morning hours of the cold season women grind the flour inside the house, but if it is already warm outside, they may perform it in front of the house as well (Browning, Little 2008; Browning 9-10.02.2011) (Fig. 316), (Fig. 360). The ready dough is set aside to rest for a while in a bowl until the oven is ready to be used.

As soon as only smoldering charcoals are left in the pit, small portions of dough are watered, rolled into balls of a fist-size and flattened to palm-size flat breads, which are then patted on the vertical surface of the preheated stones in the oven pit. After all flat breads are placed inside, the pit is covered with an aluminum bowl or piece of tight cloth and breads are left to bake for a quarter to half an hour, depending on their size and thickness. When they are ready, the cover is removed and flat breads can be detached with a knife or a stick from the hot stones. They are cleaned of ash rests and placed on a clean plate (women Ali Adayto 9-10.02.2011; Browning, Little 2008) (Fig. 86), (Fig. 361), (Fig. 362).

Also separate pits for preparing charcoal may be placed next to the bread oven, in which charcoals for *ch's*, tea, or even in some parts of region coffee preparations, or cooking small dishes



Fig. 358: wall behind the hearth plastered with mud



Fig. 359: the construction of the tent is covered with metal sheets, which protect it from catching fire





Fig. 360: quem stone is used to prepare flour for flat breads



Fig. 361: a bread oven rendered with stones needs to be preheated before use; flat breads are placed vertically on the stones



Fig. 362: one oven may be shared by the whole community

inside a house, may be burnt. Most of times they take a form of tin containers dug into the ground, or simple fireplaces (Mrs Hawa 22.03.2012).

Apart from traditional earth bread ovens, also fireplaces typical to other regions of Ethiopia may be encountered in Afar compounds, but it is mostly either in the urban areas, or directly on the border with the Amhara Region, where they originate. These are separate *injera* - huts sheltering fireplace made of three stones, on which special pan for preparing *injera* is placed (Mr Fatuma 11.03.2011, Mr Ahmed 5.03.2012) (Fig. 87), (Fig. 363).

## Ch's

Scarce water, which is in first place destined for drinking and animal-watering, is seldom wasted for hygienic purposes, and especially everyday ablutions with water, as it is known in urban areas of the region, is only very rare to meet in the rural areas. Yet traditionally other means of preserving body and clothing have been developed and it is by means of smoking them in the so-called *ch's* – Amharic for smoke, also called *bodo* in Afar - smoke shower.

The process of “smoking” with *ch's* reminds to some degree of a steam sauna known from the northern parts of Europe. The difference is that instead of water, smoke of smoldering charcoal is used and only the outer part of the body - for obvious health reasons - may be exposed to it. In this regard, either only the lower part of the body, from the waist down, or the whole body, but without head, is subjected to it. Interestingly, traditionally only women enjoy this ritual of smoking (Mrs Moomina 12.04.2012, Mr Tibo 12.04.2012).

A space designated for the *ch's* should be somewhere in the background of a compound, allowing for some intimacy. It may be



Fig. 363: *injera* pan sheltered in a hut





Fig. 364: traditional *ch's* chair made of mud and wood

just behind a house, close to the enclosure, shielded from winds and curious goats and sheep (Fig. 311), (Fig. 313). A pit, about fifty centimeters deep and of about 30-40cm in diameter, is dug in the ground and rendered with clay. When first fire is lit inside and left to die out, the walls are firmed and *ch's* is ready to use. Additionally a small seat may be prepared in form of a relatively thick stick laid across the hole and a small lean made of clay on the back (Fig. 364). In this pit, a piece of smoldering charcoal is placed. The only thing left is to sit on the bench, or squat if one is not foreseen, cover complete body up to the neck with a cloth and wrap it precisely around, so that the smoke does not get to the airways or outside the cloth, and enjoy the smoke for about quarter of an hour, or longer if desired. It is not necessary though, that such a special smoking pit is prepared: one may be as well seated on a wooden bench, on a piece of wood, or just squat on the firm ground, with charcoal put underneath a cover to enjoy *ch's* (Mr Tibo 12.04.2012, Mrs Moomina, 12.04.2012,



Fig. 365: basket made of twigs used for drying and smoking clothes

Frauenkaravane 2010)

*Bodo* may be taken in the evening, after a long hot day, for relaxing the body and giving it a nice smell. Very dry climate with high evaporation level leaves human skin dry and slightly covered in dust. Smoking not only leaves a nice and gentle smell of burnt wood on the skin, but it also protects additionally from insects like mosquitoes, preventing to some extent contracting of malaria, which is one of the most fatal diseases, apart from cholera, known in the region (Browning, Little 2008).

Also freshly washed clothes are dried and smoked over *ch's* as a means of natural impregnation, which should help repelling insects, but it also gives them a nice smell. For this purpose baskets resembling in shape and structure the armature of *daboyta* (Fig. 365) to (Fig. 367) are placed over *ch's* pit with charcoal and incense inside and then pieces of clothes are draped over it and smoked (Mr Sale 21.02.2012, Mrs Barka 8.03.2012, Mrs



Fig. 366: a basket placed over *ch's* pit



Fig. 367: clothes are impregnated with smoke against mosquitoes





Fig. 368: preparing charcoal

Moomina 12.04.2012, Mr Tibo 12.04.2012) .  
 In areas with better access to water, ablutions with water are gradually beginning to find their way into hygiene rituals, but mostly due to the campaigns of local health organizations teaching communities about healthy habits in various areas of life. These aim foremost at reducing mother and child mortality after birth due to health complications caused by harmful traditional practices forbidding washing baby and mother for a couple of days after delivery (Browning March 2012).

Nowadays in some compounds areas for ablution may be also foreseen. Whether it is for hygienic purpose, or as performing a symbolical religious act, these places are fenced to assure intimacy and placed rather on the back of a compound. But symbolical ablution before prayer, as it is known in Islam, may as well be performed with sand, if no water is available, as it is often the case in the rural areas (Browning 9-10.02.2011, Mr Mohammed 22.02.2012, Mrs Moomina 12.04.2012).

After all, smoking of clothes and body is still being practices



Fig. 369: Ali Adayto, Ewa *woreda*: Imam of the local community

among pastoralist women, who lead also more settled life on the outskirts of urban centers. According to them it does not only keep the mosquitoes away, but it is also treated as traditional relaxing ritual after a long day of work in the heat (Mrs Moomina 12.04.2012).

### *Prayer place*

Bigger communities in the region have not only council of elders as their representatives, but also spiritual leader, Imam, who conducts prayers on Fridays both for men and women in small local mosques, which are constructed by the community (Browning March 2012).

It is however not explicitly required of Islam followers to worship in Mosques, mentions Denyer (1978), and prayer places do not need to be anything more than a “*dedicated space set aside for the purpose of worship and oriented towards Mecca*” (Denyer 1978:54). Hence in Afar communities other prayer places, apart from Mosques, may be also designated according to needs,





Fig. 370: ali Adayto, Ewa *woreda*: some compounds have a designated place for prayer, sheltered from the animals

either in compounds - for these family members, who are not able to visit mosques, or women taking care of households and not willing to interrupt their occupation for longer time - or in sheltered places in the surroundings, if one is on the way to visit family, to a further water source, or just resting in the late afternoon.

Men prefer praying in groups, so they most of times leave the compound for a prayer time. Women have a separate prayer room designated for them in the Mosque, but most Afar women prefer to stay in the compound and pray in *daboyta*, or outside, just next to the house in a chosen place. Such designated prayer place does not need to be anything more than a clean-brushed space, on which a mat or a scarf is spread, and oriented towards the northeast direction. But in family settlement, additional enclosure may be added to it, to ensure more intimacy and especially to get rid of annoying goats. Such enclosed spaces for prayer may be used both by men and women, but they pray separately. Yet places for prayer may be anything but a shadowed space under a tree, or cleaned up space on the floor of a house (Browning 9-10.02.2011) (Fig. 313), (Fig. 370).





# ON THE BRINK OF CHANGE

## SUMMARY, PROSPECTS

Dwelling forms of Afar communities inhabiting various parts of the region, demonstrate extraordinary adaptability of their architecture to various circumstances, proving tremendous learning capacity of this population. The culture of building among nomads is governed entirely by the pastoral style of life and survival strategies adequate to living conditions. Spatial solutions adopted in particular neighborhoods illustrate Afar's practical approach to architecture, which is created for a specific purpose and takes shape in accordance with individual situation on the spot rather than following some formal abstract principles rooted in traditional beliefs, habits, or patterns characteristic of a particular cultural circle. Each case analyzed in this study shows the complex application of solutions that respond to various socio-economic, environmental and political challenges.

Nomadic people consider various aspects of their environment and surroundings when deciding on migration and settling strategy. The availability of water and pasture in different areas determine the direction and frequency of migration of each community. It influences welfare of their animals, which are the basis of their economy. The easy access to resources allows reducing the range and frequency of seasonal movements, while restricted access forces more frequent migration that involves larger areas. This in turn affects the size of the communities that migrate together and thus the size of the settlements that are established in the neighborhood: it allows larger groups of pastoralists to inhabit areas where these resources are readily available, making others disperse in smaller groups there, where this access is made difficult.

Smaller or larger range of movement also affects the choice of residential typology, which must be portable, at least to some degree, and therefore built with lightweight materials and easy to break down and reassemble. Rarely migratory families can build even permanent structures in their habitats next to the mobile typologies, as they spend most of the year in the same place. This is not the case for highly mobile pastoral families, whose choice is mainly for portable homes.

Characteristics of the surroundings also matter for the shape of settlements and houses. The topography of the site, the direction and strength of the winds, the frequency of rainfalls, as well as the availability of raw materials on site, are just some of the environmental conditions directly influencing the character of residence. They determine the location of the compounds, the size and arrangement of housing structures and animal pens within its enclosures, and the construction materials for houses and corrals. The potential threat from wild animals and hostile neighbors requires the pastoralists of fencing their settlements. Various external factors can also affect patterns of migration and settlement. Unsettled land tenure leads to conflicts between the Afar and the state, which in many cases result in the loss of land by the local population. Also armed clashes with other groups of pastoralists over resources often force Afar to adjust the scope and direction of migrations, as well as the size of their compounds against the traditional strategies.

The Afar housing typologies, though at first glance unsophisticated, conceal the refined complexity characteristic of solutions that have evolved over centuries. Behind the seemingly simple form of *"tent made of mats and sticks"* (*daboyta*) or *"hut made of sticks and grass"* (*grass hut*) there is a centuries-old process of technical and functional optimization. This architecture is created by the users themselves and adapted to their needs and requirements of their environment. It also reflects their aesthetic visions. Rudofsky (1964:10) writes in his most famous book *"Architecture without Architects"* about the beauty of this vernacular architecture, which, according to him, *"has long been dismissed as accidental"*. Meanwhile, writes Rudofsky (1964:10), *"... we should be able to recognize it as the result of rare good sense in the handling of particular problems. The shapes of the houses, sometimes transmitted through a hundred generations, seem eternally valid, like those of their tools"*. The structure of the Afar domiciles primarily reflects their mobile lifestyle and the need for frequent migration. Thanks to the technology and materials used, it works well in windy and rainy conditions while



providing protection against strong sun radiation and maintaining thermal comfort both day and night. Also the arrangement of space corresponds to the practical requirements of their pastoral life embedded in specific social and economical realities.

The flexibility of this architecture is not limited only to the technical qualities of the materials from which it is built, and to its portability. The logical framework system allows for modification of the size of houses by simple addition or subtraction of structural components and covering elements. It also enables the change of the arrangement of space according to the needs of the family or the season of the year.

Easy adaptation of these house typologies to personal preferences and mobile lifestyle determines the versatility of traditional architecture: it works well both under extremely arid conditions, as well as in savanna-like areas, including all remaining ecologies found in the region (Fig. 371).

All these aspects and considerations show the great potential of nomadic architecture in the surroundings, where it is actually difficult to believe that any people and animals can survive. However, adaptive capacity of Afar communities and their pastoral ability is nowadays exposed to several challenges of environmental, social, economic and political nature. Climate change decreasing rainfall, deforestation and lack of effective protection of the rights to land, force Afar people to reconsider their life strategies. Some of them respond to those challenges by striving to remain self-subsistent, but subsidiarily entering the urban economy, i.e. selling dairy products or livestock in the towns, in order to buy grain or other food to provide for their family. They also rely to some extent on the community members undertaking jobs in the towns and supporting those staying in the rural areas. Others lose their pastoral ability and settle in the urban areas gradually giving up all attributes of the pastoral lifestyle.

The former group, because of sufficient number of animals and strong social network supporting them, remains capable of saving independence and freedom, even if their economic ties with urban areas are getting stronger. The latter group lacks this diversification and tries to fully adapt to the urban lifestyle. This group is not homogenous. Among them we can distinguish agropastoralists, who gave up the mobile lifestyle, appropriated some part of common clan land and gain profits from cultivating land - either for own use, or for commercial purpose. There is also a young generation of children of the dispossessed pastoralists, who grew up already in towns, who perceive pastoralism as outdated and prefer opportunities and entertainment, which town provides. What is common for them is that sedentarization – even forced by external factors – seems to be the only way to achieve some level of economic security. They are ready to resign from pastoral independence and freedom in order to take advantage of job opportunities or access to public services (education, healthcare) in the urban areas.

Partial or full “urbanization” of pastoralists clearly changes their settlement patterns and perception of their shelters. As these do not need to be mobile anymore and they do not suit the

modern needs and visual tastes of town inhabitants, they are keenly replaced for a *ch'qa* house, the so called Swahili typology according to Oliver (2003), or a concrete house according to them meet all these requirements (Mr Sale 21.02.2012, Mr Ishaq 27.02.2012, Mr Ali 9.03.2012). Some Afar want to go with the spirit of times and a form of their residence must be adjusted accordingly. Many of them criticize *daboyta* for insufficient living space, missing electricity, the need for cyclical maintenance and lacking representative character. The newcomers settle either on the town outskirts, where they live in traditional nomadic houses *daboytas* until they can afford building own *ch'qa* house, or they rent small rooms from other Afar, who had settled in town before them.

There is, however, a group of pastoralists, who value traditional way of living and although they formally settled in towns, they continue to reside in traditional round houses. According to them *daboytas* manage in a much more effective way the climate inconveniences, especially in hot wet season. Good ventilation and relative heat isolation is something that natural fibrous materials, from which *daboyta* is made of, provide, in contrast to houses with solid walls and covered with tin sheets, which make the atmosphere inside unbearably hot day and night, especially in the hot period.

While sedentarization improves the living conditions of some Afar communities, some adverse or side effects cannot be ignored. For example, shifting building competencies to the private entrepreneurs and marketizing the process as a paid service undermines its significance as culture-forming act performed commonly as a ritual of socializing and empowering meaning. It also puts additionally pressure on all new town dwellers, since demand for housing in urban centers grows rapidly and scarcely anybody can afford a *ch'qa*, all the less a concrete house. And this is due to a couple of reasons. Because of serious deforestation issues in the region, wood fetches much higher prices than it used to be a few decades ago and wood is the main building source for the *ch'qa* house (Fig. 372). The alternative, the house made of prefabricated concrete blocks, is even more expensive, because it utilizes imported materials. The pressure on pastoralists, who live in the traditional typologies on the town outskirts is all the higher, since urban planning legislation in some towns, like e.g. in the capital Semera, classifies them as slum dwellings since they neither meet the requirements for technically advanced and fireproof construction, nor they provide contemporary standard of living. All the more that the plots these people assume are granted to them from the traditional clan institutions and not purchased from the town administration, hence they are perceived illegal.

Though the sanitation and fireproof concerns of the town administrations are legitimate and accepting traditional typologies would lessen the financial pressure only in the short run, there is still no alternative, which would both meet the financial needs of the newcomers and allow sustainable development of the housing market. None of the proposed typologies, the *ch'qa* or concrete house, meet these requirements. Their modern appearance is quite deceptive, since they neither meet the



Fig. 372: Logya, Dubti *woreda*: one of the side streets of town; wood is extensively used both for construction of houses and fences

basic standards of art of building (lack of stability of construction, improperly built foundations and walls, leaking roofs that are easily blown away because of poor fixing, poor choice of materials), nor the requirements for thermal comfort of the inhabitants (poor ventilation, high heat transmission through metal roofs, leaking covering). Considering the additional negative environmental impact of the *ch'qa* house and high construction prices of both *ch'qa* and concrete houses, they provide no good alternative to the majority of citizens.

Sedentarization creates also adverse effects going far beyond material aspects of habitation. Pastoralist ability is being undermined, including the application of practical skills and knowledge, maintaining economical independence and involvement in complex social support network. For many it means gradual impoverishment and growing dependence on town economy as the natural community ties and contact to the rural areas are broken for a more anonymous urban community. What is more, the position of women changes in a profound way. Traditionally, women are responsible for creating the entire material culture of building, which accompanies them throughout their life and marks important life occurrences: from birth, through marriage and adult life to their older age. It places them also in a special position in society and gives them exclusive rights to the home and all related artifacts. Responsibility for shaping the surrounding space gives them a sense of cause and belonging to a wider community of women who are bound by the culture-forming ritual of building in a physical, as well as in a symbolical sense.

Under the new circumstances, the foundations of the material heritage of the nomadic women are undermined. They lose their position as builders in favor of paid male specialists, mostly from Highlands, and as their technical knowledge and skills atrophy, while not being exercised, and the control over the unknown house structure lies behind their influence, also their ownership rights over this house erode (Prussin et al 1997). Along with this shift in the ownership and change of domains, also the efficacy

of some activities and rituals disappears. The practical aspects of mobile architecture, including transport technology, are not valid anymore. Also the rituals of building that concern marriage or common rebuilding of the houses in the new areas lose their social and symbolical meaning. As women gradually lose their independence and feeling of empowerment, the process of building loses its meaning as one cementing social ties and constituting subsequent phases of life. *"The essential setting for their creativity evaporates, and this special, albeit major, part of nomadic material culture slowly disintegrates and disappears"* writes Prussin et al (1997:149).

Attempts to reverse these processes completely would be unrealistic and ineffective. Economic, social and political megatrends will further promote sedentarization of pastoralist communities and many of them will benefit from this process. Pastoralist dwellings will be gradually ousted by urban forms and the sociocultural heritage associated with traditional architecture may disappear within upcoming decades. However, the extinction of material culture grounded in Afar architecture is not inevitable. What we could realistically expect from the political decision-makers (central and local authorities) is to ensure that Afar people can freely choose their life (also settlement) strategies and sedentarization does not remain the only available option (Scott- Villiers, Abkula, Wilson eds. 2006). This would involve acceptance of the communities' rights to land, and as well as multiple measures addressed to those who decided to settle in the towns. Besides improving the infrastructure and access to public services, it is crucial to support development of adequate building techniques, which would not involve wood, meet thermal requirements and at the same time, would be affordable. All those actions require at the first place recognition of the Afar people as equal members of the society deserving respect for their rights and active protection from the state against negative environmental or economic impacts. Whether the state authorities are ready to make this first step remains unclear.



# GLOSSARY

**/pronunciation/ original spelling** (Language)  
 (Af.) Afar, (Ar.) Arabic, (Amh.) Amharic, (Lat.) Latin

**/aari/ qari** (Af.) house

**/absuma/ absuma** (Af.) Absuma marriage is one of the most common customs practiced between paired lineages of a clan or two clans, and it assumes marrying the cross cousin: a man, for instance, marries his Absuma - one of the daughters of his father's sister (Mr Tibo 11.04.2012). This marriage form involves livestock transfer within groom's family, as well as payments for bride's family in form of 'bride wealth' (e.g. cloth, consumer goods, food for wedding ceremony). Thanks to the distribution of the animal assets among linked families, wealth may stay concentrated within one social group: *"Most wedding expenditures are contributed to a groom by his close paternal and maternal kin as well as close friends. No livestock is transferred to the bride's family"* (Getachew 2001:73). This marriage practice makes the head of the household own all family wealth, which includes also any lactating stock given by the bride's lineage. The husband's property does not encompass the house and any utensils produced by the women for its purpose, as well as the small stock, which belongs to the bride (Getachew 2001):

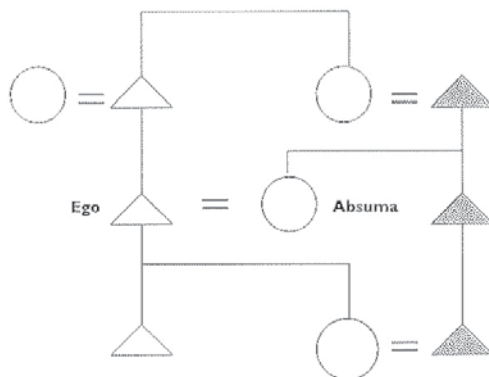


Fig. 373: sketch diagram of absuma marriage, Getachew 2001:23

**/Adohimarra/ and /Asahimarra/** (Af.) In some literature reference is made to one of the two Afar confederations of clans (see Getachew 2001)

**/afa/ afa** (Af.) mouth, opening, doorway

**/Afar/ Qafar** (Af.) Afar people

**/alta/ qalta** (Af.) mountainous area; also rocky plateau, stony plane, or name of specific ecology where this type of relief dominates - for Afar in the eastern part of the Region raining period pastures

**/amur/ qamur** (Af.) traditional milking bowl made of grass; wide-rimmed and diminishing to narrowed base; washed a couple of times with curdled milk and then smouldered inside; used to milk camels and other animals (Prussin et al. 1997)

**/asida/ qasida** (Af.) porridge made of sorghum grain

**/ayso/ qayso** (Af.) grass

**/baado/ baado** (Af.) land

**/birkat/ birkat** (Af.) bathtub, water cistern

**/bodo/** (Af.) Afar traditional smoking of the body and clothes; see Amh. **/ch's/** ርካስ

**/buda/ buxa** (Af.) nuclear family, household, family unit (not material house), home

<i>/ch'qa/</i> ሞቅቃ (Amh.)	mud; also building technology in which wooden palisade is plastered with mud mixed with straw
<i>/ch's/</i> ሞቅስ (Amh.)	smoke, Afar use this term to describe smoking of the body and clothes; see: Af. <i>/bodo/</i>
<i>/daagu/ xaagu</i> (Af.)	customary information exchange system: every man met on the road is interviewed about e.g. overall weather and pasture situation in the region from which he just came, or if he saw any lost animals etc.
<i>/daboyta/ daboyta</i> (Af.)	term used for the Afar traditional house
<i>/dakha/</i> (Af.)	thick porridge of polenta consistency, cooked for special occasions: wheat, water, salt, red pepper powder, goat milk and butter; see: <i>/asida/</i>
<i>/daala/ xaala</i> (Af.)	family, clan, lineage, sub-clan, extended family
<i>/Derrapto/</i> (Af.)	local tree in Dubti <i>woreda</i> , which is used for building purposes
<i>/desso/ desso</i> (Af.)	forbidden; also land used exclusively by one clan; utilizing its assets is forbidden to the foreigners
<i>/duka'a/</i> (Af.)	raining season pastures in the southern and western part of the region, situated mostly on higher altitudes, where acacia forests and shrub land along with grass-pastures occur
<i>/gaambo/ gaqambo</i> (Af.)	bread
<i>/gaala/ gaala</i> (Af.)	camel
<i>/ganta/</i> (Af.)	cooperating settlement, lineage settlement
<i>/gaso/ gaso</i> (Af.)	wall, enclosure, camp, compound, courtyard
<i>/giilal/ giilal</i> (Af.)	the north-east cool wind, which blows in winter; long dry period from October/ November to January/ March, cool weather
<i>/Habaleyta/</i> (Af.)	local tree in the western part of Afar region used for traditional building purposes; it has wild fruits
<i>/habhab/ habhab</i> (Af.)	watermelon
<i>/hagay/ cagay</i> (Af.)	short dry period before <i>/karma/</i> from May-June: hot, dry and windy
<i>/haahay/ caacay</i> (Af.)	wind
<i>/halawwa/ calawwa</i> (Af.)	sticks, twigs, laths of a mat tent
<i>/Hedayto/</i> (Af.) building	<i>Grewia erythraea</i> (Lat.), local tree in the western part of Afar region used for traditional purposes; it has wild fruits
<i>/hooma/ cooma</i> (Af.)	domestic herd, main camp; herd of domestic cattle
<i>/idoola/ idoola</i> (Af.)	elders, clan elders
<i>/injera/</i> ኦንጅራ (Amh.)	sourdough-risen flat bread made of <i>tef</i> flour
<i>/kalo/ kaqlo</i> (Af.)	swampy area, undermined area, (washed with water) fertile marshland around the rivers, flooding planes around perennial and intermittent rivers
<i>/karma/ karma</i> (Af.)	summer rains from July to August/September (main raining period)
<i>/kebele/</i> ቀበሌ (Amh.)	ward; the smallest administrative unit of local government in Ethiopia; a number of <i>kebeles</i> form <i>woreda</i>
<i>/kedo/ kedo</i> (Af.)	tribe, clan



<b>/Kelayto/</b> (Af.)	local tree in Dubti <i>woreda</i> , which is used for building purposes
<b>/Kusra/ kusra</b> (Af.)	<i>Ziziphus mauritiana</i> (Lat.), Jujube tree, also known as wild cherry tree, wild edible fruits
<b>/mablo/ mablo</b> (Af.)	court, traditional judgement, negotiations, hearing
<b>/mad'a/ madqa</b> (Af.)	law, customary law
<b>/Miderto/</b> (Af.)	<i>Cordia gharaf</i> or <i>Cordia sinensis</i> (Lat.), wild fruit tree, wood also used for traditional building purposes - construction of <i>daboyta</i> around Awash River
<b>/muus/ muus</b> (Af.)	banana tree
<b>/olloyta/ olloyta</b> (Af.)	bed; also traditional bed mat made of sticks and hide, a dowry which newly married woman receives from her mother
<b>/saddaga/ saxxaga</b> (Af.)	note, announcement of something new; also celebration feast or ceremony for the opening of new things, e.g. after a new house is built
<b>/sahfa/ sacfat</b> (Af.)	tub for washing
<b>/sar bet/</b> ሳር ቤት (Amh.)	customarily called <b>/tukl/</b> ; circular house of Amhara people and some Oromo: walls are made of wooden palisade with horizontal bracing, roof is conical and thatched; probably adapted by Ethiopians from the Sudanese dwellers on the border of these two countries (Al-Wer 2009:68); term <b>/tukul/</b> or <b>/tukl/</b> comes from Arabic and was primarily used in relation to Sudanese conical grass hut, especially kitchen (Al-Wer 2009:68)
<b>/Sarganto/</b> (Af.)	tree species growing by the rivers and used for building purposes - roof structure etc.
<b>/shiro/</b> ሻሮ (Amh.)	chickpeas, beans or lentils stew, also with addition of minced onions and garlic, spices; served on top of <i>injera</i>
<b>/sorba/ sorba</b> (Af.)	or <b>/shorba/</b> ሻርባ (Amh.), soup
<b>/sugum/ sugum</b> (Af.)	spring or spring rains from March to April (small/ short raining period)
<b>/T'ef/</b> ጠፍ (Amh.)	<i>Eragrostis tef</i> (Lat.), a species of grass native to the northern Ethiopian Highlands; used mainly in production of <i>injera</i>
<b>/tukl/</b> (Ar.)	see <b>/sar bet/</b> ሳር ቤት (Amh.)
<b>/wahari/ wahari</b> (Af.)	hot wind which blows during summer months and brings masses of sand and dust
<b>/woreda/</b> ወረዳ (Amh.)	district; third-level administrative unit in Ethiopia after Region and Zone; it is managed by a local government
<b>/Woyane/</b> (Af. / Amh.)	<i>Prosopis juliflora</i> (Lat.), a non-endemic shrub, which was introduced to stop deforestation problems in Afar Region, but it turned to be an invasive weed only contributing to the rapid deforestation
<b>Garsa</b> (Af. / Amh.)	<i>Dobera glabra</i> (Lat.), plant native to Ethiopia, by some Afar called <i>Gelata</i> or <i>Garsa</i> ; its wild fruits are edible when cooked for many hours, it is considered a famine food
<b>Issa Somali/ Issa</b>	pastoralists living in Sitti Zone of Somaliland in Ethiopia, parts of Somalia and Djibouti; Afar and Issa compete over resources, but the conflict has also political importance
<b>Kereyu</b>	pastoral neighbors of Afar in the area of the Awash National Park, on the border with Oromia Region
<b>Sheikh</b> شيخ (Ar.)	elder, leader, religious leader
Currency equivalent:	1 ETB =0.043 USD= 0.036 EUR (17.09.2017)

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**Figure 364** source: Andrea Rieger-Jandl 2011

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**Figure 366** source: Emilia Chocian 2012

**Figure 367** source: Emilia Chocian 2012

**Figure 368** source: Emilia Chocian 2012

**Figure 369** source: Petra Gruber 2011

**Figure 370** source: Ferenc Zamolyi 2011

**Figure 371** source: Emilia Chocian 2011

**Figure 372** source: Emilia Chocian 2011

**Figure 373** source: Getachew 2001:23



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